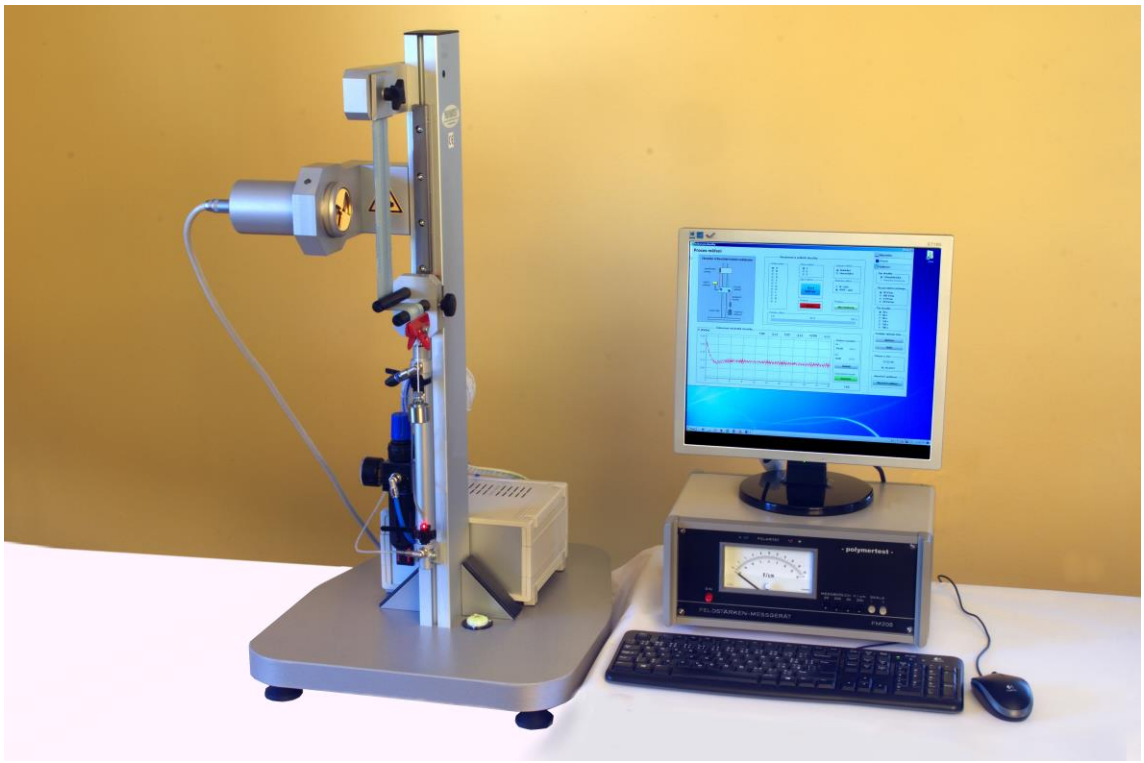
POLYMERTEST
K.H.Máchy 350 , 765 02 Zlín CZ

DELIVERY QUOTATION

Technical conditions and operating instructions

Device for determination of electrostatic properties of protective clothing
Test method for measuring charge reduction 1
č.v.1607
Triboelectric charging
According to standard ČSN EN 1149-3



VIDEO: https://youtu.be/UoR9q6wAtLM

1. Method description

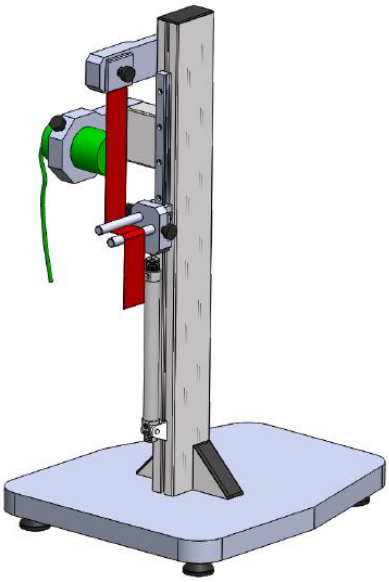
The test material is charged by friction on the cylindrical rods mounted on the running slide collector. The intensity of the electric field of the charge generated on the test material is monitored and recorded by an electrostatic field measuring device connected to the PC with the appropriate measurement evaluation program.

