

User Manual

Universal Testing Machines

Mod. AME / Mod. BME



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Introduction

Volumec Srl thanks you for the purchase of this product. This machine was designed to be a reliable tool for mechanical testings, presenting a long maintenance-free service life. Please feel free to contact us at any moment.

This universal testing machine is used for tensile, compressive, flexural and other testings, according to the grips and accessories supplied. Its motion system is based on precision ball screw and a motor/driver set, totally controlled by DynaView Standard/Pro M Software, allowing simple and efficient compliance with many testing standards (ISO, ASTM, DIN etc) of many materials (plastics, metals, rubber etc).

Setup

This machine must be installed on a table or workbench, away from humidity or direct sunlight. It must be installed close to the computer which will control it. It must be connected to a power outlet ranging from 93 to 135Vac or 187 to 250Vac, 47 to 63Hz (universal full-range supply) with minimum rated power 0,3kVA. The serial cable (DB9F connector) must be connected to a PC serial port or a serial adapter.

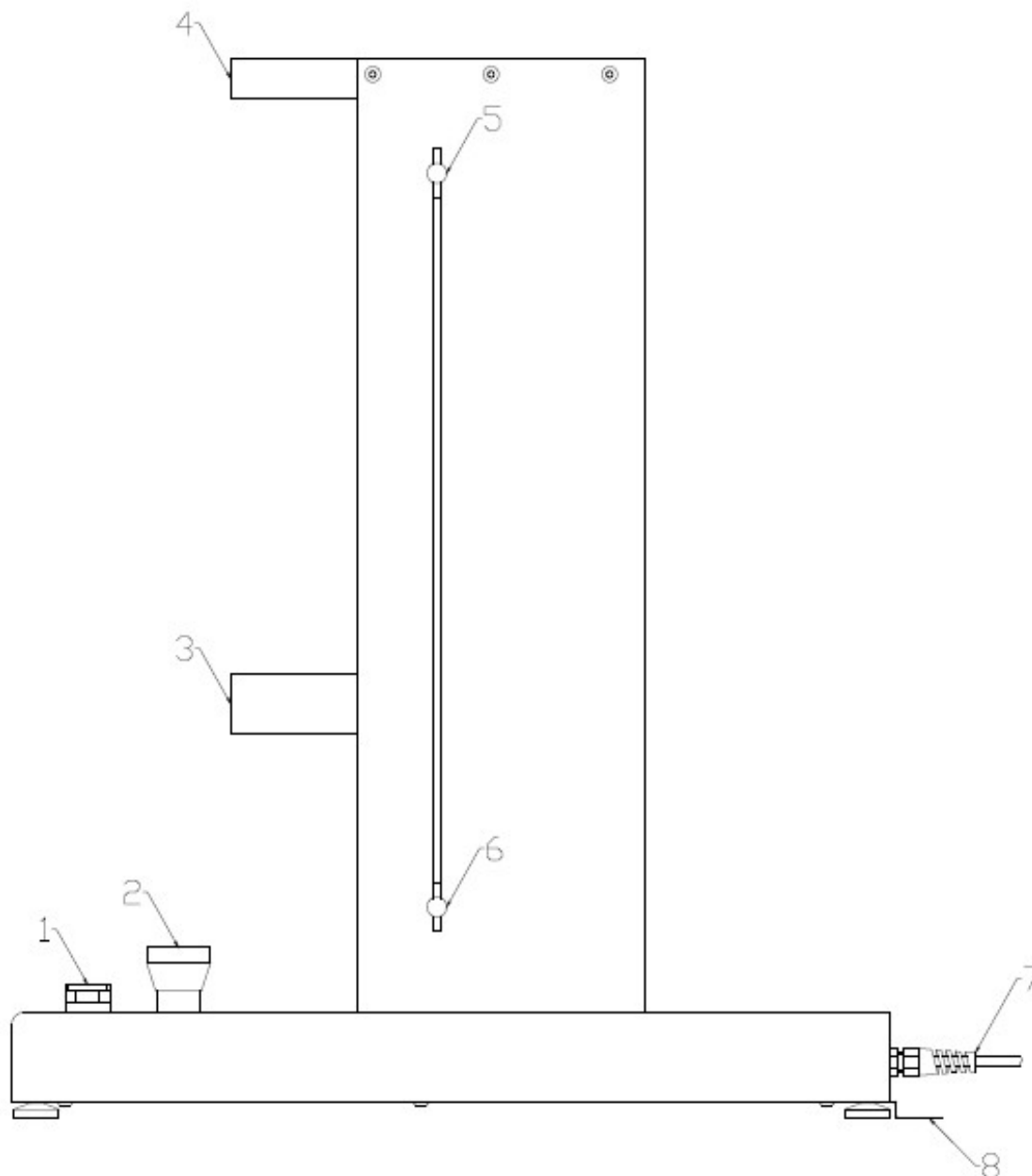
The machine must be fixed with screws to the table through the appropriate plates in the rear part of the machine in such a way as to ensure that it does not move or fall down. When used with a protective guard provided by the manufacturer, the minimum height of the table must be 700mm so that the final height of the guard complies with safety standards.



