

FEDERATION OF MYANMAR ENGINEERING SOCIETIES (FED.MES)

Fed.MES

Construction Materials Testing Instruments

08 March 2025

-  Land Surveying Instrument
-  Construction Materials Testing Instrument
-  Bathymetric & Hydrographic Surveying Instrument
-  Educational, Training & Skill Development Instrument
-  Geological & Earth Exploration Instrument
-  Air & Water Quality Testing Instrument
-  Weather, Environmental & Horticulture Instrument
-  Laboratory & Scientific Instrument



Construction Materials Testing Instruments



Construction Materials

Soil



Aggregate



Concrete & Cement



Reinforcement



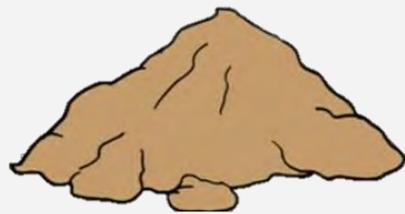
Bitumen



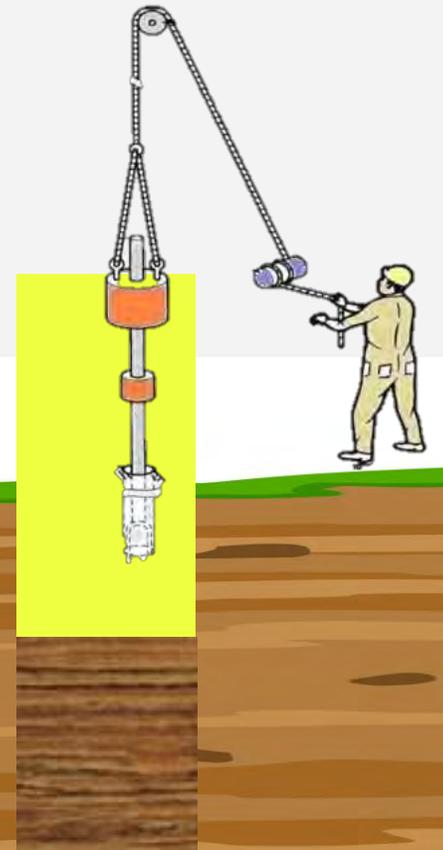
pavement



Borrow Soils



Undisturbed or
Disturbed Samples



Soil Lab



Soil Lab

To determine the particle size distribution of granular materials



SIEVES ANALYSIS



Used for fine grained soils (grain size smaller than 0.075 mm)



HYDROMETER ANALYSIS



**USA Standard
ASTM Calibration Test Sieves**

Calibration Test Sieves are used when the application demands the highest accuracy and repeatability available. Calibration Test Sieves start with our Standard ASTM Sieves and include an added calibration level verification. This verification measures about twice as many openings in the sieve as is done for an Inspection Sieve. Calibration Test Sieves provide a 99.73% level of confidence that the standard deviation of these openings is within the maximum allowed by ASTM. A Calibration verification is provided with each sieve.

**USA Standard
ASTM Inspection Test Sieves**

Inspection Test Sieves are used when accuracy and repeatability are paramount. Inspection Test Sieves start with our Standard ASTM Sieves and include an added Inspection level verification. This verification specifies the number of openings in each sieve after the cloth has been mounted to the frame. Inspection Test Sieves provides a 99% level of confidence that the standard deviation of these openings is within the maximum allowed by ASTM. An Inspection verification is provided with each sieve.

**USA Standard
ASTM Test Sieves**



Sieve Size	Brass Frame Stainless Mesh		Stainless Frame Stainless Mesh	
	Full Height 2" (50mm)	Half Height 1" (25mm)	Full Height 2" (50mm)	Half Height 1" (25mm)
4" (100mm)	H-3920CS4.000	H-3910CS4.000	H-3920CSS4.000	H-3910CSS4.000
3-1/2" (90mm)	H-3920CS3.500	H-3910CS3.500	H-3920CSS3.500	H-3910CSS3.500
3" (75mm)	H-3920CS3.000	H-3910CS3.000	H-3920CSS3.000	H-3910CSS3.000
2-1/2" (63mm)	H-3920CS2.500	H-3910CS2.500	H-3920CSS2.500	H-3910CSS2.500
2.12" (53mm)	H-3920CS2.120	H-3910CS2.120	H-3920CSS2.120	H-3910CSS2.120
2" (50mm)	H-3920CS2.000	H-3910CS2.000	H-3920CSS2.000	H-3910CSS2.000
1-3/4" (45mm)	H-3920CS1.750	H-3910CS1.750	H-3920CSS1.750	H-3910CSS1.750
1-1/2" (37.5mm)	H-3920CS1.500	H-3910CS1.500	H-3920CSS1.500	H-3910CSS1.500
1-1/4" (31.5mm)	H-3920CS1.250	H-3910CS1.250	H-3920CSS1.250	H-3910CSS1.250
1.06" (26.5mm)	H-3920CS1.060	H-3910CS1.060	H-3920CSS1.060	H-3910CSS1.060
1" (25.0mm)	H-3920CS1.000	H-3910CS1.000	H-3920CSS1.000	H-3910CSS1.000
7/8" (22.4mm)	H-3920CS.875	H-3910CS.875	H-3920CSS.875	H-3910CSS.875
3/4" (19.0mm)	H-3920CS.750	H-3910CS.750	H-3920CSS.750	H-3910CSS.750
5/8" (16.0mm)	H-3920CS.625	H-3910CS.625	H-3920CSS.625	H-3910CSS.625
0.530" (13.2mm)	H-3920CS.530	H-3910CS.530	H-3920CSS.530	H-3910CSS.530
1/2" (12.5mm)	H-3920CS.500	H-3910CS.500	H-3920CSS.500	H-3910CSS.500
7/16" (11.2mm)	H-3920CS.438	H-3910CS.438	H-3920CSS.438	H-3910CSS.438
3/8" (9.5mm)	H-3920CS.375	H-3910CS.375	H-3920CSS.375	H-3910CSS.375
5/16" (8.0mm)	H-3920CS.312	H-3910CS.312	H-3920CSS.312	H-3910CSS.312
0.265" (6.7mm)	H-3920CS.265	H-3910CS.265	H-3920CSS.265	H-3910CSS.265
1/4" (6.3mm)	H-3920CS.250	H-3910CS.250	H-3920CSS.250	H-3910CSS.250
1/8" (3.17mm)	H-3920CS.125	H-3910CS.125	H-3920CSS.125	H-3910CSS.125



**USA Standard
ASTM Test Sieves**

CALIBRATION

8"

203mm

INSPECTION

8"

203mm

STANDARD

8"

203mm

STANDARD

12"

305mm



No. 3-1/2 (5.6mm)	H-3920FS3-1/2	H-3910FS3-1/2	H-3920FSS3-1/2	H-3910FSS3-1/2
No. 4 (4.75mm)	H-3920FS4	H-3910FS4	H-3920FSS4	H-3910FSS4
No. 5 (4.0mm)	H-3920FS5	H-3910FS5	H-3920FSS5	H-3910FSS5
No. 6 (3.35mm)	H-3920FS6	H-3910FS6	H-3920FSS6	H-3910FSS6
No. 7 (2.80mm)	H-3920FS7	H-3910FS7	H-3920FSS7	H-3910FSS7
No. 8 (2.36mm)	H-3920FS8	H-3910FS8	H-3920FSS8	H-3910FSS8
No. 10 (2.00mm)	H-3920FS10	H-3910FS10	H-3920FSS10	H-3910FSS10
No. 12 (1.70mm)	H-3920FS12	H-3910FS12	H-3920FSS12	H-3910FSS12
No. 14 (1.40mm)	H-3920FS14	H-3910FS14	H-3920FSS14	H-3910FSS14
No. 16 (1.18mm)	H-3920FS16	H-3910FS16	H-3920FSS16	H-3910FSS16
No. 18 (1.0mm)	H-3920FS18	H-3910FS18	H-3920FSS18	H-3910FSS18
No. 20 (850µm)	H-3920FS20	H-3910FS20	H-3920FSS20	H-3910FSS20
No. 25 (710µm)	H-3920FS25	H-3910FS25	H-3920FSS25	H-3910FSS25
No. 30 (600µm)	H-3920FS30	H-3910FS30	H-3920FSS30	H-3910FSS30
No. 35 (500µm)	H-3920FS35	H-3910FS35	H-3920FSS35	H-3910FSS35
No. 40 (425µm)	H-3920FS40	H-3910FS40	H-3920FSS40	H-3910FSS40
No. 45 (355µm)	H-3920FS45	H-3910FS45	H-3920FSS45	H-3910FSS45
No. 50 (300µm)	H-3920FS50	H-3910FS50	H-3920FSS50	H-3910FSS50
No. 60 (250µm)	H-3920FS60	H-3910FS60	H-3920FSS60	H-3910FSS60
No. 70 (212µm)	H-3920FS70	H-3910FS70	H-3920FSS70	H-3910FSS70
No. 80 (180µm)	H-3920FS80	H-3910FS80	H-3920FSS80	H-3910FSS80
No. 100 (150µm)	H-3920FS100	H-3910FS100	H-3920FSS100	H-3910FSS100
No. 120 (125µm)	H-3920FS120	H-3910FS120	H-3920FSS120	H-3910FSS120
No. 140 (106µm)	H-3920FS140	H-3910FS140	H-3920FSS140	H-3910FSS140
No. 170 (90µm)	H-3920FS170	H-3910FS170	H-3920FSS170	H-3910FSS170
No. 200 (75µm)	H-3920FS200	H-3910FS200	H-3920FSS200	H-3910FSS200
No. 230 (63µm)	H-3920FS230	H-3910FS230	H-3920FSS230	H-3910FSS230
No. 270 (53µm)	H-3920FS270	H-3910FS270	H-3920FSS270	H-3910FSS270
No. 325 (45µm)	H-3920FS325	H-3910FS325	H-3920FSS325	H-3910FSS325
No. 400 (38µm)	H-3920FS400	H-3910FS400	H-3920FSS400	H-3910FSS400
No. 450 (32µm)	H-3920FS450	H-3910FS450	H-3920FSS450	H-3910FSS450
No. 500 (25µm)	H-3920FS500	H-3910FS500	H-3920FSS500	H-3910FSS500
No. 635 (20µm)	H-3920FS635	H-3910FS635	H-3920FSS635	H-3910FSS635
No. 850 (10µm)	H-3920FS850	H-3910FS850	-	-
No. 1000 (2µm)	H-3920FS1000	H-3910FS1000	-	-

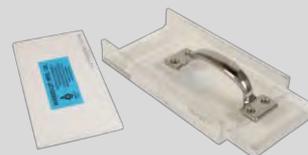


Atterberg Limits



Liquid Limit (Casagrande Method)

To find the moisture content at which Soil begins to behave as a liquid material and begins to flow.



Plastic Limit

To find the moisture content at which Soil begin to behave as a plastic material.



Liquid Limit (Cone Penetration Method)

To find the moisture content at which Soil begins to behave as a liquid material and begins to flow.



