

TEST MARK COMPRESSION TESTING MACHINE



Version 1.1

Standard Operating Procedure

Andrew Sutherland

Supervisor of Laboratory/Workshop

Mechanical & Electrical

Type of hazards (mechanical, electrical, chemical, biological or radiation)

Test Mark Compression Testing Machine

Room A2

Name and Function of Lab/Project

Test Mark Industries

CM-4000-DIR

Make

Model

A. Introduction

Specifications			
Max. Compression Capacity		400,000 lbs	1,780 kN
Vertical Opening *		18.375 in	467 mm
Horizontal Opening		13.312 in	33.8 mm
Piston Stroke		2.5 in	63.5 mm
Machine Dimensions on Optional Stand	Width	39.875 in	1,013 mm
	Depth	20 in	508 mm
	Height	61.250 in	1,556 mm
Lower Platen, Diameter	Width	12 in	305 mm
	Depth	18 in	475 mm
Spherically seated upper platen, Dia. **		6.5 in	165 mm
Pump Electric		.750 hp	.6 kw
Oil Reservoir Capacity		2 Gallon	7.6 liter
Electrical Requirements		115/230/1/60/50	
Shipping Weight		1,620 lbs	734 kg
Console Dimensions ***	Width	18 in	457 mm
	Depth	18 in	457 mm
	Height	44.25 in	1,124 mm

* Frame opening dimensions are without test platens installed in machine

** Upper Test Platen MA-0101 is supplied standard in all Models

*** Consoles are standard with all C-Model Machines

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B. Health and Safety Considerations

I. Safety devices required (e.g. machine guards, personal protective equipment, etc.)

- ***SAFETY GOGGLES/GLASSES*** must be worn **at all times in the lab**. Prescription glasses can be worn under the safety goggles.
- ***HARD TOE BOOTS/SHOES*** must be worn **at all times in the lab**.

II. General Safety

- **FOOD AND DRINK** are not allowed in any laboratory
- Be aware of the specific hazards associated with each lab exercise.
- Wear appropriate clothing and foot wear (**NO OPEN-TOED SHOES**).
- Familiarize yourself with all emergency safety equipment (eyewash, fire alarm, fire extinguishers, telephone).
- Do not leave hazardous experiment unattended
- **Clean** your work area before leaving the laboratory

FIRE: Immediately **report it to the supervisor or lab demonstrator** or other responsible personal, and then exit the laboratory and building quickly via proper exit route (Make sure you know where the exits are). Use fire extinguishers for bench-top fires or other small fires.

ACCIDENTS AND INJURIES must be reported to the demonstrator or other responsible personal. There are emergency first aid supplies available and all technicians are trained in basic first-aid, however any injury of consequence will be handled by the medical services.

UNSUPERVISED WORK: No student is permitted in the laboratories unless there is a supervisor present.

THE BEST SAFETY PRECAUTIONS include ***ADVANCED PREPARATION*** for each laboratory and a ***CLEAN ORGANIZED WORK SPACE***.

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D. Procedure for Basic Operation:

*The following guidelines are for persons who request the use of the Test Mark Compression Testing Machine. A verbal **request** to departmental technicians must be made to obtain permission to use any testing equipment. If operating any equipment for the first time, a competent certified operator must be present to provide adequate training and guidance.*

1. Motor switched off, carefully center specimen in testing machine. **Figure 1 (B)**
2. Turn Control Knob clockwise to a snug position. Never over tighten. **Figure 1 (D)**
3. Position Valve Control Handle to a "**METERED ADVANCE**" position. **Figure 1 (C)**
4. Switch on pump.
5. If a preload of the specimen is desired, position Valve Control Handle (C) to "**FULL ADVANCE**". Caution is required not to overload or fail the specimen.
6. Watch the gauge/digital, **see Figure 1 (A)**. When the desired preload has been attained, move the Valve Control Handle (C) to the "**METERED POSITION**".
7. To increase the rate of loading, turn Control Knob (D) counter-clockwise. To decrease the rate of loading, turn Control Knob (D) clockwise.
8. To hold pressure at any desired point, position Valve Control Handle (C) to the "**HOLD**" position.
9. To release pressure so that the platen will return after a test has been completed, position Valve Control Handle (C) to the "**RETRACT**" position.
10. For repetitive testing of identical specimens with a gauge machine, Control Knob (D) can be preset with a stop watch, and then locked in position by tightening the thumb screw located beneath the knob. For a 6" diameter specimen, the loading rate should be 565 lbs/sec. to 1413 lbs/sec. or 34,000 lbs/min. to 84,000 lbs/min. For gauge machines a reading of 10,000 lbs. on 10 seconds is a good average and is easily set.