WARNING: Connection to a power outlet outside the specification may severely damage the machine.

Parts description

Main machine parts are the following:



1 – On/off button: must be pressed to turn on the machine. When pressed a lamp inside the button will light, indicating the machine is ready.

2 – Safety emergency stop button: must be pressed to stop the machine in emergency situations. To restore machine functions turn the button clockwise until it is unlocked.

3 – Crosshead: where load cell and/or grip/accessory is fixed. This part can exert forces equal to or

greater than machine rated capacity (specified in kN) in the upward or downward direction.

4 – Upper head: part where load cell and grip may be optionally fixed.

5/6 – Upper and lower end-of-travels: must be used to limit crosshead movement, e.g. to avoid collision between grips.

7 – Serial cable, power supply cable and guard conduit plug.

8 – Anchor plates.

Maintenance

Maintenance of this product must be performed only by factory trained personnel. Changes to driver settings or motor replacement may damage both of them. If customer is instructed by factory to make any kind of maintenance, power plug must be disconnected from power outlet before that. In case of any maintenance need please get in contact with manufacturer.

The machine ball screw must be periodically lubricated. This lubrication is done by removing the ball screw nut lubrication hole cap and applying lithium-based grease (e.g. blue grease). Reinsert the cap after lubrication. This lubrication must be done every 6 months or in smaller intervals.

Scheduled maintenance

A scheduled maintenance must be done every 3 years. It consists of a disassembly of machine in which all mechanical parts are cleaned and lubricated. Scheduled maintenances increase the service life of mechanical parts, motor and driver.

If machine is exposed to excessive dirt during usage an yearly maintenance is recommended.



WARNING: maintenance of this product can be performed only by factory trained personnel.

Maintenance register

Event description			
☐ Adjustment	☐ Maintenance	☐ Riparazione	☐ Modifiche
Date:		Responsible person:	

Event description			
☐ Adjustment	☐ Maintenance	☐ Riparazione	☐ Modifiche
Date:		Responsible person:	

Event description			
☐ Adjustment	☐ Maintenance	☐ Riparazione	☐ Modifiche
Date:		Responsible person:	

Event description			
☐ Adjustment	☐ Maintenance	☐ Riparazione	☐ Modifiche
Date:		Responsible person:	

This page can be found in the pdf manual for new printing.

Safety warnings

The machine crosshead can exert forces equal to or greater than rated capacity (specified in kN) in the upward or downward direction.

According to machine model this force may be considerably higher than rated capacity.

The crosshead may cause hazards to user, who can have his hand or other body part trapped by machine, resulting in serious physical hazards or death.