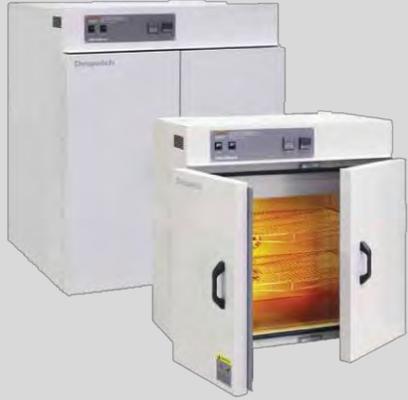
Shrinkage Limit

To find the moisture content at which no further volume change occurs with further reduction in moisture content

Soil Lab



Moisture Determination



PMB Moisture Analyser

Moisture analysers and moisture balances are used to determine moisture content in food, oils, creams, and building materials like cement. They're also ideal for cosmetics, food testing, quality control, agriculture and laboratories. A moisture balance is commonly used to analyse and determine how moisture is gained, lost, and stored over time.

	Model	Capacity	Readability	Pan Size
	PMB 53	50g	0.001g / 0.01%	100mm ø
	PMB 163	160g	0.001g / 0.01%	100mm ø
	PMB 202	200g	0.01g / 0.05%	100mm ø

PMB Moisture Analyser



Multiple Heat Settings



Fast Heating



Clear Results



Accuracy Assured



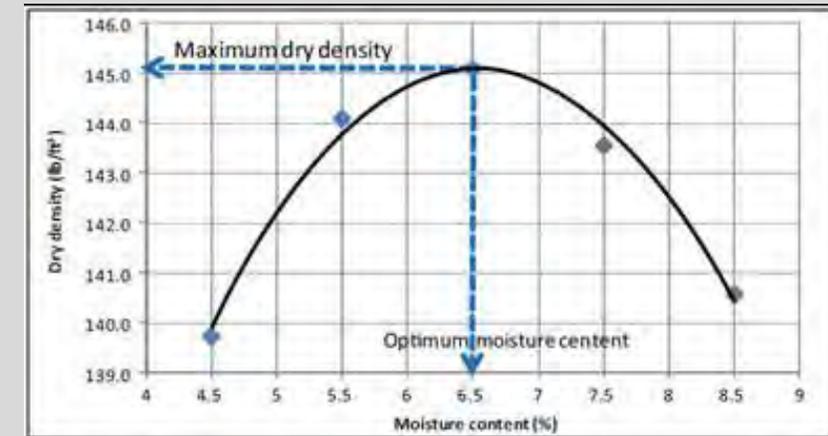
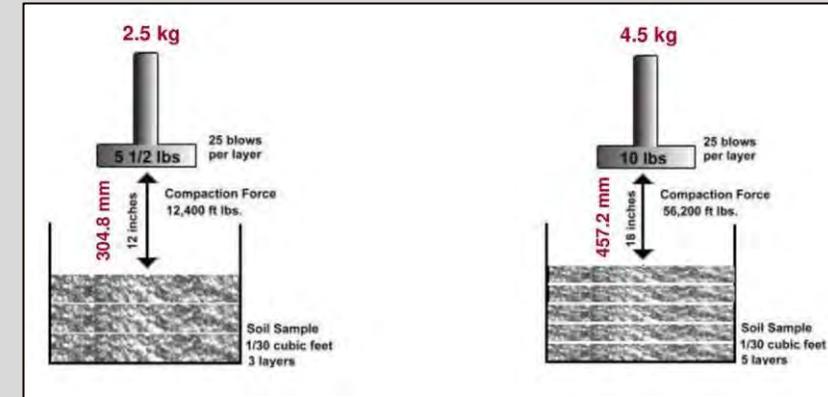
Auto Start



Easy To Use

Proctor Compaction Test

	Standard proctor ASTM 698			Modified proctor ASTM 1557		
	Method A	Method B	Method C	Method A	Method B	Method C
Material	$\leq 20\%$ Retained On No. 4 Sieve	$> 20\%$ Retained On No. 4 Sieve $\leq 20\%$ Retained On $\frac{3}{8}$ " Sieve	$> 20\%$ Retained On $\frac{3}{8}$ " Sieve $< 30\%$ Retained On $\frac{3}{4}$ " Sieve	$\leq 20\%$ Retained On No. 4 Sieve	$> 20\%$ Retained On No. 4 Sieve $\leq 20\%$ Retained On $\frac{3}{8}$ " Sieve	$> 20\%$ Retained On $\frac{3}{8}$ " Sieve $< 30\%$ Retained On $\frac{3}{4}$ " Sieve
For test sample, Soil passing	Sieve No. 4	$\frac{3}{8}$ " Sieve	$\frac{3}{4}$ " Sieve	Sieve No. 4	$\frac{3}{8}$ " Sieve	$\frac{3}{4}$ " Sieve
Mold	4" Dia	4" Dia	6" Dia	4" Dia	4" Dia	6" Dia
No. of layers	3	3	3	5	5	5
Blows per no. of layer	25	25	56	25	25	56





Modified Compaction mold and Rammer



Standard Compaction mold and Rammer

Proctor Compaction Test

The Proctor compaction test is a laboratory method of experimentally determining the optimal moisture content at which a given soil type will become most dense and achieve its maximum dry density.



Automatic Mechanical Compactor

Soil Lab

CBR Test

The California Bearing Ratio (CBR) is a measure of the strength of the subgrade of a road or other paved area, and of the materials used in its construction. The ratio is measured using a standardized penetration test first developed by the California Division of Highways for highway engineering.



Soil Lab



Pneumatic Consolidation



Dead-Weight Consolidation

Consolidation



To determine the settlement characteristics of soil.

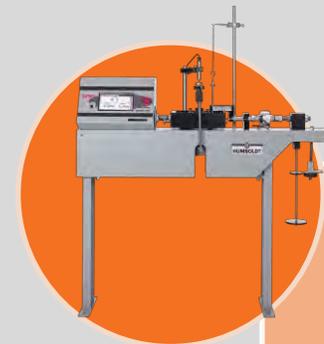
Direct Shear



To measure the shear strength properties of soil.



Pneumatic Direct/Residual Shear Apparatus



Dead-Weight Direct/Residual Shear Apparatus



Dead weight consolidation	
Dead weight consolidation frame-front load	HM-1100A
Weight set, 16 TSF or Weight set, 64kg	HM-1120 † or HM-1123 †
Fixed ring consolidation cell	HM-1220.XX*
Dial gauge, 0.5" X .0001" CC or (12 x 0.002mm) CC	H-4471CC or H-4465.12CC

Data acquisition setup for Dead-weight consolidation using digital indicator and Logger	
Dead weight consolidation frame	HM-1100A
Weight set, 16 TSF Weight set, 64 kg	HM-1120 or HM-1123
Fixed ring consolidation cell	HM-1220.XX*
Digital indicator 1" x .0001" (25 x 0.002 mm)	HM-4471.10
Digital Indicator Cable, 6 ft.	HM-4470C
Humboldt Logger 4 channel digital data acquisition	HM-5330.3F
NEXT consolidation module	HM-5100SW

Data acquisition setup for Dead-weight consolidation using analog transducer and Logger	
HM-1100A	Dead weight consolidation frame
HM-1120 † or HM-1123 †	Weight set, 16 TSF Weight set, 64 kg
HM-1220.XX*	Fixed ring consolidation cell
HM-2310.04	Strain transducer 0.4" (10mm)
HM-2310BR	Strain transducer bracket
HM-5320.3F	Humboldt Logger 4 channel analog data acquisition
HM-5100SW	NEXT consolidation module



Description	Part #
ConMatic IPC	HM-5470.3F
Required Components, Order Separately	
Fixed ring consolidation cell	HM-1220.XX*
The HM-5470.3F ConMatic IPC Includes:	
(1) Pancake load cell 2,000 lbs (10kN) with 0.75" adapter	HM-2300.020CP
(1) Linear strain transducer, 1.0" (25mm)	HM-2310.10
Controller Filter Kit	HM-200926
(1) NEXT consolidation software module	HM-5100SW

Additional Items Required	
PC computer	not supplied
Refrigeration Dryer	HM-4221
Desiccant Dryer, Silica Gel	HM-4222
Filter/Regulator	HM-4223
Consolidation Installation Kit	HM-4168
25' of 0.25" Tubing	HM-4196.25 (sold by the foot)
Controller Filter Kit replacement	HM-200926

Data acquisition setup for Dead-weight consolidation using digital indicator and Logger	
Dead weight consolidation frame	HM-1100A
Weight set, 16 TSF Weight set, 64 kg	HM-1120 or HM-1123
Fixed ring consolidation cell	HM-1220.XX*
Digital indicator 1" x .0001" (25 x 0.002 mm)	HM-4471.10
Digital Indicator Cable, 6 ft.	HM-4470C
Humboldt Logger 4 channel digital data acquisition	HM-5330.3F
NEXT consolidation module	HM-5100SW



Description	Part #
Dead-weight Direct Shear with analog inputs (includes a 2,000 lbf (10kN) capacity load cell; 1" (25.4mm) horizontal strain transducer, and a 0.4" (10.2mm) vertical strain transducer)	HM-5750A.3F
NEXT Direct Shear software module	HM-5700SW
16 TSF or 50 kg weight set	HM-1120 † or HM-1125 †
Shear box assembly	HM-2751.XX(S/D)*
Shear box cutter	HM-2702.XX(S/D)*
Dolly/tamper	HM-2703.XX(S/D)*

Description	Part #
Dead-weight Direct Shear with digital inputs (a 2,200 lbf (10kN) capacity load ring and two 1.0" x 0.0001" (25.40 x 0.002mm) digital indicators)	HM-5750D.3F
NEXT Direct Shear software module	HM-5700SW
16 TSF or 50 kg weight set	HM-1120 † or HM-1125 †
Shear box assembly	HM-2751.XX(S/D)*
Shear box cutter	HM-2702.XX(S/D)*
Dolly/tamper	HM-2703.XX(S/D)*

Description	Part #
Dead-weight Direct Shear with load ring (a 2,200 lbf (10kN) capacity load ring, 1.0" x 0.001" (25.4 x 0.01mm) and 0.5" x 0.0001" (12 x 0.002mm) dial indicator)	HM-5750.3F or HM-5750M.3F
16 TSF or 50 kg weight set	HM-1120 † or HM-1125 †
Shear box assembly	HM-2751.XX(S/D)*
Shear box cutter	HM-2702.XX(S/D)*
Dolly/tamper	HM-2703.XX(S/D)*



Description	Part #
Fully-Automatic Pneumatic Direct Shear (includes (2) 2,000 lbf (10kN) capacity load cells; 1" (25.4mm) horizontal strain transducer, and a 0.4" (10.2mm) vertical strain transducer)	HM-5760.3F
NEXT Direct Shear software module (included with HM-5760)	HM-5700SW
Shear box assembly (specify size)	HM-2751.XX(S/D)
Shear box cutter (specify size)	HM-2702.XX(S/D)
Dolly/tamper (specify size)	HM-2703.XX(S/D)
* XX Requires a sample size designation, see page 125 for choices	
Additional Items Required	
PC computer	not supplied
Refrigeration Dryer	HM-4221
Desiccant Dryer, Silica Gel	HM-4222
Filter/Regulator	HM-4223
Direct Shear/Consolidation Installation Kit	HM-4168

Description	Part #
Pneumatic Direct Shear with analog inputs (includes a 2,000 lbf (10kN) capacity load cell; 1" (25.4mm) horizontal strain transducer, and a 0.4" (10.2mm) vertical strain transducer)	HM-5755.3F
NEXT Direct Shear software module	HM-5700SW
Shear box assembly (specify size)	HM-2751.XX(S/D)*
Shear box cutter (specify size)	HM-2702.XX(S/D)*
Dolly/tamper (specify size)	HM-2703.XX(S/D)*
Additional Items Required	
PC Computer	not supplied
Refrigeration Dryer	HM-4221
Desiccant Dryer, Silica Gel	HM-4222
Filter/Regulator	HM-4223
Direct Shear/Consolidation Installation Kit	HM-4168

Soil Lab



Triaxial Tests

Unconfined
Compression
Strength (UCS) Test

Unconsolidated-
Undrained (UU)
Test

Consolidated-
Undrained (CU) Test

Consolidated-
Drained (CD) Test



The triaxial shear test is the most versatile of all of the methods for testing the shear strength of soil and finding its cohesion (c) and angle of internal friction (ϕ).



