

ELITE SERIES DIRECT SHEAR

Semi-Automatic Direct Shear Apparatus



HM-5755.3F

Semi-Automatic Direct Shear Apparatus

ASTM: D3080; AASHTO: T236, BS:1377:7

The HM-5755 is a semi-automatic pneumatic loading machine, which with its touch-screen monitor provides test control and live test monitoring in either a stand-alone or computer-controlled configuration. With the HM-5755, pneumatic loads are controlled by manual valve controls located on the front panel for easy use. The HM-5755 also provides four (4) integral and independent data acquisition channels, which can be utilized in stand-alone configurations or accessed through a LAN-networked computer using Humboldt's Next Software.

In stand-alone mode, the HM-5755 direct shear machine provides a 7" (178mm) touch-screen controller, giving you finger-tip control of your testing processes, as well as providing real-time, visual views of your data in both tabular and graphic formats. These new waterproof, touch screens provide colorful, at-a-glance monitoring of testing functions without the use of a computer. Operators can see all the data in several formats at the machine while the test is running. Data can then be viewed simultaneously or downloaded later to a computer in the lab, in the next room or at a different location, while also providing report generation capabilities from within Humboldt's NEXT software or our enhanced HM-5700SW Direct Shear software module.

When operated from a networked computer the NEXT software provides robust machine and test control, and report generation. It also allows the

ability to control and monitor multiple machines from a single computer.

The HM-5755 is supplied complete with a 2,000 lbf (10kN) capacity load cell; 1" (25.4mm) horizontal strain transducer, a 0.4" (10.2mm) vertical strain transducer and Humboldt's NEXT software. Shear box assemblies, **Humboldt's NEXT Direct Shear module and related accessories are not included and should be ordered separately.**

Semi-Automated Direct Shear HM-5755.3F

Shipping wt. 200 lb (90.7kg)

NOTES

Counter-balance device for ASTM D3080 compliance. Not available anywhere else. Also available as a retrofit kit. HM-2560A.1

HM-5755.3F Specifications:	
Horiz. movement	1" (25.4mm) maximum
Horiz. shear force	2000 lbf (10kN)
Vertical load	2000 lbf (10kN)
Data Channels	4
Speed Range	0.00001 to 0.49999 in./min. 0.00001 to 12.9999 mm/min.
Voltage	110/220 VAC 50/60HZ
Current	6.5 amps
Dimensions (L x D x H)	30" x 15.5" x 22" (760 x 394 x 558mm)
Pneumatic Direct Shear System Requirements	
AC Supply	110/220 VAC 50/60 Hz 5 Amp
Air Supply	Clean and dry (air filter, water trap), minimum: 100psi (700kps) continuous air supply 4.2CFM (0.12m ³ /min)

* Larger compressor may be required if used with additional equipment or larger-sized labs.

NOTES

This machine does not include HM-5700SW Software, order separately.



Controller Specifications:	
Display (Resistive Touch)	7" (178mm) VGA (480 x 800)
Real-time test data	Graphic and tabulation
Processor	Dual 32-bit ARM
RAM	64MB
Memory, non-volatile	4GB
Analog to digital converter	24 bit
Data acquisition	4 Channels
Logging Rate	effective rate of 320 readings per second
Multi-test storage	1000
Points per test	3000
USB port (front)	export data, import/export calibration data
USB port (back)	provides external power for wireless access point
Ethernet connection	for network connectivity
24-bit differential analog to digital converter	4
Ambient temperature sensor	1
Firmware Update	flash drive

Computer Control

NEXT software and the enhanced Direct Shear module, HM-5700SW, can be used to enhance the operation of the HM-5755 Semi-automated direct-shear machine. This software provides robust machine control, data acquisition and report generation for those using a computer to control consolidation testing operations. However, pneumatic loads are still controlled by the manual valve controls located on the front panel.

In addition, operators have the ability to view and control testing operations from a PC in the lab, in the next room or at a different location, while also providing report generating capabilities using the consolidation test-specific software module.

So, whether you are controlling a single direct-shear machine, controlling multiple machines, or even a complete geotechnical lab, Humboldt's NEXT software, in conjunction with Humboldt's HM-5760 Direct-shear machine, provides a complete solution for the calibration, acquisition, recording and presentation of direct-shear testing data in data tabulation and graphic chart formats.

- Machine control, and data acquisition via a networked computer
- Provides the ability to use Humboldt's Next Software's, advanced test-specific modules
- Real-time graphical chart and numerical display of tests via computer display



