

FORNEY TEST MACHINES

LA-270-VFD AUTOMATIC BEAM MACHINE

BEAM TESTER COMPRESSION MACHINE

LOAD CAPACITY	FRAME	CONTROL SYSTEM
30,000lb	Standard (F)	VFD
TEST TYPES	TESTING MATERIALS	DESIGNED & BUILT BY FORNEY
Compression, Flexural	Cubes, Grout Prism, Beams	Exceeds ACI Recommendations

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GET A CONNECTED MACHINE AND SAVE \$1,500

NATIVE TWO-WAY INTEGRATION WITH CMT SOFTWARE

Connected Testing Machines allow technicians to get more done faster with minimal human error through a two-way integration with ForneyVault. Resulting in 99.9%+ fewer manual errors, 66%+ increase in productivity, and 100% unalterable, unquestionable data.

- ▲ “One-touch” test starts and automatic controls
- ▲ Automatic preload calculations, notifications for individual and average low breaks and excessive variance, automatic data transfer, and more
- ▲ Pre-test “Smart Checks” to validate test parameters

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HARDWARE

FRAME

Designed and built by Forney. These machines are ideal for flexural testing of concrete beams and compression testing of small specimens, of low strength concrete, cement, and other building materials. Standard Testing Machines have frames manufactured from solid steel into a one-piece, welded unit that exceeds ACI recommendations. Easily adjustable for testing 6" beams with a span of 12", 18" and 24" in either center point or third point loading and offers an optional accessory that allow testing of 2" cubes.

The load frame is manufactured from rectangular steel tubing welded to a solid steel plate top crosshead and a steel channel lower crosshead. The hydraulic cylinder assembly is mounted to the top crosshead, with force being applied in a downward direction. This design eliminates foreign material build-up around the piston cylinder area.

The LA-0270 can be configured as an add-on to our standard compression testing machines to utilize the hydraulics and readout on the compression machine to create a two-frame tester

that addresses a wide testing range with unprecedented accuracy.

HYDRAULIC

The hydraulic unit is supplied as a complete, fully integrated assembly. The unit is pre-piped and pre-wired. It incorporates hydraulic valves.

The ForneyLink human machine interface (HMI), hydraulic unit, E-Stop, and dump valve are directly connected to the compression unit. Single unit design permits easy installation and provides portability without disassembling of hydraulic or electrical components.

ELECTRICAL

A PC-based system utilizes a variable frequency drive to control the hydraulic pump motor. This maximizes efficiency – only running the pump at speeds necessary to achieve the desired pressure. This energy-efficient approach dramatically reduces heat build-up in the hydraulic system and greatly extends hydraulic component life.

Here are the main components of the system:

- ▲ Variable frequency drive (VFD)
- ▲ Windows-based touchscreen human machine interface (HMI)
- ▲ Pressure transducer that provides pressure feedback
- ▲ E-stop PB
- ▲ Limit switch
- ▲ Solenoid-operated dump valve

SAFETY FEATURES

Several safety features are incorporated to protect both operator and testing machine:

- ▲ Maximum Capacity Protection: A high-pressure safety relief valve protects the hydraulic circuit and load frame from exceeding maximum capacity.
- ▲ Overextension Protection: A piston over-extension limit switch system protects against piston extension beyond maximum travel.

SOFTWARE

EASY AUTOMATIC TESTING

Push one button and the machine performs the complete test, including piston retract. Accurately controls the rate of load at the desired setting, thus no question about meeting ASTM (or other) specifications and ensuring repeatable results. Frees the operator to do other tasks while testing is in process.

DIGITAL CONTROL SYSTEM

Setup of testing protocol, real-time display of test data, and post-test data transfer is accomplished through the ForneyLink touchscreen HMI. The operator can navigate options for:

- ▲ Test Run
- ▲ Test Setup

- ▲ Machine Setup
- ▲ Calibration
- ▲ Reporting and Data Transfer
- ▲ Diagnostics

Provides simultaneous display of force, stress, and rate of load and displays a real-time graph of Load vs. Time, or Stress vs. Strain. Standard functionality includes data collection by the ForneyLink HMI for printing and transfer. Data from optional extensometer and compressometer displacement transducers are also collected by the HMI. This data is captured with the same timestamp as the load data.

