PRODUCT SPECIFICATIONS

FHS 500 Test Machine, Flexural Tester LA-270, TestPilot TA-1253

Forney manufactured test machine, flexural tester and digital control to be compatible with both test machine and flexural tester. Forney brand and model FHS-500B/LA-270-TP 500K Frame with stand, ¾ HP B Rev. A which consists of FHS 500B Test Machine, Flexural Tester LA-270, and TestPilot TA-1253; or an equivalent system.

FHS 500 Test Machine

DESCRIPTION: Compression testing instrument for testing concrete cylinders, beams, cubes, masonry products, rock samples and other products.

CAPACITY: 500,000 lbf compression.

RANGE: 5,000 lbf to 500,000 lbf

DESIGN: To be a single unit consisting of a base section, load frame, and a load digital indicator. The hydraulic control valve is conveniently located at the right front of the load frame, affording easy operator access. This unitized design permits easy installation and provides portability without disassembling hydraulic or electrical pump wiring components. Lexan doors for total containment of test chamber.

COMPRESSION UNIT CONSTRUCTION: The load frame to be fabricated from solid steel into a one-piece, welded unit. The vertical side members to be 2" thick x 12" wide and the top crosshead 5" thick and bottom crosshead 6" thick x 12" wide x 12" deep. The unit to be designed to reduce deflection under full load, with frame rigidity expressed as 35.7×10^6 lbf/in. The hydraulic power piston assembly to be bolted to the bottom of the load frame with force applied in an upward direction.

A. INSIDE DIMENSIONS: The compression area of the load frame to have a vertical daylight opening of 19", measured from the bottom platen to the top crosshead. The total horizontal inside opening to be 12". All dimensions are without accessories installed.

B. OUTSIDE DIMENSIONS: The complete unit including steel base is to measure 60" high x 27 5/8" wide x 19" deep, as viewed looking at the front. The base is to have four pre-drilled holes to accommodate floor mounting.

HYDRAULIC POWER PISTON ASSEMBLY: Testing pressure to be applied by an 8.5" diameter power piston. Stability length of the piston to be 5.875" with a working stroke of 2.50". Piston to be precision turned to an 8 RMS finish. Cylinder to have inside mating surface precision bored to a 16 RMS finish and be manufactured from seamless steel tubing with a wall thickness of more than 1.5". System to be sealed by a non-frictional "O" ring and Teflon back-up ring.

LOWER COMPRESSION PLATEN: The lower compression platen to be 10.25" wide x 16.00" long x 1.00" thick on top of working plate. The platen surface to be hardened to a Rockwell hardness of not less than 55 R_c and be precision ground to maintain planeness within .0005" in any 6.00" of direction. The platen surface to be scribed with a center line and concentric circles including 4 and 6 in. diameters for test specimen centering and be electro-plated with industrial hard chrome for wear and rust resistance. The platen to be directly mounted to the top of the power piston to prevent foreign matter from entering the piston and cylinder assembly.

HYDRAULIC PUMPING SYSTEM: Hydraulic pressure to be supplied to the power piston assembly by a special two-stage pump. The first stage supercharger pump to provide low-pressure, high-volume delivery for rapid advance of the power piston. Once system pressure exceeds 75 PSI, the second stage pump automatically activates to deliver high-pressure throughout the remainder of the testing range to system capacity. Pump to be directly connected to the electric motor shaft and run immersed in oil, rendering it maintenance free.

HYDRAULIC CONTROL SYSTEM: To consist of a single automatic control valve with multiple loading and unloading functions.

A. METERED ADVANCE: Stress loading to be maintained by a patented pressure compensating valve that maintains a precise rate of loading (force per minute) and be adjustable by the operator from 2,000 to 200,000 lb./min. At any time during the test cycle, the rate of loading can be increased or decreased. Loading to be applied continuously and without shock until sample failure.

B. FULL ADVANCE: The rapid traverse lever to be used to position the compression platen at the rate of 3.00" travel per minute. This feature is most often used for pre-loading of the specimen and for rapid advancement of the power piston prior to making specimen contact.

C. HOLD: Pressure advance can be stopped and held to inspect the alignment of the test sample or interrupt the test cycle.

D. RETRACT: This function to release pressure and return the power piston to start.

LOAD READOUT SYSTEM: See Digital Indicator Product Data Sheet. Refer to Forney website Catalog 2013-2014 Digital and Control Systems.

ACCURACY: The load readout system to be calibrated to within +/- 0.5% of the indicated load. Factory and field calibration can be performed in strict accordance to ASTM E-4 and British specifications BS-1610.

COMPLIANCE: Instrument to be in strict compliance with ASTM C-39, E-4; British specifications BS-1881, BS-1610, BS-5328, BS-3693, BS-308, BS-427, BS-970 and ACI Committee 363.

ELECTRICAL SPECIFICATIONS: The hydraulic pump motor to be rated at 110/220 volts, 12.0/6.0 full load amps. Single phase, 50/60 Hz. current required. Standard motor to develop 3/4 horsepower. Other electrics to be available upon request.

ACCESSORY SYSTEM: Accessories to be held in the compression unit by means of a holding stem system. This holding stem to insert into the top crosshead and be held by a quick change locking setscrew, accessible from the front for operator convenience and safety. High tensile aluminum spacers to be used for obtaining proper spacing for specimens of various heights.

SAFETY FEATURES: Safety features to be incorporated to protect both operator and testing instrument:

A. MAXIMUM CAPACITY PROTECTION: A high-pressure safety valve to protect the hydraulic circuit and load frame from exceeding their maximum capacity. This high-pressure relief valve, incorporated in the hydraulic pump, to be preset at the factory. Once maximum system capacity is reached, the high-pressure relief valve to stop the instrument from going beyond the maximum capacity of the load frame.

B. FRAGMENT SAFETY GUARDS: Fragment safety guards are mounted to the front and rear of the compression frame. Lexan to protect the operator from flying test specimen fragments.

UNIT WEIGHT: Complete unit weight without accessories to be approximately 2,000 lbs.

SHIPPING: Instrument to be shipped in an upright position, bolted to a wooden skid and crated. Total shipping weight to vary, depending upon the type and number of accessories ordered.

INSTRUCTION MANUAL: Instrument to have instruction manual detailing installation, operation, maintenance and calibration procedures.

Flexural Tester LA-270

Capable to perform flexural test (modulus of rupture) of concrete beam samples with dimensions 6 x 6 x 21 inches (width, height and length).

Refer to Forney website Catalog 2013-2014 Testing Machines for a listing of Flexural Testers LA-270 specification.

TestPilot TA-1253 Digital and Control Systems

Four channels that allows two machine frames to be operated from one digital. Two load channels and two strain channels for multiple language options and to allow download to a printer or to any PC.

A four-channel system that includes two selectable load channels to capture load data from one or two load frames; and two additional channels to capture data for strain and/or displacement commonly used when collecting data from compressometers or extensometers or other LVDTs.

Refer to Forney website Catalog 2013-2014 Digital and Control Systems for a listing of TestPilot TA-1253 specification.