Every machine has an emergency stop button which will immediately cease any crosshead movement. Every user must be trained to properly use the emergency stop button prior to machine usage.



DANGER: accidents with machine can result in serious physical hazards or death.

Machine control

This universal testing machine is totally controlled by DynaView Standard/Pro M software. This software features powerful motion control resources which allow not only tensile, bending, compressive and flexural testings but also cyclic and creep testings, complying with a wide range of testing standards.

Detailed information about software commands are found in DynaView Reference Manual, which is installed in DynaView folder in pdf format and can be reached at Start>Programs>DynaView menu.

Extensometer mod. AEX

The model AEX extensometer can measure elongation directly on the specimen. This product is designed for usage with materials which present large strain under tension.

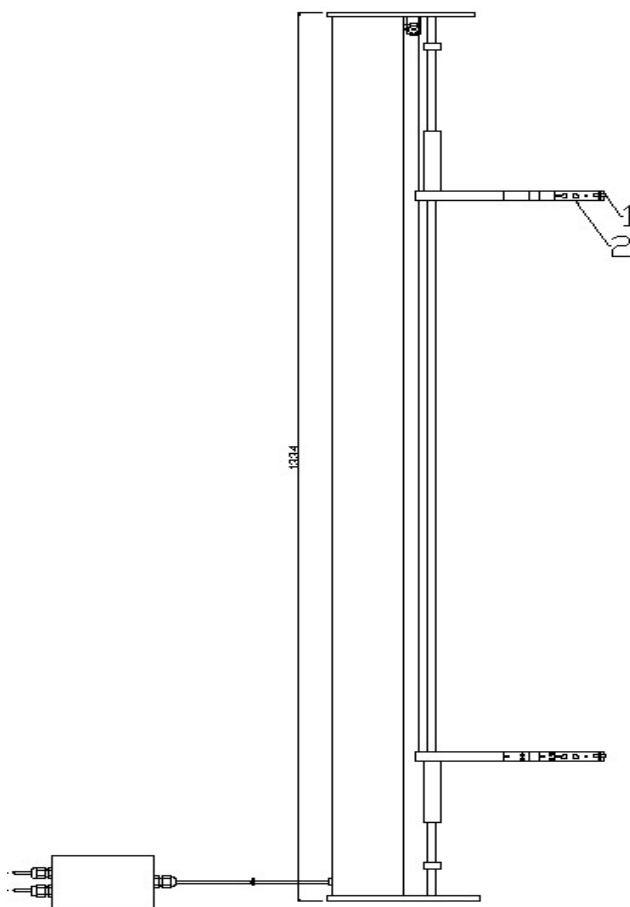
It must be installed close to the machine in such a way that the center of the extensometer grips coincides with the center of the machine grips.

The closing force of the extensometer grips can be adjusted by tightening or loosening the appropriate spring regulators.

If the steel wire that transmits the displacement of the grip to the sensor breaks its replacement can be performed by the user by loosening the two screws that secure it. The manufacturer of the machine provides the wires with terminals as spare parts. After maintenance move each of the grips up to the position of maximum opening, after which it will be ready for use.

1 - Grip

2 - Gripping force regulator

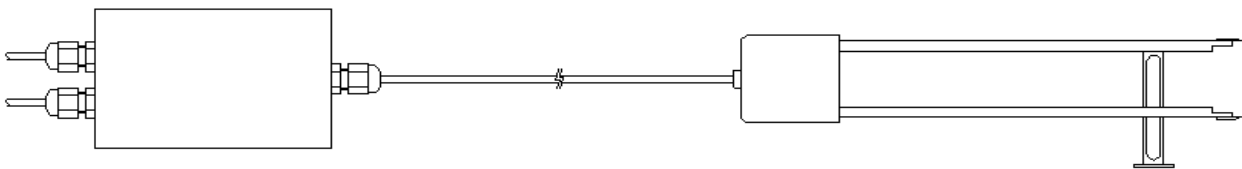


Extensometer mod. BEX

Model BEX extensometer can measure elongation directly on the specimen. This product is designed for usage with materials which present small strain under tension.