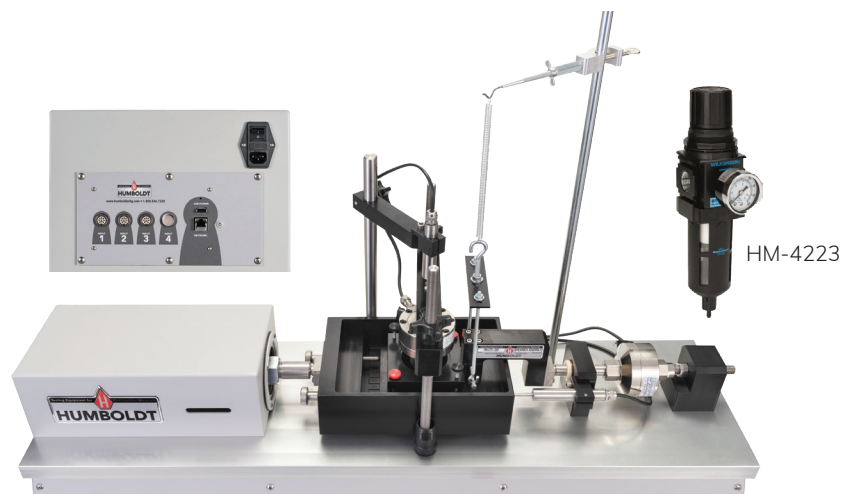
Typical Test Setup for HM-5755

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
Direct Shear/Consolidation Installation Kit	HM-4168
Desiccant Dryer, Silica Gel	HM-4222
Filter/Regulator	HM-4223

* XX Requires a sample size designation, see page 129 for choices and (S/D) refers to square or round sample.

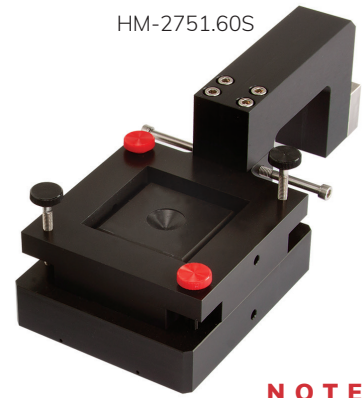


- Effective sampling rate of 320 readings per second
- Stores 1000 tests with up to 3000 points per test.
- Up to 255 individual tests can be run simultaneously from a single PC
- Provides advanced graphing capabilities
- Provides full-unit customization
- Reports can also be exported to Excel or a CSV file, if desired, and, we can provide custom integration/export solutions for LIMS, EQUIS, gINT, etc.

Shear Box Assemblies for HM-5760, HM-5755, HM-5750		
Size	Square	Round
2.0"	HM-2751.20S	HM-2751.20D
2.42"	HM-2751.24S	HM-2751.24D
2.5"	HM-2751.25S	HM-2751.25D
4.0"	HM-2751.40S	HM-2751.40D
50mm	HM-2751.50S	HM-2751.50D
60mm	HM-2751.60S	HM-2751.60D
100mm	HM-2751.100S	HM-2751.100D



HM-2751.25D



HM-2751.60S

NOTES

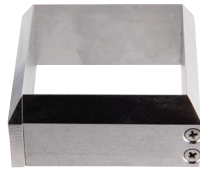
Shearbox assemblies include: sample box, (2) porous plates, (1) loading pad, and (1) grid plate. All shearboxes feature mounting screws for use with the HM-2750 ASTM D3080-compliant counter-balance device.



HM-2703 .25S



HM-2703 .25D



HM-2702.S



HM-2702.25D



HM-2755.25S



HM-1220.25.4



HM-2704.25S



HM-2704.25D

Dolly Tamper		
Size	Square	Round
2"	HM-2703.20S	HM-2703.20D
2.42"	HM-2703.24S	HM-2703.24D
2.5"	HM-2703.25S	HM-2703.25D
4.0"	HM-2703.40S	HM-2703.40D
50mm	HM-2703.50S	HM-2703.50D
60mm	HM-2703.60S	HM-2703.60D
100mm	HM-2703.100S	HM-2703.100D

Cutter		
Size	Square	Round
2"	HM-2702.20S	HM-2702.20D
2.42"	HM-2702.24S	HM-2702.24D
2.5"	HM-2702.25S	HM-2702.25D
4.0"	HM-2702.40S	HM-2702.40D
50mm	HM-2702.50S	HM-2702.50D
60mm	HM-2702.60S	HM-2702.60D
100mm	HM-2702.100S	HM-2702.100D

Calibration Disk		
Size	Square	Round
2"	HM-2755.20S	HM-1220.20.4
2.42"	HM-2755.24S	HM-1220.24.4
2.5"	HM-2755.25S	HM-1220.25.4
4.0"	HM-2755.40S	HM-1220.40.4
50mm	HM-2755.50S	HM-1220.50.4
60mm	HM-2755.60S	HM-1220.60.4
100mm	HM-2755.100S	HM-1220.100.4

Porous Plate		
Size	Square	Round
2"	HM-2704.20S	HM-2704.20D
2.42"	HM-2704.24S	HM-2704.24D
2.5"	HM-2704.25S	HM-2704.25D
4.0"	HM-2704.40S	HM-2704.40D
50mm	HM-2704.50S	HM-2704.50D
60mm	HM-2704.60S	HM-2704.60D
100mm	HM-2704.100S	HM-2704.100D



HM-001076



HM-003274



HM-003275A

Accessory	Model
Replacement Pressure Ball 5/8" 440 Stainless Steel	HM-001076
Screw, Black Head	HM-003274
Screw, Red Head*	HM-003275A

*Red Head Screws are used to hold the shear box together and are made with plastic heads, which will shear off before shear box can be damaged.



HM-4168

Installation and Spare Parts Kit HM-4168

Direct Shear Installation and Spare Parts Kit provides tubing, fasteners and tools to complete an installation of pneumatic direct shear equipment.

Installation and Spare Parts Kit **HM-4168**