Humboldt Triaxial System Setup

FOUR TYPES OF TRIAXIAL SYSTEM SETUP



Auto Hydraulic Pressure Control Triaxial System



Auto Pneumatic Pressure Control Triaxial System



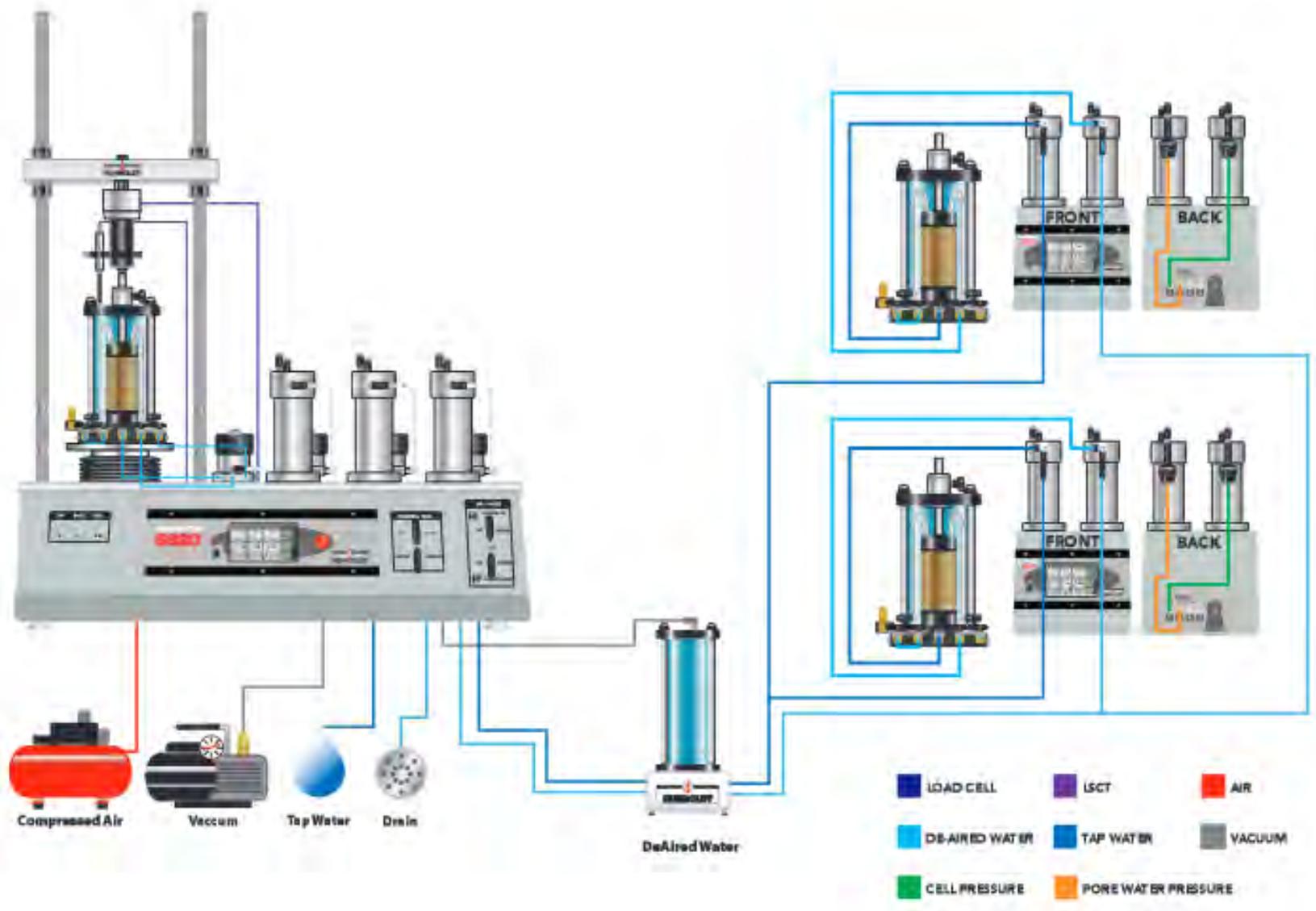
Manual Pneumatic Pressure Control Triaxial System



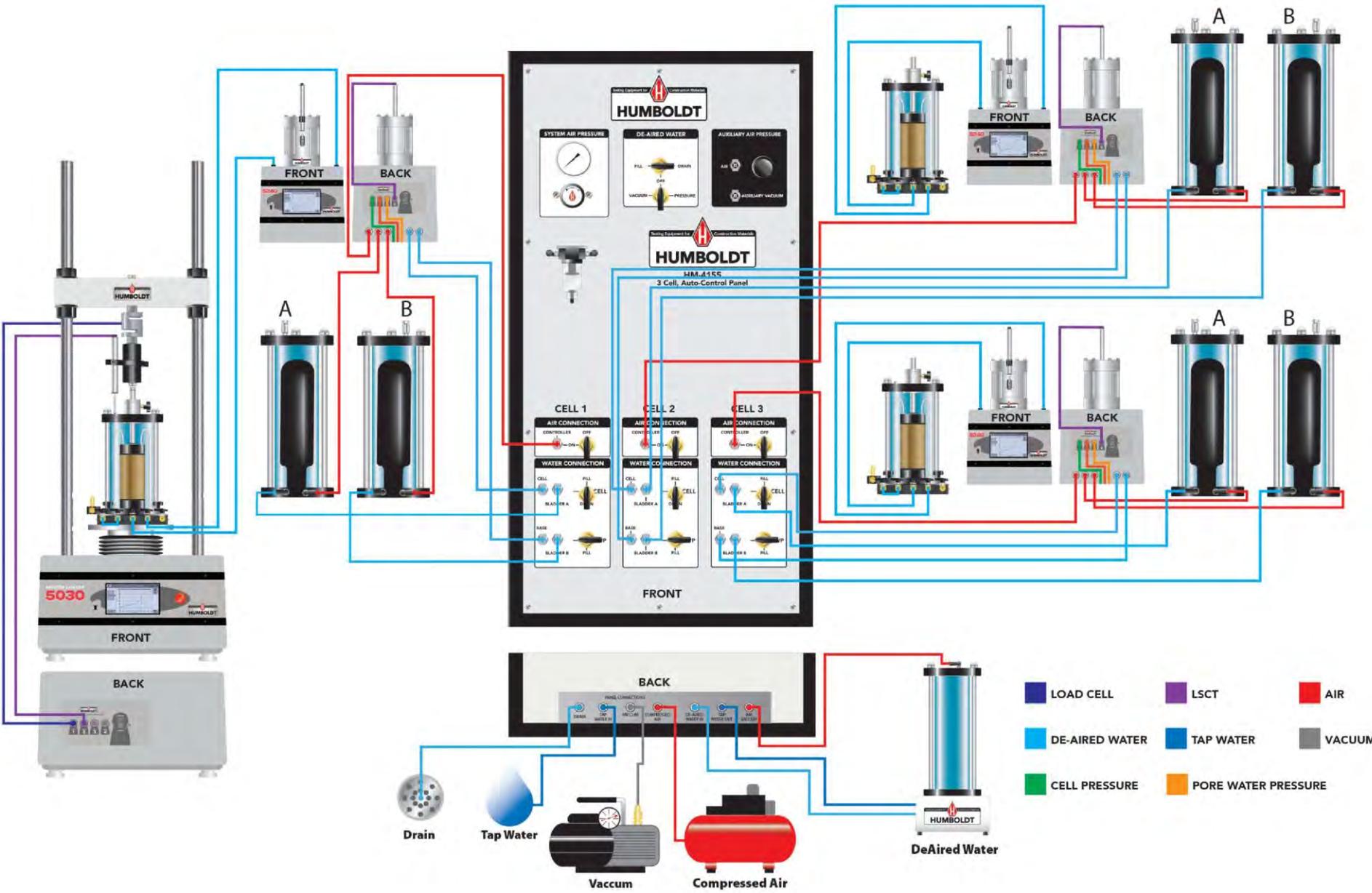
FlexPanel Pressure Control Triaxial System