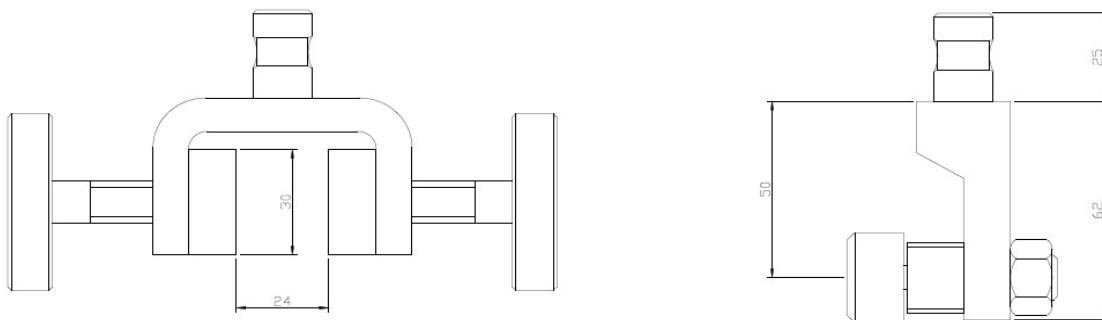
It must be attached directly to the specimen before each test with rubber bands. Usually the sample must be removed before break. The control software of the machine can reduce the speed test and set up alerts to user to remove the extensometer, for more information please check software manual.

The blades that attach to the specimen can wear out with use. The manufacturer of the machine can supply new blades as spare parts.