2. Device description

Testing device includes the following main sections:

A) Mechanical
B) Measuring
C) Evaluating

A) Mechanical section

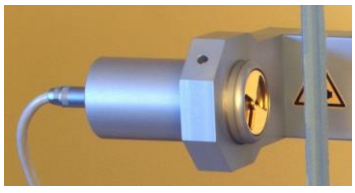


The main part of this unit is a sliding collector to which cylindrical rods are attached. These bars can be changed. The collector moves vertically by means of a pneumatic piston along the line. The lead is fastened to the aluminum profile. The mechanical part also includes a top tether for holding the test material and a lower clamp for tensioning the test material with the prescribed load.

The cylindrical rods are four in total (two pairs), one aluminum and one from HDPE.

B) Measuring section

The electric charge measuring probe with the appropriate apparatus forms a separate unit and can be used for further testing. The output from this unit is connected to the evaluation section.

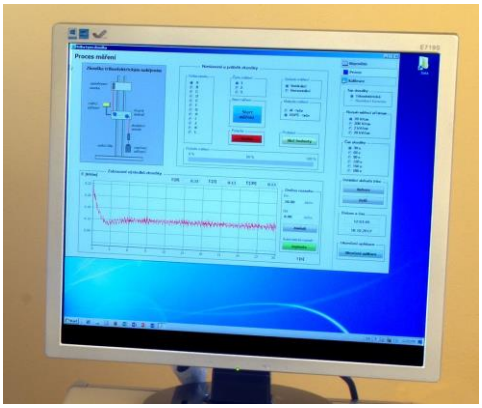


C) Evaluating section

It consists of the power section where the controls for the mechanical part and the relevant transducers are located. Another important part is the PC with an appropriate program.

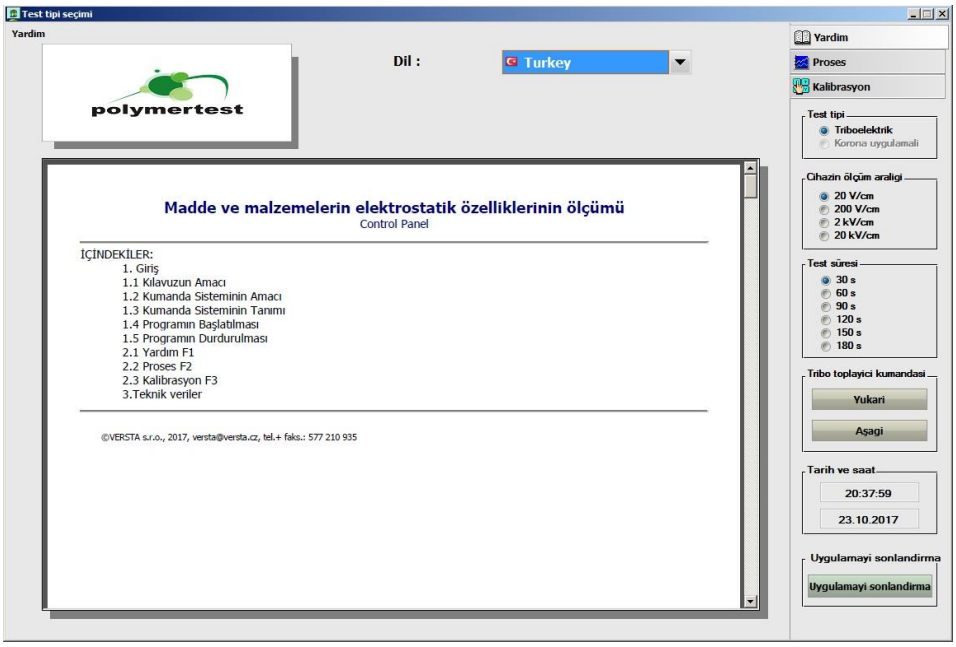
The program allows also “CORONA” tests.