Pneumatic, Manual Pressure Control Triaxial System Components

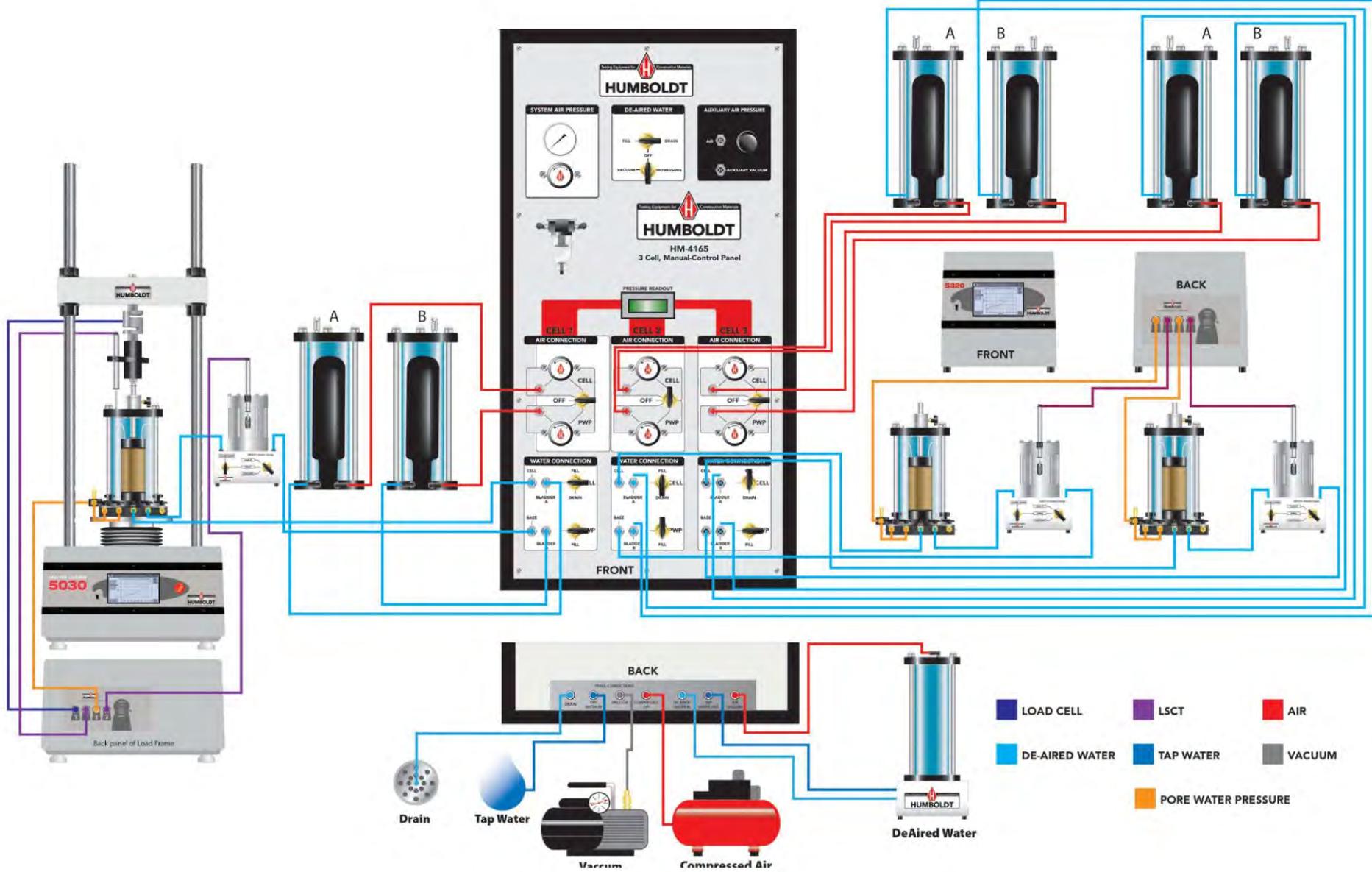




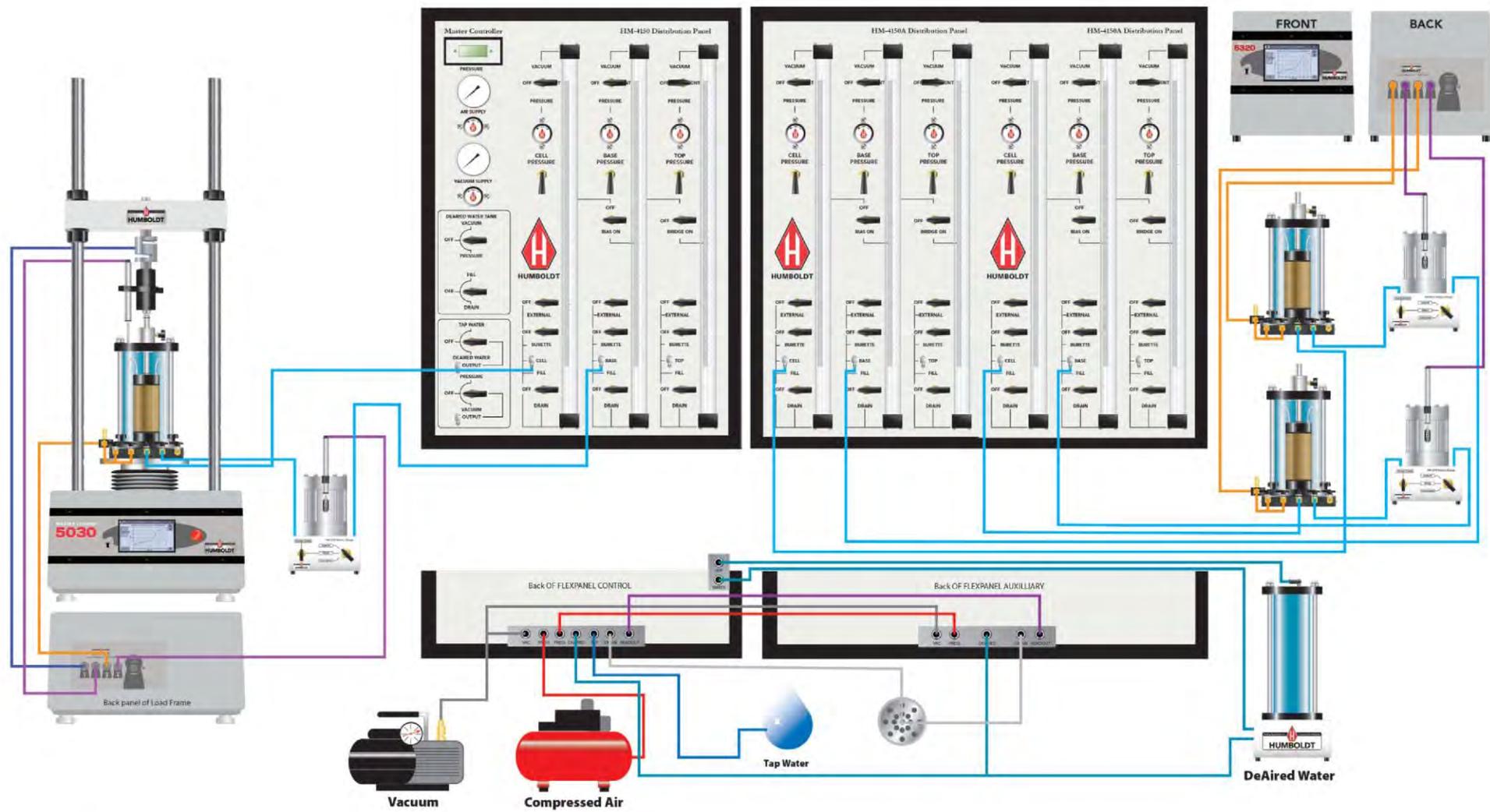
Hydraulic Auto Pressure Control System, 3-Cell Setup



Automatic Pressure Control System, 3-Cell Setup



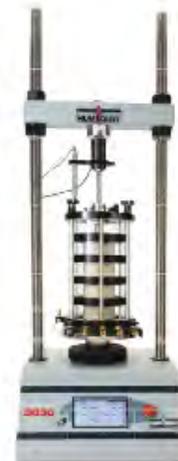
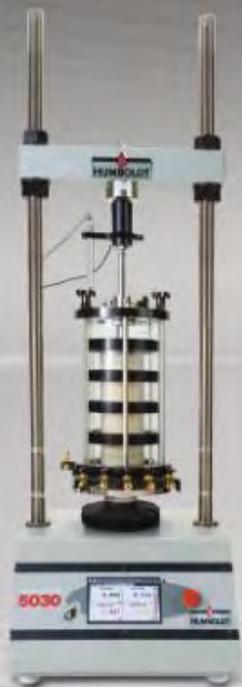
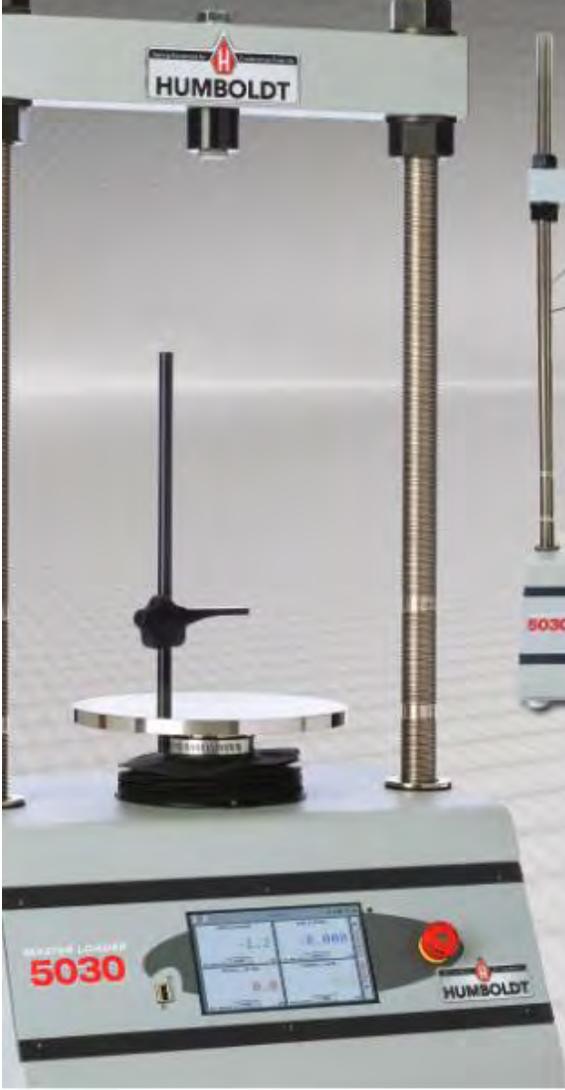
Manual Pressure Control System, 3-Cell Setup



- LOAD CELL
- LSCT
- AIR
- DE-AIRED WATER
- TAP WATER
- VACUUM
- CELL PRESSURE
- BASE PRESSURE
- PORE WATER PRESSURE

FlexPanel Pressure Control System, 3-Cell Setup

ELITE SERIES LOAD FRAMES



HM-5020 TRIAXIAL LOADER

Load capacity	3000 lbf (15kN)
Speed Range	0.00001 – 2.00000 in/min
Testing:	(0.00001 – 50.80000 mm/min)
Fast Approach:	2.25 in/min (57.1 mm/min)
Data channels	4
Platen Size / Travel	10" (254mm) / 4" (101mm)
Data storage	1000 tests and up to 3000 readings per test
Clearance, vertical	27" (686mm)
Clearance, horiz.	11" (286mm)
Voltage	110/220V 50/60Hz 5.0 amps

A small-footprint, triaxial-specific load frame that provides the versatility, precision and durability found throughout Humboldt's Elite Series load frames.

The HM-5020 Triaxial Loader has been specifically designed to handle triaxial testing applications, including: UU, CU and CD triaxial and UC. From educational institutions and consulting firms to high-volume commercial labs and construction projects, the Triaxial Loader can handle any application with ease. Its heavy-duty design and precise stepper-motor control provide a stable platform for years of reliable service allowing the HM-5020 to perform any tests required up to its load capacity of 3000 lbf (15kN).

Like all Elite Series load frames, the HM-5020 is built around Humboldt's integral, 4-channel data logger with touch-screen control, which allows the load frame to be used as a standalone device capable of full test control and data logging. It can also be controlled by a networked computer at any location with access to the network.

Triaxial Loader, 110/220V 50/60 Hz
HM-5020.3F

Shipping wt. 120 lb (54kg)

HM-5030 MASTER LOADER

Load capacity	11000 lbf (50kN)
Speed Range	0.00001 – 2.00000 in/min
Testing:	(0.00001 – 50.80000 mm/min)
Fast Approach:	2.25 in/min (57.1 mm/min)
Data channels	4
Platen Size / Travel	10" (254mm) / 4" (101mm)
Data storage	1016 tests and up to 3000 readings per test
Clearance, vertical	40" (1000mm)
Clearance, horiz.	15" (381mm)
Voltage	110/220V 50/60Hz 5.0 amps

Designed for applications requiring multi-purpose loading systems, such as road construction projects in either mobile or fixed labs, educational institutions and consulting firms, the HM-5030 Master Loader is ideal for just about any application from road construction to high-volume commercial and educational laboratories.