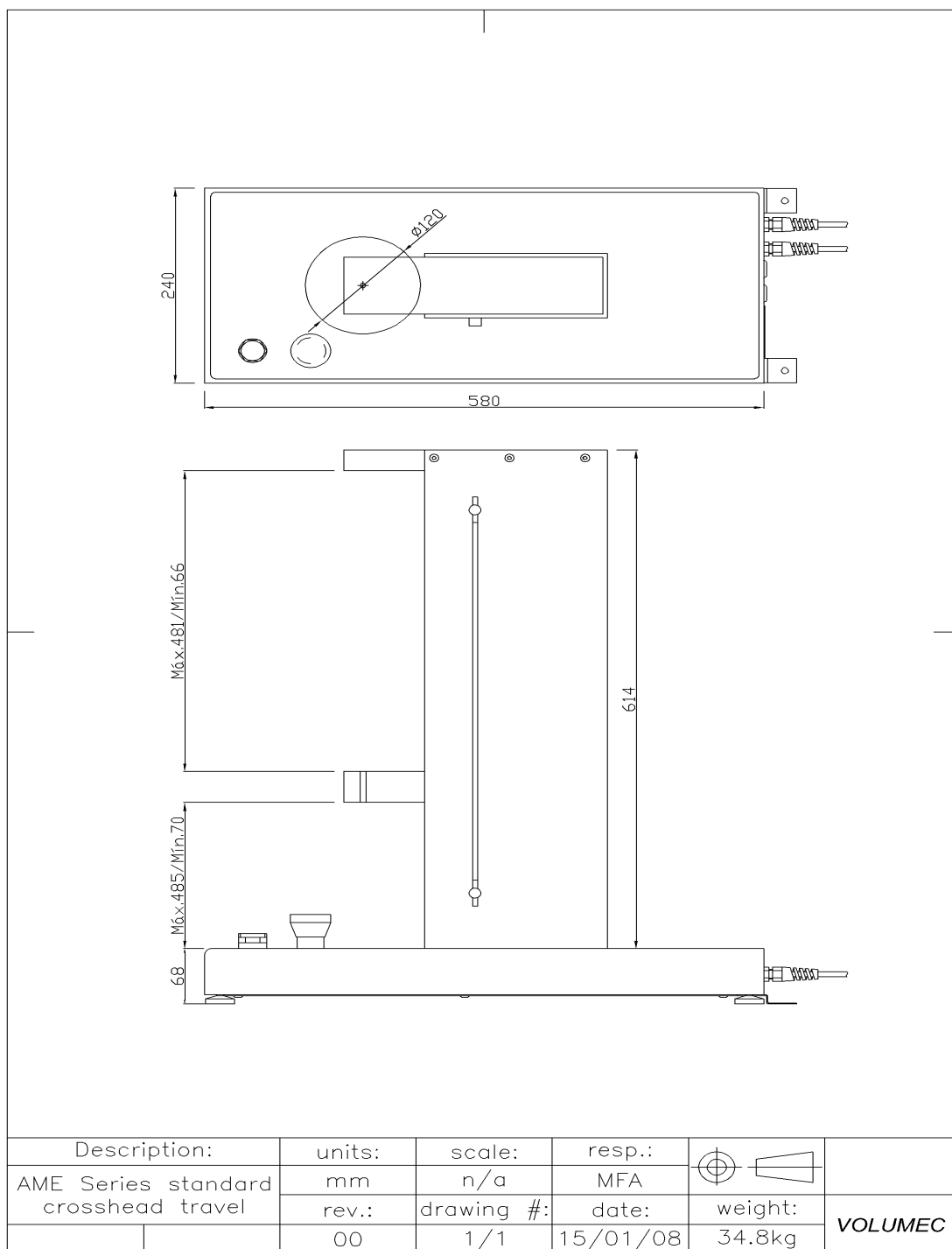
Grips

Machines are supplied with grips and testing fixtures according to the type of materials and testings to be performed. We are also able to provide special grips and fixtures.