The computer is compatible with IBM PC standard and according to standard office design. Communication on the RS-485 PC level is proceeding via an external communication converter.



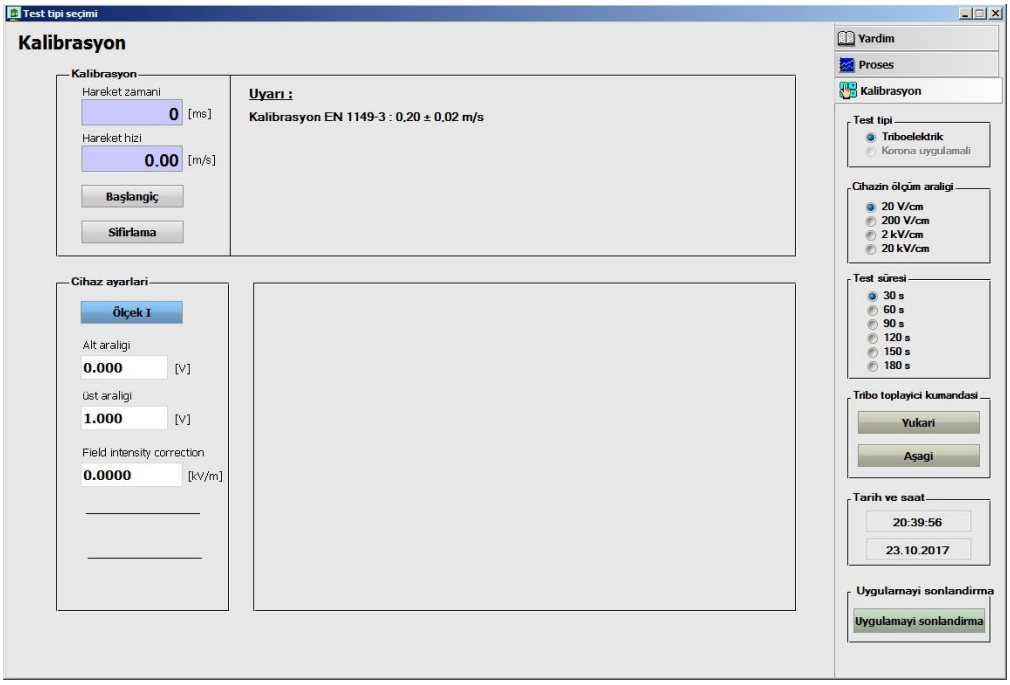
The program is divided into several screens (panels). The basic panel is the technological scheme of the test device with a graphical representation of all the action elements. By color of the element the status is signaled. In this panel the operator performs the preparation of the test apparatus for testing.

