PAINI SISTEMI ITALCACCIA s.r.l.

BALLISTICS

Percussion Primers test system M949 (Berta SPI3)

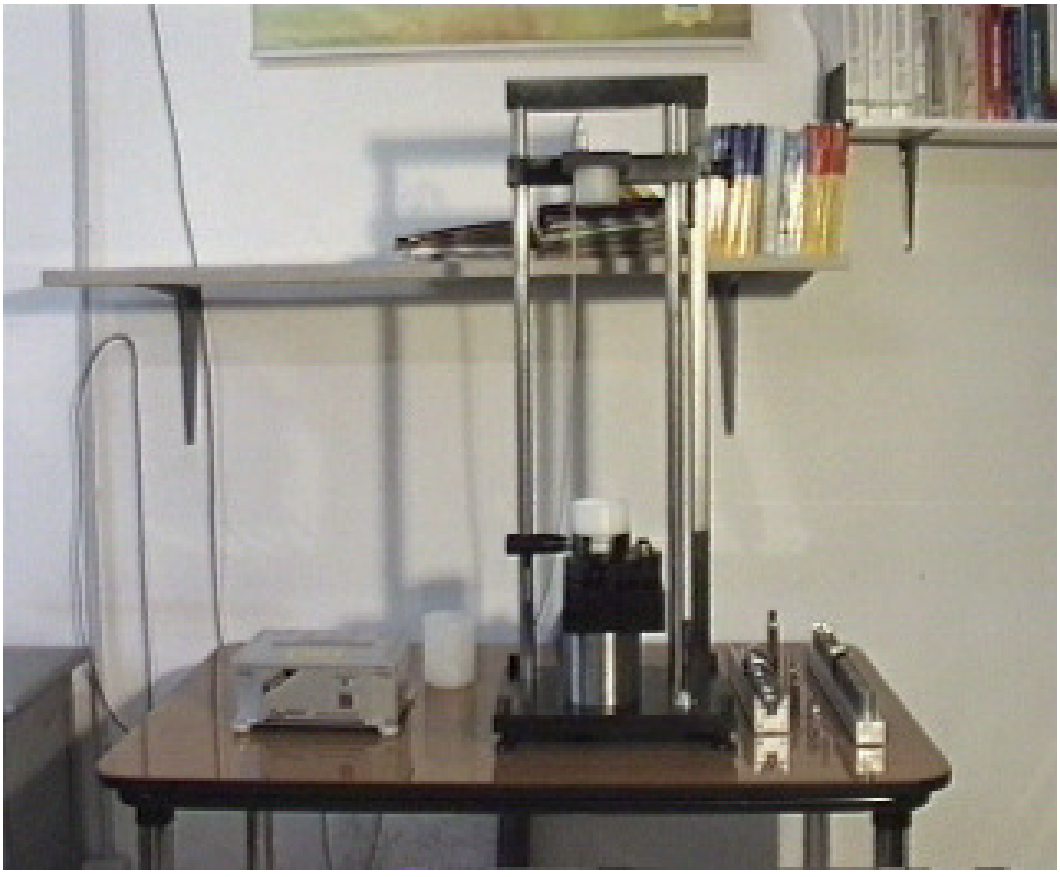
Our society produces 4 different primer sensitivity measurement systems activated via free fall sphere:

M932(SPI2): for the sensibility and force tests of bare primer (not installed in the cartridge case)
M949(SPI3): for the sensibility and force tests (with optional kit) of bare primers and primed cartridge case
M949b: the same as M949 for calibers up to 25mm
M949c: the same as M949 for calibers up to 30mm

The primers / explosives test systems with electrical ignition and the ones for electrostatic sensitivity test are not covered in this brochure.