CMT SOFTWARE INTEGRATION

Connected testing machines natively integrate with ForneyVault CMT software, improving important processes before and after an automatic test.

Before the test, Connected machines will:

- ▲ Enable positive specimen identification via barcode scan
- ▲ Provide pre-test "Smart Checks" based on preloaded sample and specimen data to validate sample date, ample size and type, and expected strength.
- ▲ Validate specimen geometry.
- ▲ Calculate preload settings based on actual and/or expected strength.

After the test, Connected machines will:

- ▲ Provide a detailed XY plot data for every test performed.
- ▲ Transfer data automatically to LIMS packages, QC systems, or other software.
- ▲ Alert to warn calibration expiration.
- ▲ Notify correction factor use, individual low breaks, and excessive variance.
- ▲ Enable intelligent workflows for detailed reporting and approvals.

REMOTE SUPPORT

With a user-provided Internet connection (either Wi-Fi or Ethernet), all Forney VFD systems are capable of real-time, online support from the Forney Support Team for basic settings and test setup to advanced troubleshooting, fault finding, and software updates.

We offer unlimited Remote Technical Support for all Forney Testing Machines during the two-year warranty period.

For ForneyVault® subscribers, post-warranty remote technical support fees are waived for the life of your subscription.

Please refer any special requirements to a Forney sales representative.

*** Specifications are subject to change without notice.**

ACCESSORIES	
Cylinder Compression (4" Dia x 8" L with Pad Caps) (100mm x 200mm)	TA-0101 Cylinder Top Platen Assembly TM-0095 Bottom Platen TM-2035 Centering Stud
Cylinder Compression (4" Dia x 8" L with Capping Compound or Ground Ends) (100mm x 200mm)	TA-0101 Cylinder Top Platen Assembly TA-0151 Bottom Platen TM-2035 Centering Stud
Cube (2") (50mm)	TAG-0071 Cube (2") Accessory Kit
Flexural Beam (6" x 6" x 18") (150mm x 150mm x 450mm)	included
Grout Prism (3" x 3" x 6") (75mm x 75mm x 150mm)	TA-0101 Cylinder Top Platen Assembly TM-0095 Bottom Platen TA-0172 Spacer, 3" H (2) TM-2035 Centering Stud
MOE (4" diameter) (100mm)	LA-0488-E4-SG Compressometer *Must have compression accessories *Must have -M or -MP machine
MOE & Poisson's Ratio (4" Diameter) (100mm)	LA-0488-P4-SG Compressometer/Extensometer *Must have compression accessories *Must have -MP machine
MOE & Poisson's Ratio (2" Diameter) (50mm)	TA-3542-03 Axial Extensometer 2" TA-3975-01 Diametral 0.030" *Must have compression accessories *Must have -MP machine

FACTORY INSTALLED OPTIONS	
Voltage	110/220VAC Single Phase The full load amperage for standard VFD Control Systems is less than 5A (115VAC single phase voltage). We recommend standard 15A or 20A circuits.
Displacement	Available Upgrade
Optional Test Protocol Capabilities	ASTM C469 MOE (M) ASTM C469 MOE & Poisson's Ratio (MP) ISO 13503-2 Proppant (SW-0010) *Additional accessories required *Inquire about other test types
Capacity Options	none
Frame Options	Second Frame Capability (AB)
Travel Limit Switch	Not Applicable

SPECIFICATIONS	
Load Capacity Range	300lbf - 30,000lbf
Vertical Opening	15.375"
Horizontal Opening	9"
Ram Diameter	2"
Piston Stroke	2"
Platen Hardness	50 HRC (rollers)
Lower Platen Dimension	NA
Upper Platen Dimension	NA
Oil Reservoir Capacity	2 Gallons
Overall Width	27"
Overall Depth	25"
Overall Height	56"
Unit Weight	200lbs

Test Standard Ready	ASTM C78, C293 Flexural Beams in Third or Center Point ASTM E4
Test Standard Capable	ASTM C39, C78, C293, C109, C469, C1019, D7012 AASHTO T 22, T 97, T 106 BS 1610, BS 1881, EN ISO7500-1, EN 12390-3, EN 12390-4