While the HM-5030 has been specifically designed for soil testing labs conducting multiple testing operations including: UU, CU and CD triaxial, UC, CBR and LBR. It is also perfect for running Marshall, Hveem, TSR and SCB asphalt tests as well. Its heavy-duty design and precise stepper-motor control provide a stable platform for years of reliable service allowing the HM-5030 to perform any tests required up to its load capacity of 11000 lbf (50kN).

Like all Elite Series load frames, the HM-5030 is built around Humboldt's integral, 4-channel data logger with touch-screen control, which allows the load frame to be used as a standalone device capable of full test control and data logging. It can also be controlled by a networked computer at any location with access to the network.

Master Loader, 110/220V 50/60 Hz
HM-5030.3F

Shipping wt. 300 lb (136kg)

HM-5040 GRAND LOADER

Load capacity	22000 lbf (100kN)
Speed Range	0.00001 – 0.49999 in/min
Testing:	(0.00001 – 12.674 mm/min)
Fast Approach:	0.5 in/min (12.7 mm/min)
Data channels	4
Platen Size / Travel	10" (254mm) / 4" (101mm)
Data storage	1000 tests and up to 3000 readings per test
Clearance, vertical	44" (1118mm)
Clearance, horiz.	21" (533mm)
Voltage	110/220V 50/60Hz 5.0 amps

The HM-5040 Grand Loader is ideal for just about any application from road construction to high-volume commercial and educational laboratories, which require higher pressure loading capacities up to 22000 lbf (100kN), such as those involving larger sized samples and samples comprised of rock and rock/soil mixtures. Its wider stance and large vertical and horizontal clearances allows it to accommodate much larger sample-size cells. Its heavy-duty design and precise stepper-motor control provide a stable platform for years of reliable service allowing the HM-5040 to perform any tests required up to its load capacity of 22000 lbf (100kN). Like all Elite Series load frames, the HM-5040 is built around Humboldt's integral, 4-channel data logger with touch-screen control, which allows the load frame to be used as a standalone device capable of full test control and data logging. It can also be controlled by a networked computer. HM-5040 includes a storage base with casters.

Grand Loader, 110/220V 50/60 Hz
HM-5040.3F

Shipping wt. 725 lb (329kg)

Typical Tests Setup With HM-5030 Load Frame





MASTER LOADER

Typical tests set up with the HM-5030



Consolidated Drained and Undrained



Unconfined Compression



Unconsolidated Undrained



Semi - Circular Bending

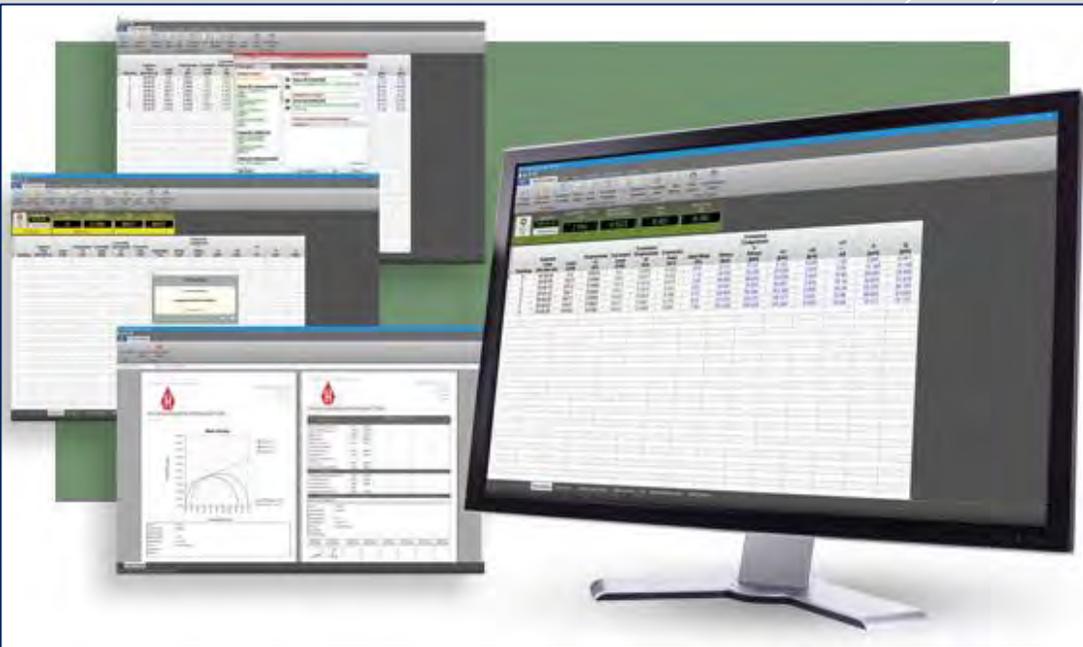


CBR / LBR



Marshall





Elite Series Data Loggers & Humboldt's Next software

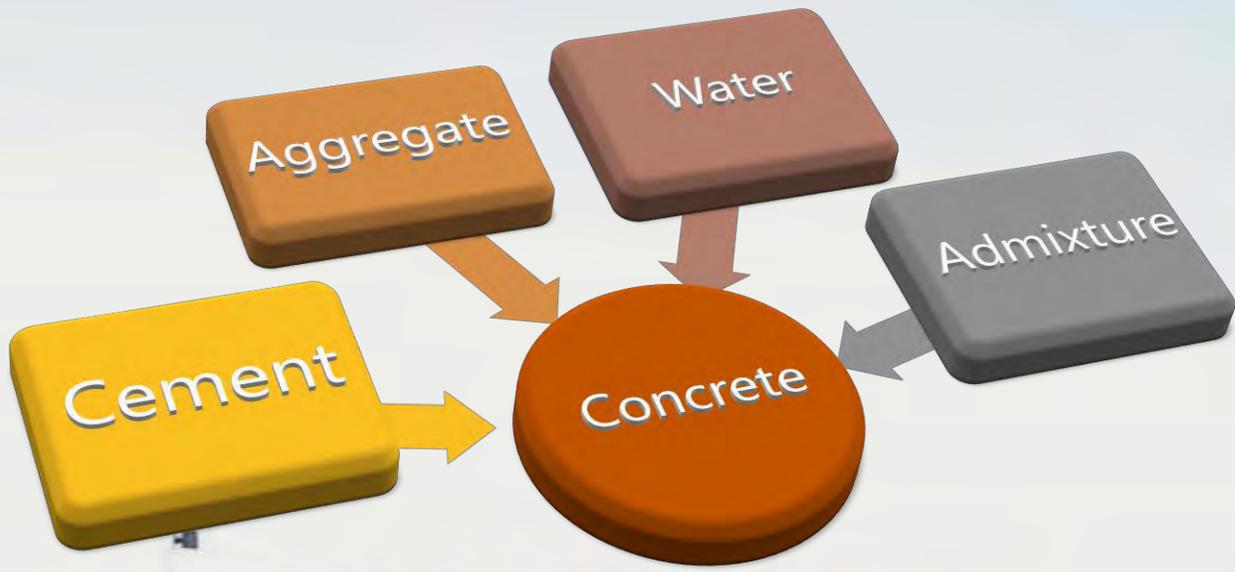
Humboldt's touch-screen controller provides you with full, graphical monitoring of all testing functions in a stand-alone application, while maintaining full computer control when desired.

Humboldt's Next software provides robust data acquisition, calibration and report generation for those wanting to use a computer to monitor tests and collect test data.



Manual Data Recording

Automatic Data Recording





ROCK



AGGREGATE



CEMENT



CONCRETE

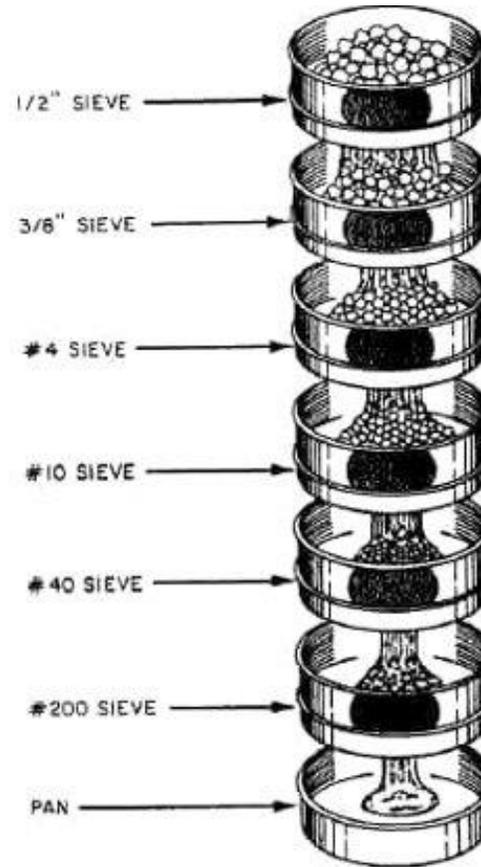
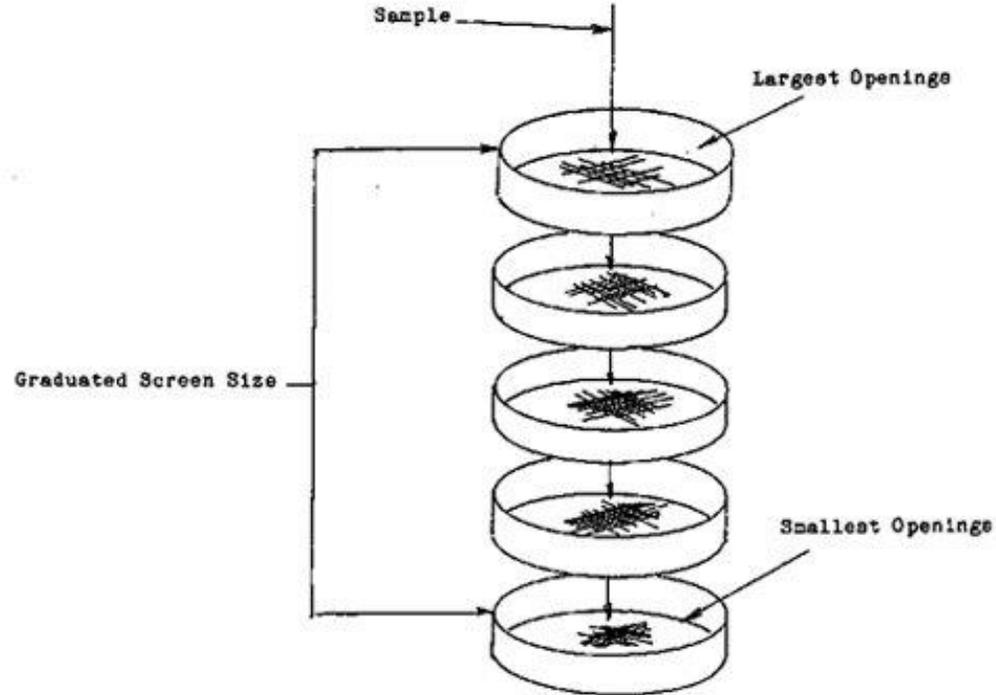


Aggregates

Fine

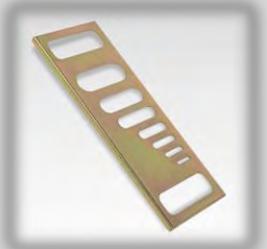
Coarse

SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES





AGREGATE





UTEST
MATERIAL TESTING EQUIPMENT



AGREGATE



UTA-0620
Micro-Deval Apparatus



UTA-0600
Los Angeles Abrasion Machine



UTA-0750
Nordic Abrasion Machine



UTA-0510
Sand Equivalent Shaker with Safety Cover



UTW-1000
Specific Gravity Frame



UTA-0880
Alkali Aggregate Reaction Bath



Aggregates



Specific Gravity Bench Set



The ratio of its mass to the mass of an equal volume of water.