The M949 is an extremely robust system suitable for intensive sensitivity test of primers. M949 is suitable to test primers for hunting and shooting ammunition, rifle and pistols primers (small /large caps) cartridge cases with caliber up to 20 mm and pyrotechnic delays for hand grenades with the maximum safety.
By placing the exhaust fumes and the air intake outside of the working area, operations can be performed normally without hearing protection and room pollution.
The Berta complies with existing prevention and protection laws and include extra passive protection measure to avoid shooting in the case of accidental fall of the sphere, and/or and to protect the operator in the case of firing with the chamber not completely closed . The power supply guarantees the locking of the grave during the micro-current break (insured retention for at least 1 second). To ensure against longer interruption must provide the instrument of the UPS (optional).

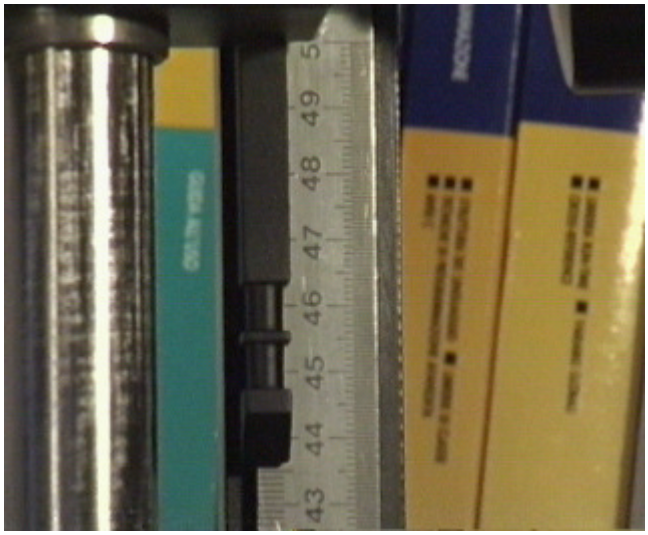
M949



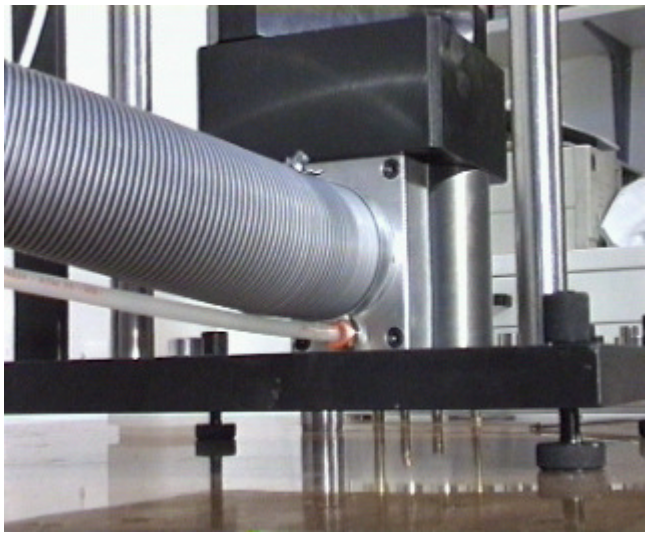
Due to the volume of the measuring chamber of standard M949, the measures of high pressure and temperature carried out in this type of system are less accurate than those made with the SPI2, if you require this type measures on M949 please consider to buy the closed chamber adapter for bare primer to be insert on M949

1.1 The Support

Support is in burnished steel with parts subject to friction in chrome or nickel plated steel. The falling object reference is made in anodized aluminum (metric only) or steel (metric and imperial) with floating zero to adapt to the different thickness of the primer or case supports The standard vernier allows an accuracy of measurement equal to 0.5 mm. To be able to easily adjust the height, is provided, with each primer adapter , a reference (both for the minimum to maximum) of accuracy (error + / - 0.1mm at 20°C) in stainless steel for quick set the height of the sphere according to the test standard to be conducted.
In the options you could find the digital height display that measure directly the of falling height of the sphere and the motorized control useful to change the height of the hookup group



Support is provided with an efficient system for evacuation of smoke and gases in laminar flow, which prevents the exhaust gases and fumes to pollute the environment. The air washing the chamber is taken out in order to reduce the acoustic noise of the machine and to allow the evacuation of fumes before the opening of the chamber. The weight of the grave can exceed t5000 grams (version B and C)