*** Please refer to the DI/DIR Operating Manual for information regarding the digital system (attached at end of document).**

If you ever have any doubts or questions, ASK THE SHOP TECHNICIANS!

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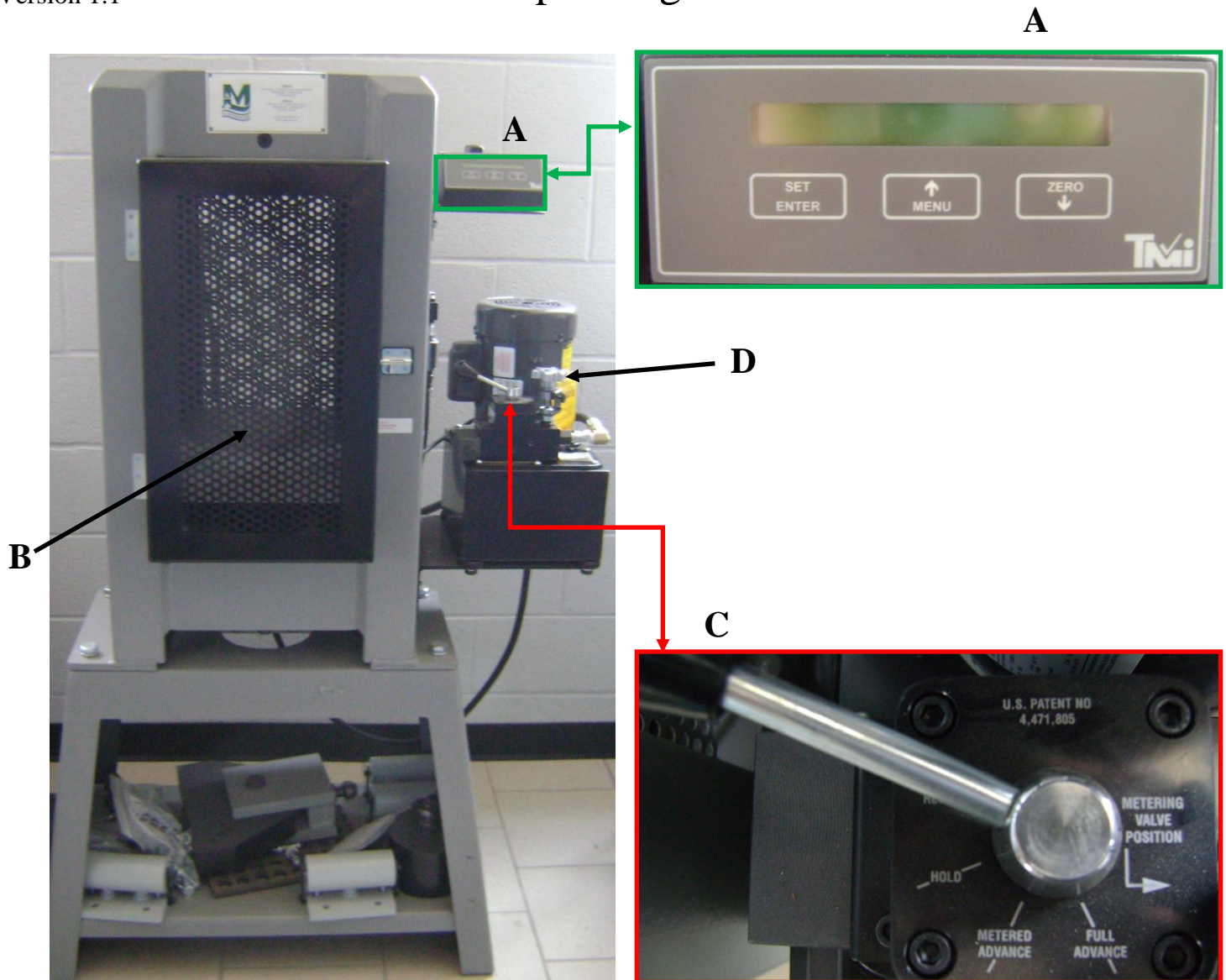


Figure 1. Test Mark Compression Testing Machine

Emergency Contacts:

Andrew Sutherland, Chief Technician, HA-11, 453-5126

Chris Forbes, Technician, HA-11, 452-6114

Ken Knoftel, Technician, HA-11, 452-6114

Campus Security, 453-4830

FIRE/AMBULANCE/SAFETY -Emergency Response, 9-911 Internal (UNB Phones)
911 External (Cell Phone)

Department: Civil Engineering

Room: A2

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