Los Angeles Abrasion Machine



For determination of the aggregates resistance to fragmentation

for the Rapid Determination of Moisture Content in Different Types of Soil.



Aquaprobe.



0-15 % by dry weight

Aggrameter



for rapid determination of moisture content in Sand and other Fine and Coarse aggregates.

0-20 % by dry weight



For Fast Accurate
Measurement of Moisture
Content in Solid Materials.



0-80% (cd00 for Pin type)

Aquameter



Manual Test Hammer



1400 PSI (10 MPa) to approximately 9000 PSI (62 MPa)

The traditional instrument
used for the non-destructive
testing of hardened concrete





UTC-1040
Automatic Grinding Machine



UTC-1010
Universal Cutting Machine



UTR-0552
Manual (Hand Operated) Pressure System for Lateral
Pressure in Hoek Triaxial Cell



UTR-0550 Automatic Pressure System for Lateral
Pressure in Hoek Triaxial Cell





UTCM-6431
15/250 kN Automatic Cement
Compression Testing Machine
with Safety Cabinet



UTCM-0048/E
Automatic Vicat Apparatus
(VICAMATIC-2) EN



UTCM-0085
Automatic Programmable
Mortar Mixer



UTCM-0038
Length Comparator with Heidenhain
Length Measuring Sensor



UTCM-0063/A
Motorized Cement Flow Table / ASTM



UTCM-0090 Jolting Table

Automatic Cement Compression Testing Machine



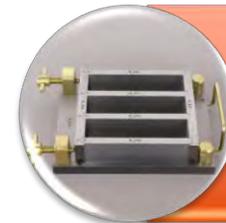
The Utest Automatic Compression and Flexure Testing Machines have been designed for reliable and consistent testing of mortar samples.



Flexure Jig Assembly to test 40x40x160 mm Mortar Prisms, ASTM



Compression Jig Assembly to test 50 mm (2") Mortar Cubes, ASTM



Three Gang Mould 40x40x160 mm, Steel, ASTM



Three Gang Cube Mould 50x50x50 mm, Steel, ASTM



UTCM-0020 High Pressure Cement Autoclave



UTCM-0014 Le Chatelier Soundness Kit



UTCM-0666 Air Entrainment Meter for Mortar



UTCM-0700E Flow Cone Apparatus



UTCM-0930 Vibrating Machine for 70.7 mm Cube Moulds, BS



UTCM-0016 Le Chatelier Water Bath



UTCM-0755 Mud Balance



UTCM-0750 Marsh Funnel Viscometer



Blaine Air Permeability Apparatus



Determines the fineness of Portland cement in terms of specific surface area expressed as the total surface area in square centimeters per gram of mortar or cement.

Vicat Apparatus



To determine the standard consistency of a cement paste, as well as its initial and final setting time.



Automatic Blaine Air Permeability Apparatus



Controlled on the touch screen

Automatic control of the movement of fluid until the upper line

Automatic measurement of air flow time & temperature

UTCM-0280 Automatic Blaine Air Permeability Apparatus



Concrete



Slump Test Set

Measures the consistency of fresh concrete before it sets & to check the workability of freshly made concrete, and therefore the ease with which concrete flows.



Concrete Air Meter

Measures the level of air content in fresh concrete significantly influences its strength, workability, and resistance to freeze-thaw cycles.



Vebe Consistometer

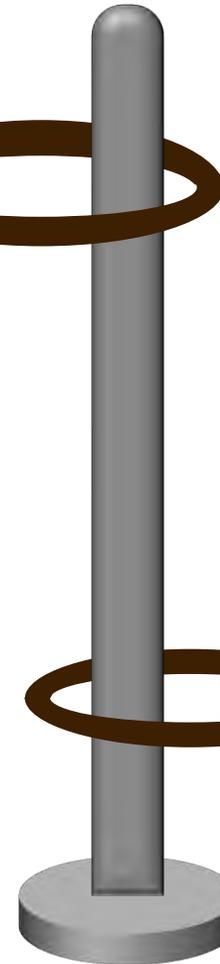
Used to determine the consistency of fresh concrete by subjecting the concrete specimen to vibration after removal of the slump cone.



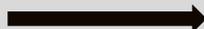
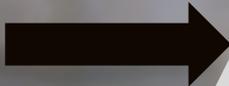
Econ-o-Cap
Capping Pad Sets



Cylinder Capping Kit



Concrete Mix



Compression Machines

Used to measure the compressive strength of a material.



Manual Compression Machine



Automatic Compression Machine



Automatic Compression Machine



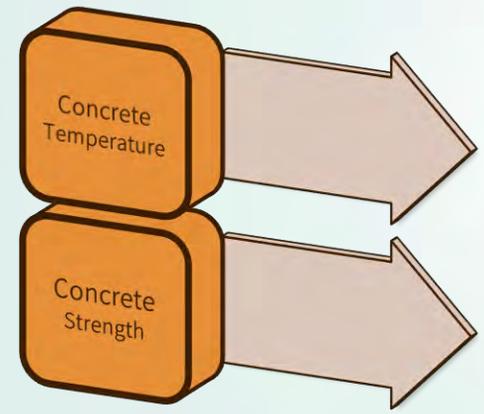
Semi-Automatic Compression Machine

Rebound Hammer

LOWEST PRICE
AVAILABLE



A nondestructive testing apparatus, whereby the rebound of the spring driven mass is measured after its impact with concrete surface.



The World's Leading
Wireless Concrete Sensor
for Temperature and
Strength Monitoring.



Universal Testing Machine



Fully Automatic - PC Controlled

- Designed with different capacities (upon user's request) such as: 300 kN (30 tons) / 600 kN (60 tons) / 1000 kN (100 tons) / 2000 kN (200 tons)



Solutions for Materials Testing

- WEW-1000D Computer Screen Display Hydraulic Universal Testing Machine is suitable to test various metallic & non-metallic materials for tension, compression, bending and shearing strength.
 - It's manual control machines, which aim for clients looking for fast test with test load/force parameter only, the software is not for control purpose, but it can display the test load and test curve in real time.
 - With PC & relative software adopted, the machine can perform more functions - auto-displaying test results & test curves, storing test parameters, printing test report.
 - It is simple, easy to operate and is widely used in works, laboratories and high schools for material properties research and quality control.



The machine complies with ASTM, DIN, ISO standards.



Solutions for Materials Testing

Electro-Hydraulic Servo Universal Testing Machine

WAW-EG Series

- Computer controlled machines
- Simple and easy to operate

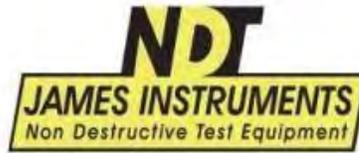
- Are suitable to test **strands** and **various metallic & non-metallic materials** for **tension, compression, bending and shearing strength**

- Are capable of testing the characters of materials on physical and technological properties



-
- Can display, process, record and print the test results
 - Can draw test curves automatically in really time
-

Rebarscope®



Test Well. Build Well.

Applications

- Structural Engineers
- Rebar Mapping
- Rebar Network Analysis
- Utility Mapping



Features & Benefits

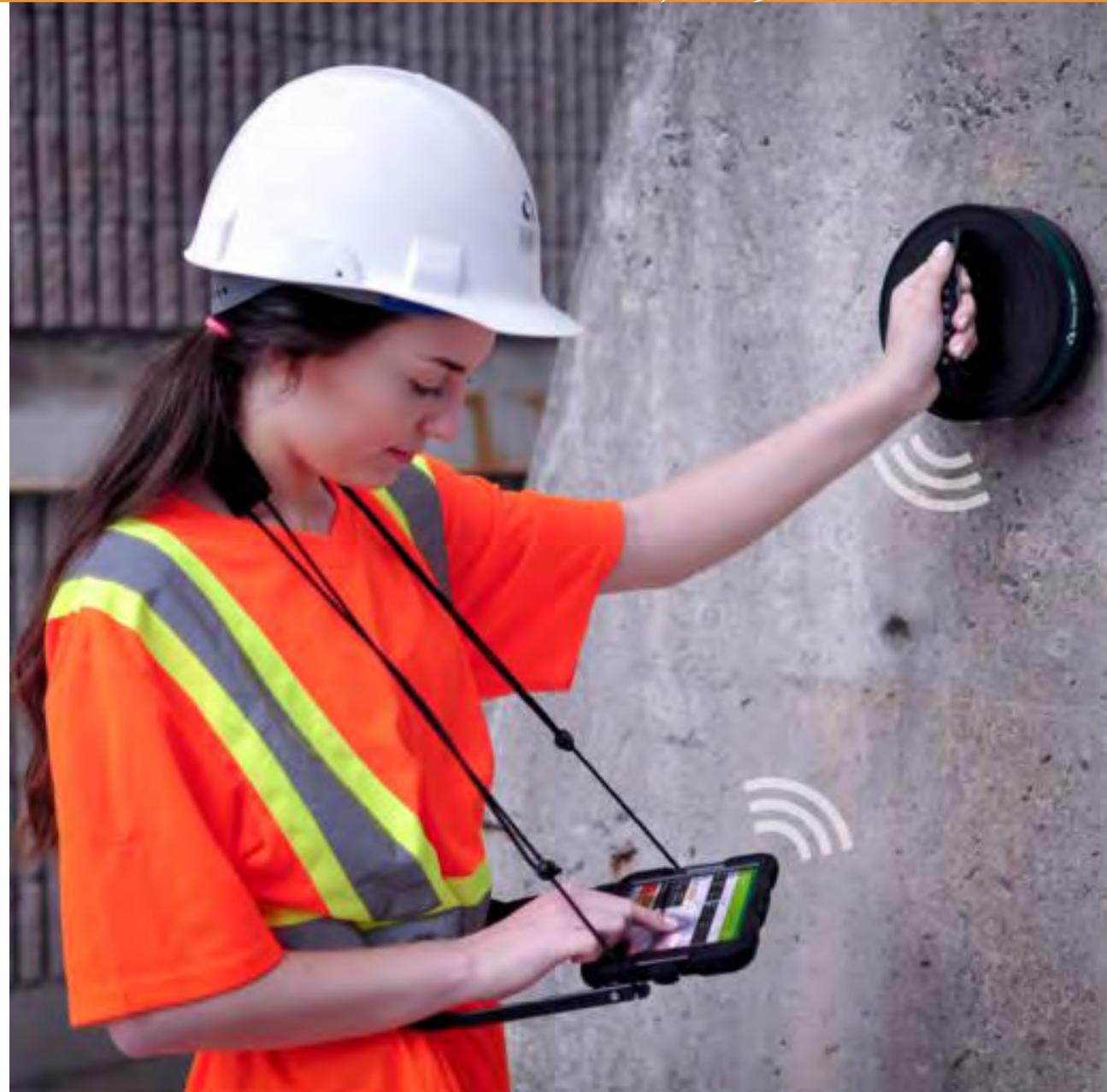
- Eddy current sensor design for greater accuracy with built in temperature compensation, no need to zero the sensor.
- Single sensor for all depth ranges.
- Separate sensor and main instrumentation unit to scan difficult to access areas.
- Locates rebar, post tension cable, conduit, and copper pipe.
- Rugged and splash resistant case. Daylight visible display.
- Optional Scan Cartlogs distance data as well as location of rebar.
- Locates up to 8" (200 mm) deep. Determines bar size up to 4.5" (115 mm) deep.
- Conforms to ACI 318, BS 1881 Part 204, DIN 1045, CP 110, EC 2, SIA 162, DGZFP B2.



iCOR

The most advanced wireless corrosion measurement device for evaluating the health of reinforced concrete structures. iCOR detects corrosion potential, corrosion rate, and in-situ electrical resistivity.