1.2 Release system

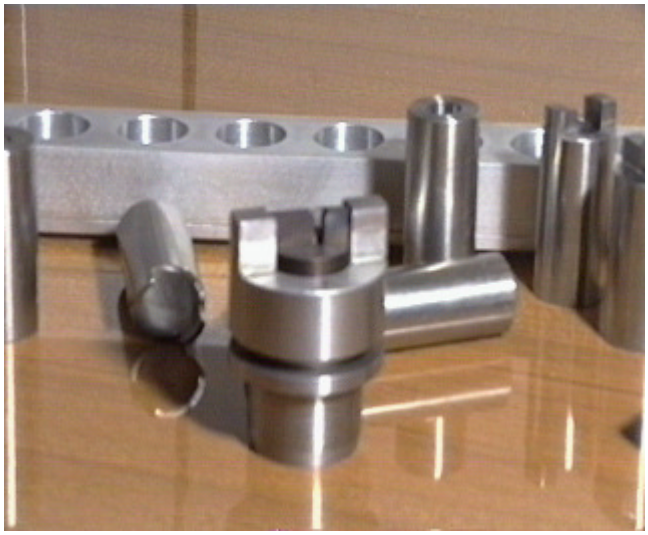
The release system is low voltage electromagnetic type and equipped with filters to eliminate noise on the line power. **UNDER REQUEST IS AVAILABLE A PNEUMATIC HOOKUP.**

1.3 The ignition system

The ignition system of percussion can be of two types: the first standard doesn't allow the measurement of the ignition delay of the primer; the second one, with interface electronics, is used to take measurements of sensitivity coupled with the measures of primer force via maximum pressure developed.
A complete range of firing pins is supplied with adapters to support measures in accordance with the international control standards.

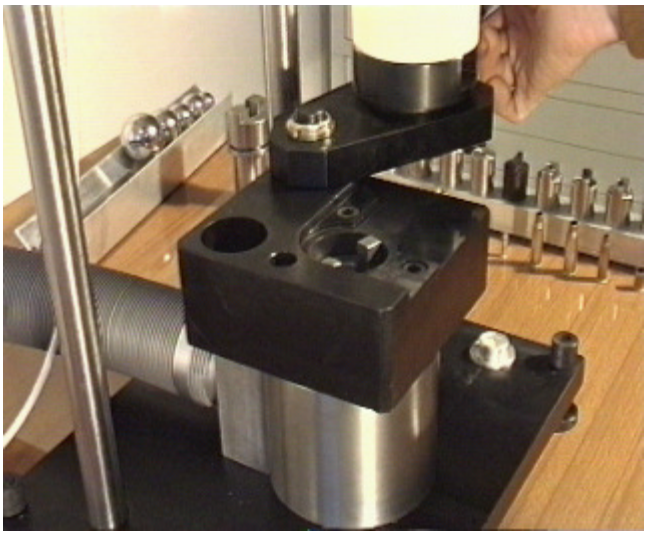
1.4 Adapters

The adapters for the various calibers, the supports for the primer, the cartridge cases and torches are made from hardened stainless steel (for percussion pin hardened steel SMW8) are easy to use and make the test safe and quick The adapters for the sizes up to 12.7x99 (.50 ") use a common support, those for larger caliber are placed directly inside the chamber.