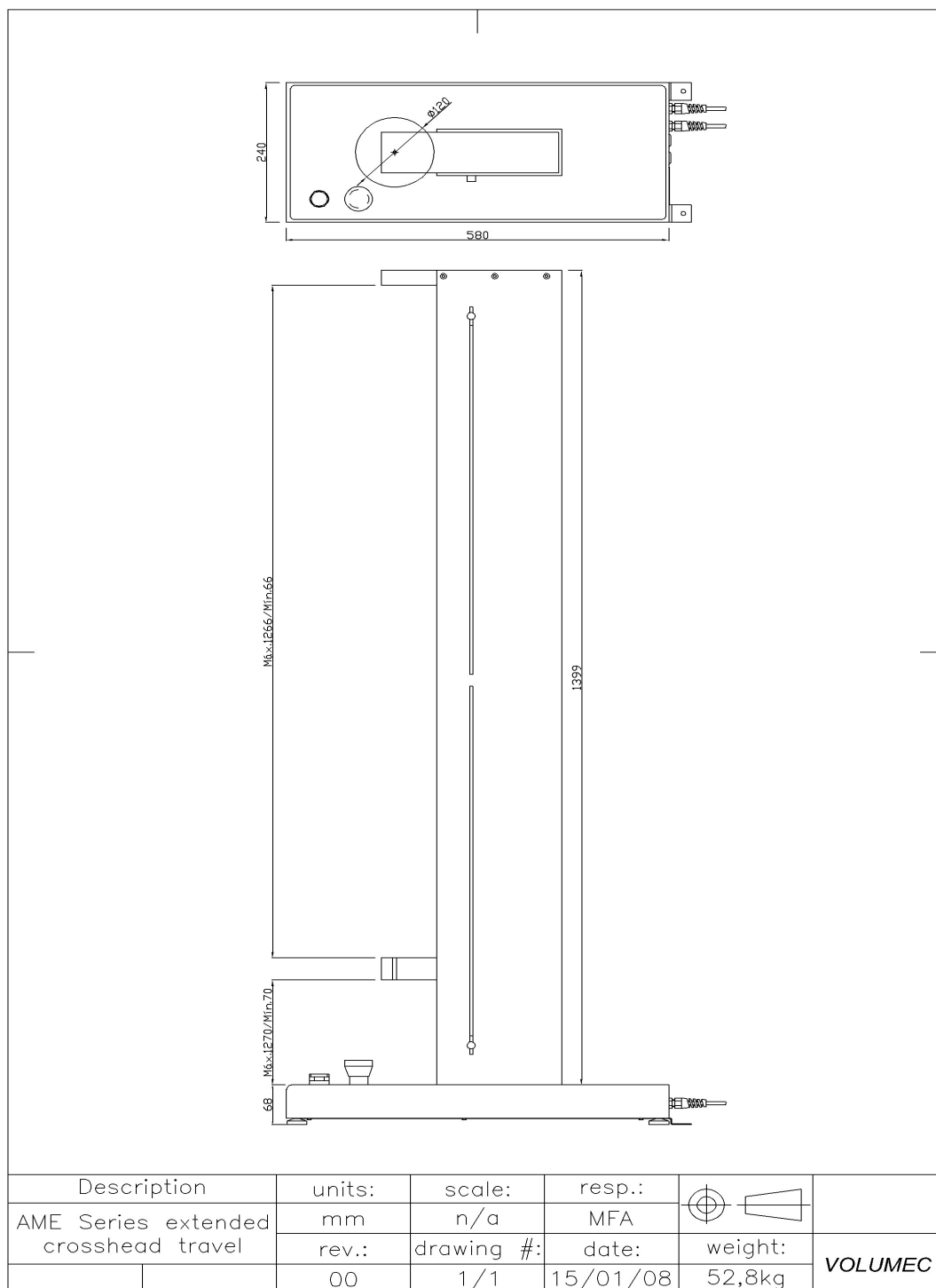


External dimensions

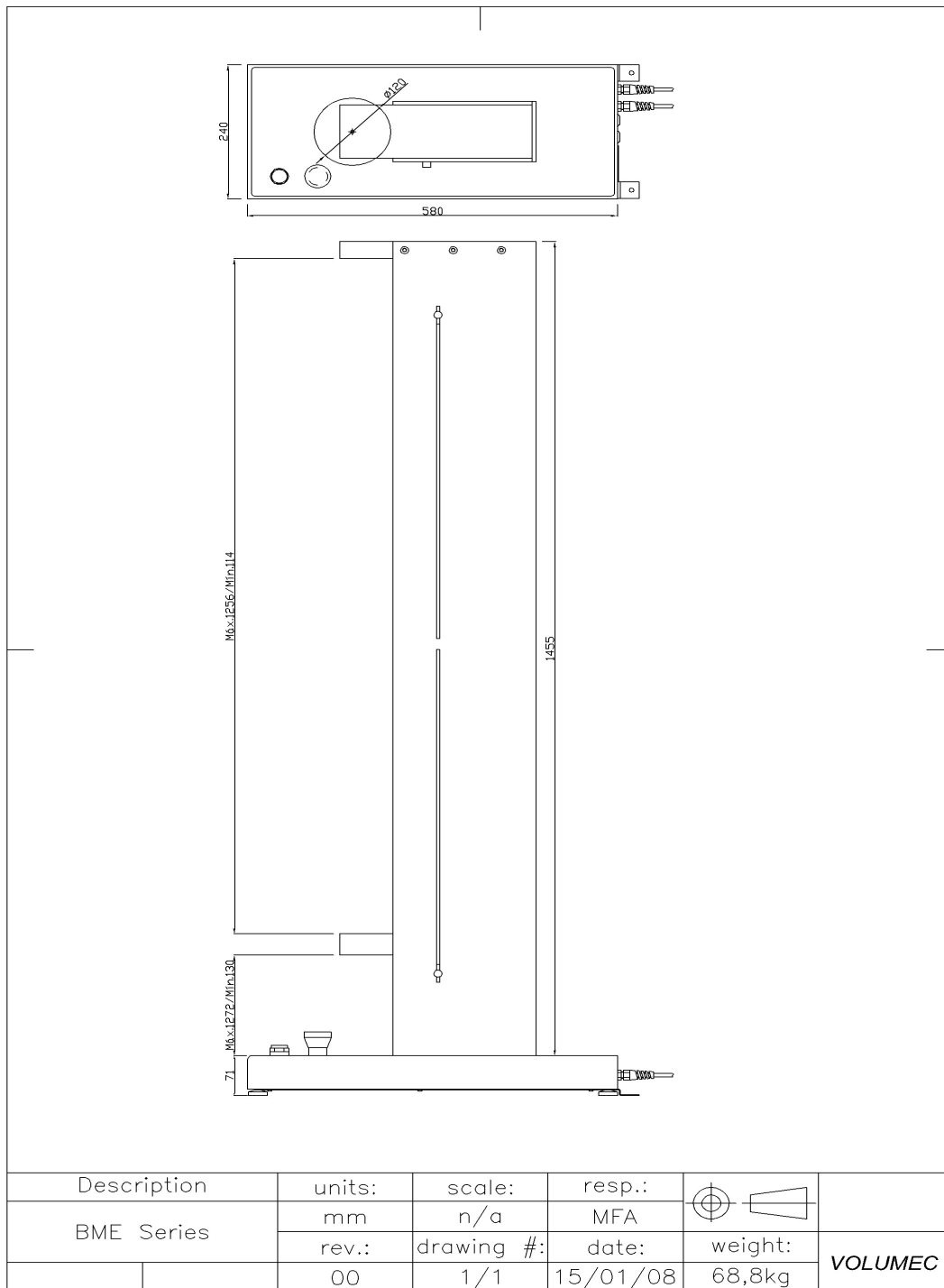
1. AME standard crosshead travel



2. AME extended crosshead travel



3. BME



Technical specification

Universal Testing Machine	
External parts	carbon steel with synthetic painting
Transmission system	precision ball screw with preloaded nut
Protection degree	IP00
Capacity	according to model
Testing speeds	0,05 to 4,95 $\pm$ 0,05mm/min 5 to 500 $\pm$ 0,5mm/min
Power supply	Universal full range (93 to 135Vac or 187 to 250Vac, 47 to 63Hz)
Consumption	0,3kVA (max.)
Storage temperature	-10 to 50 °C
Operating temperature	0 to 40 °C

Extensometer mod. AEX / BEX	
Measuring range	AEX: 1000mm, BEX: 12,5mm, other ranges upon request
Power supply	Universal full range (93 a 135Vac o 187 a 250Vac, 47 a 63Hz)
Consumption	0,1kVA (max.)
Storage temperature	-10 a 50 °C
Operating temperature	0 a 40 °C

Warranty and Limited Liability Agreement

This universal testing machine and accessories is warranted for 1 year from commercial invoice date against any defect, excluding defects caused by misuse or normal wear. Any repair during warranty will have no cost to customer, excluding machine transportation or technician displacement when required, which will run at customer's expenses. Repair under warranty does not cover emission of certificates of calibration, even in cases in which machine or accessories were purchased with a certificate of calibration.

Results generated by this machine are calculated based on testing standards and general knowledge on mechanical properties of materials. The manufacturer will not supply testings from third parties aiming to validate results. The manufacturer will indicate, on request, a reference laboratory for this purpose, which will be contracted exclusively at customer's expense. The customer acknowledges the need to contract specific insurance covering any risk associated to the use of testing results generated.

The manufacturer will under no circumstance be held responsible for losses, damages, lost profits or revenue, bodily injury, including permanent disability, paralysis and death arising out of the use of the machine.