Wireless NDT
Corrosion
Detection



PILETEST

Take a Deeper Look

Product Offering



PET
Pile Echo Tester

CHUM
CSL Monitor



PSI
Parallel
Seismic
Instrument



BIT
Borehole
Inclination
Tester



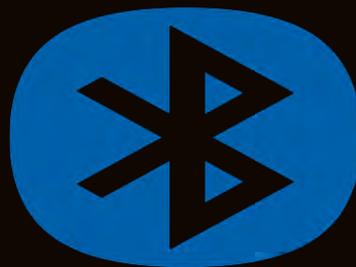
PET (Pile Echo Tester)



The PET (Pile Echo Tester) uses the Pulse-Echo method (PEM) for a quick pile integrity test (PIT test) on a site with a large number of piles.

A pile test starts when the pile top is struck with a lightweight handheld hammer.

The PET's digital accelerometer captures and analyzes the reflected wave to provide information regarding the length and shape of the pile.



Up to 10 m between
transducer and Android
Tablet



Up to USB cable





CHUM (Cross Hole Ultra sonic Monitor)

The CHUM (Cross Hole Ultrasonic Monitor) uses the Crosshole Sonic Logging, CSL testing method to perform high-resolution quality control of deep foundations.



Reliable



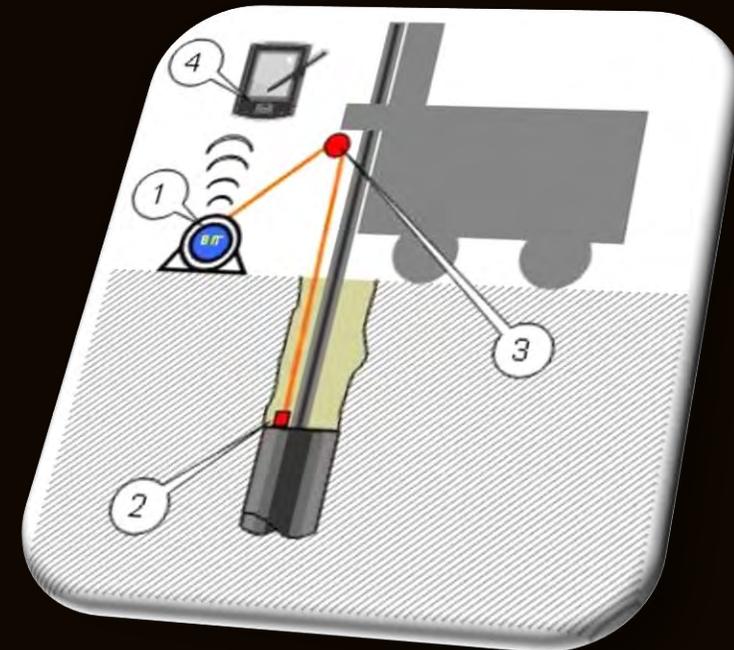
Easy to Use



Top Performance

The system uses an ultrasonic wave sent from a transmitter to a receiver pulled through water-filled access tubes embedded in the concrete. The measured arrival time and energy are strongly dependent on concrete quality.

BIT (Borehole Inclination Tester)



BIT uses the auger/bucket itself as the centralizer. Eliminating the need for a heavy-to-move system.

The BIT enables fast and accurate determination of inclination in both dry and wet boreholes.

Large boreholes and diaphragm walls may be quickly tested several times during drilling to enable real-time corrective action.



INSPECTION EQUIPMENT

PROTECTIVE COATINGS

456 Coating Thickness Gauge



Robust ergonomic design

USB and Bluetooth data output to ElcoMaster™ 2.0

Accurate to 1-3% of range

70+ readings per minute

Key Features

Fast reading rate of more than 70 readings per minute

Dust and water resistant rugged design to IP65



Specialised probes to meet a wide range of applications

Secure probe connection for improved durability

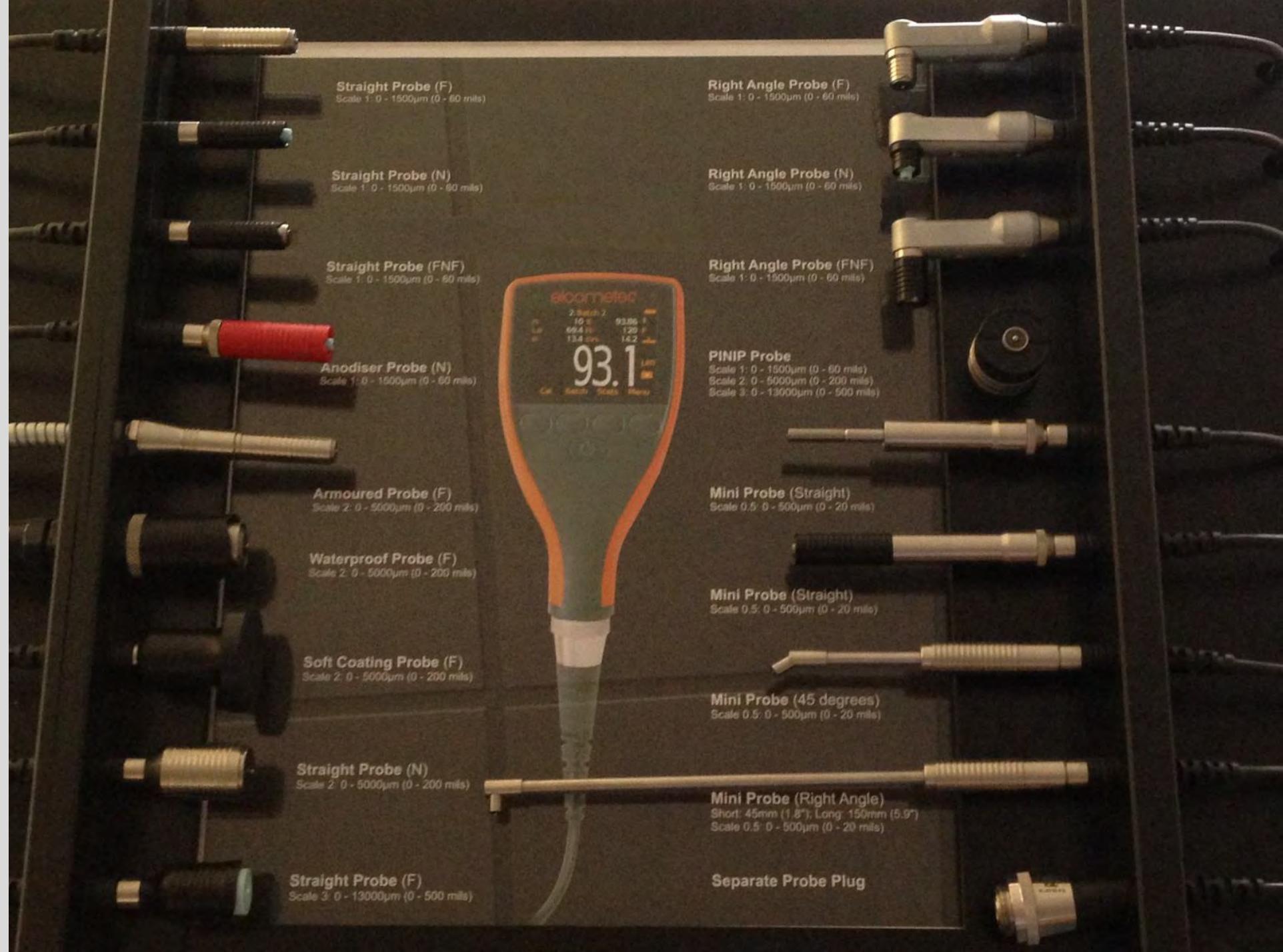


USB and *Bluetooth*® data output to ElcoMaster 2.0 software

Integral and separate gauges to measure coatings up to 30mm thick



Probes For Elcometer 456



Elcometer 500 – Coatings on Concrete

The **Elcometer 500** coating thickness gauge **accurately measures the thickness of coatings on concrete** and other similar substrates* - **non destructively**.

- Accurately measure up to 9mm (355mils) of coatings on concrete or other similar substrates*

- Easy to read, user definable display with automatic screen brightness

- Store up to 100,000 readings in up to 1,000 alpha-numeric batches

- Rugged, intelligent probes with field replaceable tips, measure up to 9mm (355mils)

C1 150 - 2,500µm (6 - 98mils)
C2 750 - 9,000µm (30 - 355mils)



- Measure more than 60 readings per minute in standard mode and over 140 readings per minute in scan mode

- Rugged, dust & waterproof design equivalent to IP54, ideal for almost all environments

- USB & Bluetooth® data output to PC and Android™ or iOS mobile devices

- Ergonomic design, ideal for continuous use

STANDARDS:
ASTM D6132, SSPC-PA 9,
ISO 2808 Method 1U



- C1 Probe { • 150 ~ 2,500 µm
- C2 Probe { • 750 -10,000 µm



**360°
AUTO
ROTATING
SCREEN**



elcometer®



Material Thickness



Surface Profile



Surface Cleanliness



Climate, Dewpoint & Relative Humidity



Wet Film Thickness



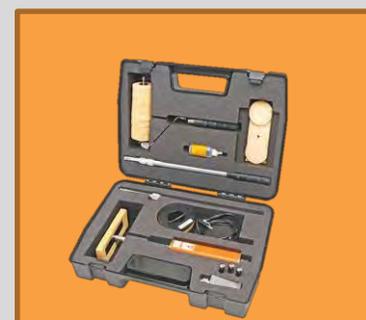
Dry Film Thickness



Adhesion



Pinhole & Porosity



Inspection Kits

Bituminous Materials

Bitumen grade 60/70

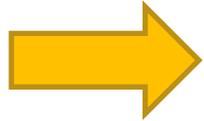
Name	Specification	Test Method
Specific Gravity @ 25/25 C	1.01-1.06	D-70
Penetration @25C	60/70	D-5
Softening Point C	49/56	D-36
Ductility @25 C	100 MIN	D-113
Loss On Heating (WT)%	0.2 MAX	D-6
Drop In Penetration After Heating %	20 MAX	D-6 & D-5
Flash Point C	250MIN	D-92
Solubility In CS2 (WT)%	99.5 MIN	D-4
Spot Test	NEGATIVE	*A.A.S.H.O.T.102

Grade	penetration
S35	30/40
S45	40/50
S55	50/60
S65	60/70
S90	80/100
S200	175/225



Bituminous Materials

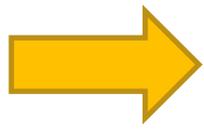
To determine the penetration of semi-solid and solid bituminous materials.