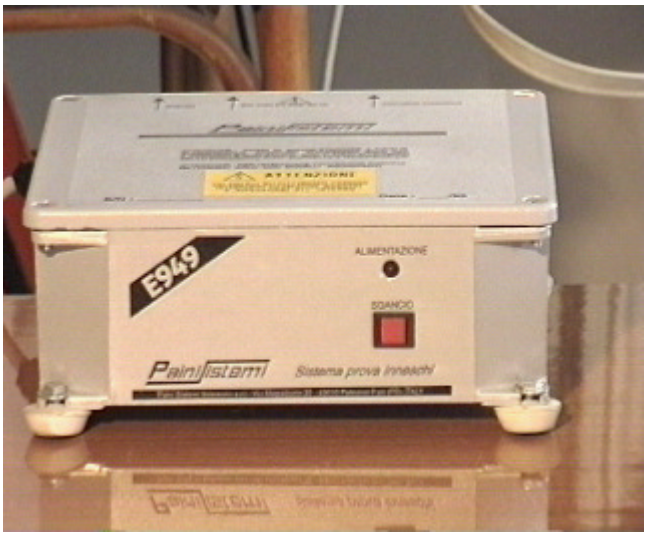
1.5 Measure chambers

Along with a M949 can be supplied with powder chambers of various conformation and volumes to satisfy the most varied requirements of measurement. The power chamber may be open (standard) waterproof, heat-insulated, thermostatically controlled, in various shapes and cubic footage.
The locking system, over to make easy and fast the loading / unloading of the machine, prevents the accidental shooting with a chamber open or not correctly closed, the shape of the firing chamber would prevent the escape of gas to the operator.



1.6 Control

The Berta power control group E949 containing the power control system, the driving system of the falling object release and if required the interfaces for the measuring sensors. The control unit is fully compatible with our broad range of data loggers to connect piezoelectric transducers, temperature measuring systems , etc.

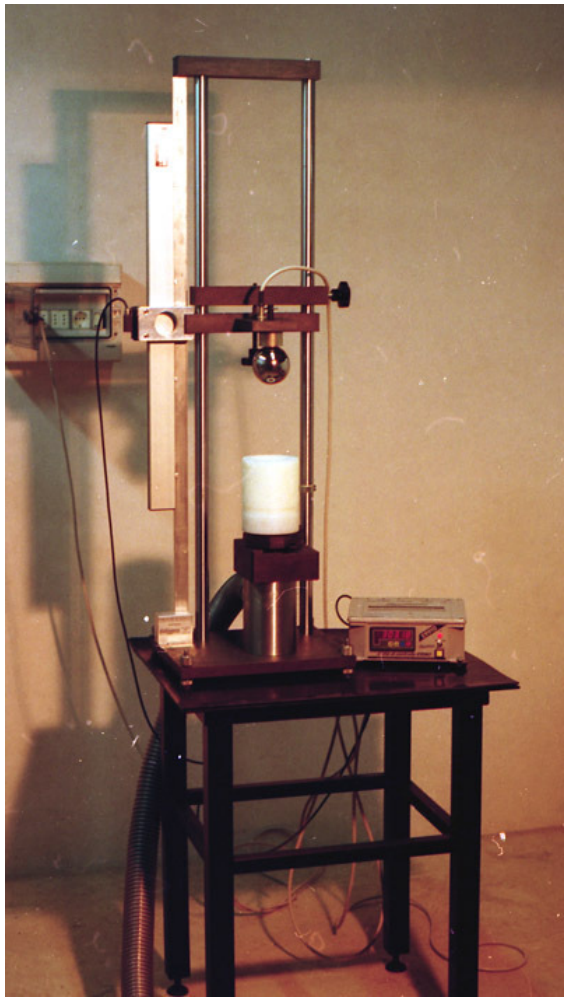


1.7 The Software

XBAL 11 with compatible data logger can be used to measure primers data.

M949b

On the right side you could see the **b** version of the system, equipped with the optional useful for the digital calculation of the height of the falling object(the sphere displayed in the picture weights 2.0kg and is the one which we use for the test of the 25 x137 caliber.



1.8 General Technical features

Power supply: 230 VAC + / - 10% 30W. + About 50W per fan.
Approximate dimensions: 300 x 300 x 800 mm (excluding table and accessory charges for firing ammunition);
Weight: 30-50 kg

The can be configured for specials customer's request.

Data subject to change without notice

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PAINI SISTEMI ITALCACCIA s.r.l.
Divisione Elettronica & Sistemi
Via Rossini 8 - 43011 BUSSETO (PR)
Tel. 0524 332150 e-mail: info1@paini-esd.it

URL: www.paini-esd.it

quam ludus durus fuit
duri ludere incipiunt

Paini Sistemi
Electronics & Systems division