Penetrometers



To determine the softening point of bitumen.



Ring and Ball Apparatus

Bituminous Materials

To Determine the ductility of an asphalt material measured by the distance to which it will elongate before breaking when two ends of a briquet specimen of the material.



Ductility Machine

Bituminous Materials

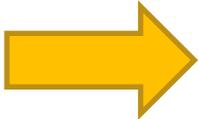
Loss-on-Heat Thin Film Oven



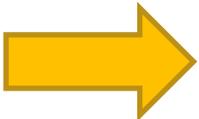
To determine the loss in mass (exclusive of water) of oil and asphaltic compounds when heated.

Bituminous Materials

To determine the flash point and fire point of petroleum products by Cleveland open cup apparatus.



Cleveland Flash and Fire Point Tester



To determine the degree of solubility in trichloroethylene of asphalt materials having little or no mineral matter.

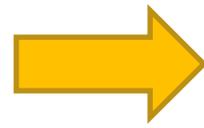
Solubility of Bituminous Materials Test Set





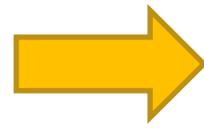
Asphalt Concrete

Marshall Stability Test



To determine the Marshall Stability and Flow Values

Asphalt Extraction Test



Used for quantitative determinations of bitumen in hot-mixed paving mixtures and pavement samples

Asphalt and concrete coring is a process where representative samples from an existing pavement, slab or structure is extracted for analysis.





Pavement

Non-Nuclear Asphalt Density Gauge



The PQI 380 conforms to ASTM D7113 and AASHTO T 343-12.

- Non-Nuclear technology
- Asphalt density readings in 3 seconds
- Full color VGA display
- Customizable mix entries
- Download data files from the PQI 380 via USB drive
- Rugged, lightweight, aluminum shell



PaveScan™ - Density Meter

The First Continuous Asphalt Density Measurement System
AASHTO PP 98-19

Continuous Full Coverage (CFC) GPR System

Provides on-site dielectric values of newly laid and compacted asphalt

Provides continuous full coverage density profile and asphalt uniformity

Provides compaction information in real-time, on-site using a 2D map

Provides coring locations

Allow input of core information for calibration and calculation of %compaction, %void content, and density

Nuclear Density Gauge

To measure the
Moisture
Content and
Density.



Direct Transmission
Method
Up to 8 inches



Backscatter
method
the top 3.5" (90mm)



Backscatter
method
the top 3.5" (90mm)

Moisture



Cesium-137

Density



Americium-241/Be



Electrical Density Gauge(model E)

Humboldt's next generation **Non-Nuclear**, Electrical Density Gauge, Model E (EDGe) is used for determining the density and moisture content of aggregate, soil aggregate compacted type I or II base, or native soil materials that are suitable for shallow foundations, such as secondary roads or base aggregate that is compacted in-place prior to the asphalt or concrete placement at the final grade.



-  Complies with AASHTO T399
-  Nuclear-free device
-  Accurate and repeatable results that link directly to Proctor tests of your own material
-  Does not require highly trained or licensed technicians
-  Lightweight and easily transportable

Electrical Density Gauge(model E)

EDGE Starter Kit Includes

1 unit for use in the lab determining Proctor values

1 unit for the field for on-site measurements



EDGE

Producing soil model



EDG Gauge App

The EDGe App is available free from the Microsoft App Store. This app allows you to operate both the Lab and Field units of the EDGe, as well as provides the field unit with the lab Proctor data.

Testing Equipment for Construction Materials

HUMBOLDT



Comparison



- More than 4 min
- Non – nuclear
- Plus additional lab test and preparation



- About 3 min
- Non – nuclear
- Need Soil Model



- About 3 min
- Non – nuclear
- Need Soil Model



- More than 4 min
- Nuclear

Plate Bearing Apparatus

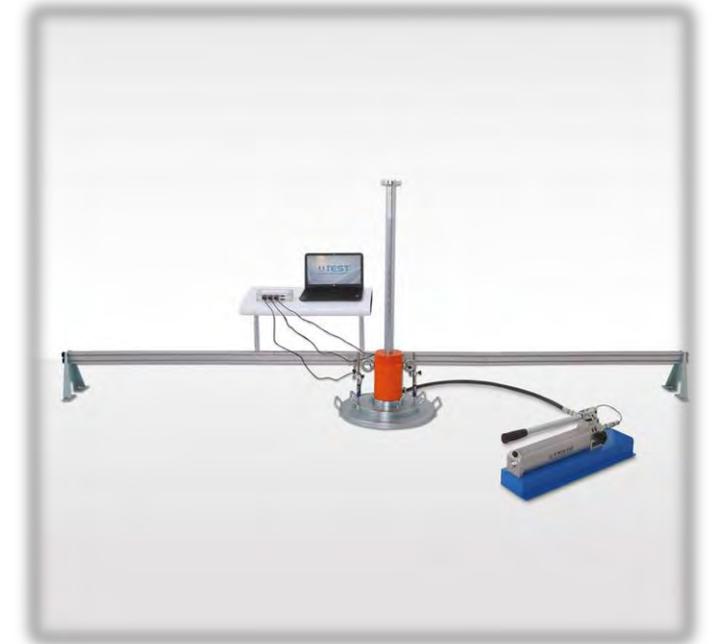
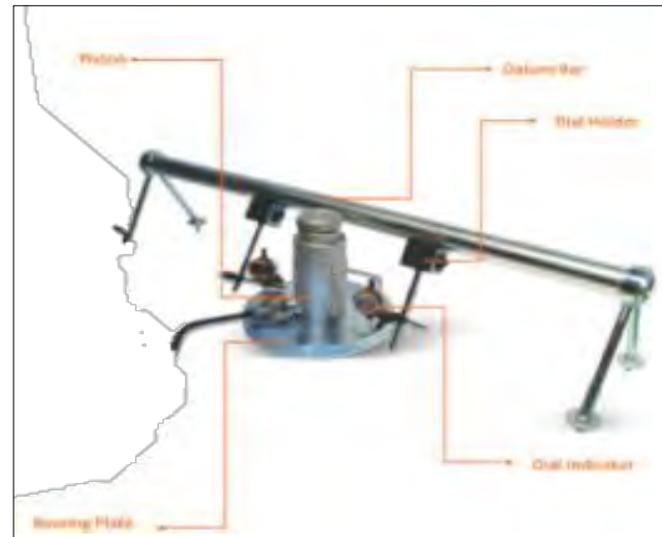
For pressure system

- Hydraulic Jack and Pump
- Pressure Gauge
- 6" safety hose
- Gauge adapter
- 50 ton pressure gauge



Accessories

- 300mm and 450mm diameter plate
- Dial holder
- Dial gauge
- Datum bar



Light Weight Deflectometers

Areas of application



Road and railway construction, earthworks



Quality assurance in canal construction



Compaction control in pipe trenches



Testing of pavement beddings



Testing of foundation backfill



Quality inspection in boreholes



Technical Data



Technical data



Electronic settlement measuring instrument

	LFGpro	LFG4
➤ Settlement measuring range 0,1 bis 2,0 mm ± 0,02 mm	✓	✓
➤ Measuring range $E_{vd} < 225 \text{ MN/m}^2$	✓	✓
➤ Temperature range 0 to 40 °C	✓	✓
➤ Very robust, splash-water proof, connection cable with high-quality LEMO connectors	✓	✓
➤ Graphic display in mm	56 x 73	38 x 68
colourful, lightsensor-controlled and illuminated black/white	✓	✓
➤ Help function	✓	
➤ Fast, efficient 32-bit processor	✓	
➤ Bluetooth, USB, thermal printer interface	✓	✓
➤ GPS		optional
➤ Dimensions in mm	210 x 100 x 31	211 x 100 x 26
➤ Storage capacity, internal in measurement series	1000	500
➤ Power supply:		
high-performance rechargeable lithium-polymer-battery 3,7 V, 6300 mAh	✓	
4 x R6 Batterien		✓
➤ Menu navigation (18 languages available)	✓	✓
Loading Mechanism		
➤ Total weight 15,0 kg	✓	✓
➤ Drop weight 10,0 kg	✓	✓
➤ Max. impact force 7,07 kN	✓	✓
➤ Duration of impact 17,0 ± 1,5 ms	✓	✓
➤ Material: zinc coated/hard-chrome plated steel	✓	✓
➤ Spring element 17 disk springs	✓	✓
Load plate		
➤ Diameter 300 mm, Plate thickness 20,0 mm	✓	✓
➤ Total weight 15,0 kg, Material: zinc coated steel	✓	✓

Dynatest Light Weight Deflectometer

LWD: Design Developments

Load measured by precision load cell (0-15kN)

Plates diameter : 150 & 300 included with the equipment

Optional 200 mm

Weights : 10 kg, 15 kg & 20 kg

Up to three geophones

Rechargeable batteries allows up to 2000 test

Seating lever for center geophone

Dual Plate System (DPS)





Dynatest has developed a range of Pavement Testing Equipment to measure both structural and functional aspects of the pavement systems.



Utility Detection and Mapping



The most robust and intuitive GPR for locating and mapping utilities. Obtain simple quality data with a compact and easy to transport product.



IDS
GeoRadar



Opera Duo

First class underground utility surveys





HIGH DATA QUALITY.



REAL TIME RESULTS



**DUAL FREQUENCY FOR
BETTER PENETRATION
AND DATA RESOLUTION**



**FAST ACQUISITION
(CAMERA GRID).**



**EASIER TARGET
INTERPRETATION**



CLOUD DATA SHARING

GPR

SENSORS & SOFTWARE
from **RADIODETECTION**





Road & Bridges



Concrete Scanning



Utility Locator



Mining & Quarrying



Geotechnical & Environmental



Archaeological Survey



Forensic & Law Enforcement



Custom Solutions

HIGHER RESOLUTION
DEEPER PENETRATION

1000



500



250



100



Ultra 100



1000

500

250

100

Ultra 100

Applications

- Pavement
- Bridge deck
- Concrete assessment

- Archaeology
- Forensics
- Ice/snow

- SUM/SUE
- Underground storage tanks (UST)
- Drainage systems

- Geologic mapping
- Geotechnical applications

- Deep Geologic mapping
- Deep Geotechnical applications

SmartCart



SmartTow



SmartSled



N/A

N/A

SmartChariot



N/A

N/A

SmartHandle



N/A

N/A

N/A

Our Partners

Today, let me introduce you to our esteemed business partners from world wide





After Sales Service



Delivery



Our Installation @ Customer's Side











THANK YOU