Basic panel

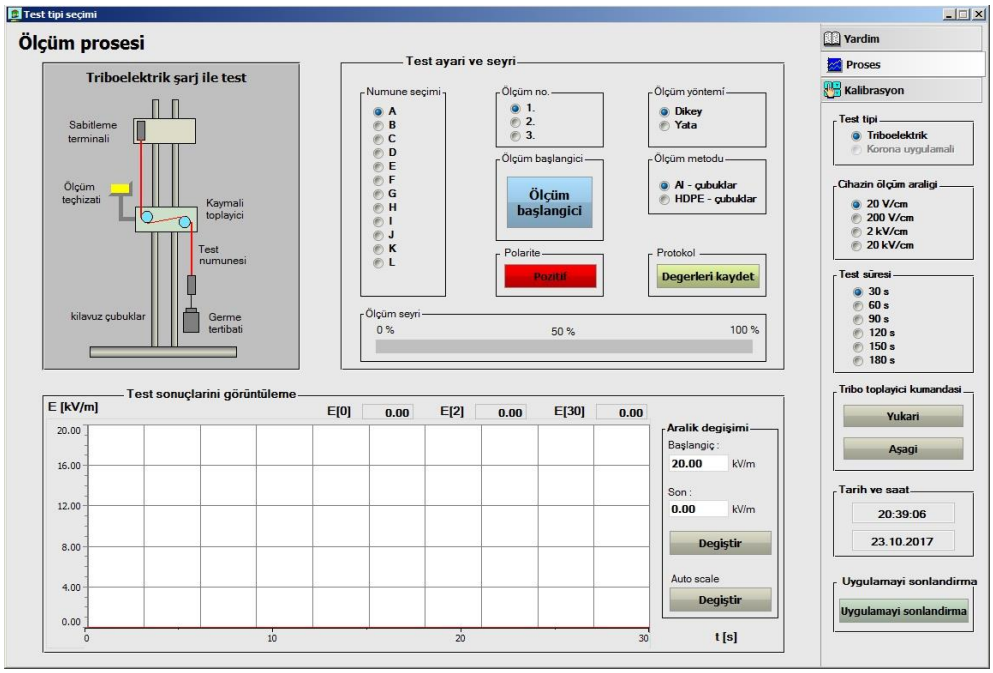


The charge flow rate in a matter of time can be checked in graphical form, which is displayed on a separate panel. The corresponding calculation (evaluation of the test) is also done by the PC. Records are archived in * .DBF archive files. Historical data can be viewed. The manual is also an integral part of the program.

Calibration panel

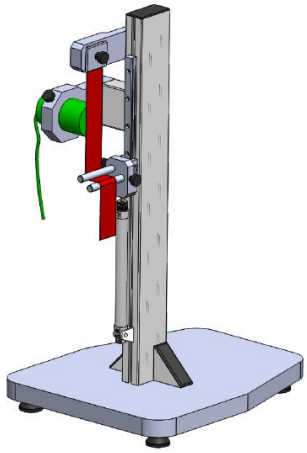


Technological panel



3. Instalation

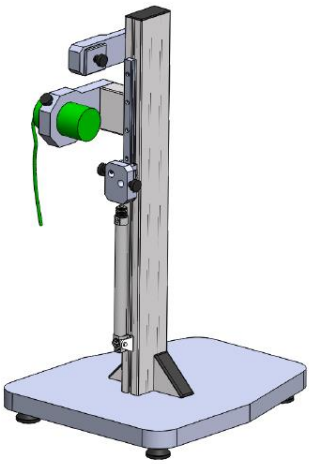
3.1 Mechanical part



a) We place the mechanical part on table. Using a spirit level and by feet screwing we align the base to the horizontal position.

b) The pneumatic hose is connected to a 6 bar pressure air distribution. Attention - by pressing the circuit, the rod holder can moved and moved to the opposite extreme position.

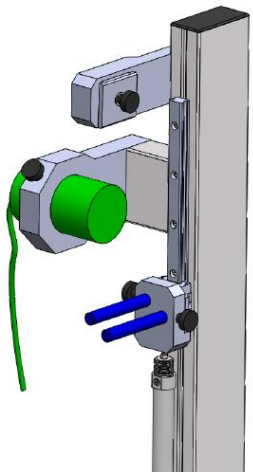
3.2 Measuring apparatus



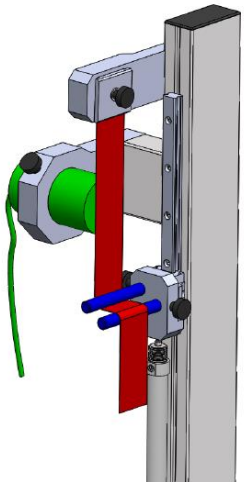
a) The Sensor of Ø 70mm is inserted to the holder.

b) We plug the sensor connector into the measuring instrument and the sensor.

c) Operator selects and completes the appropriate rod type and tightens the screw slightly.



d) Operator prepare the test material according to the standard and fill it into the upper jaw. Tackles the bars and attaches the weights to the bottom of the test sample.



e) Operator sets distance between sensor and test sample to 50 mm.

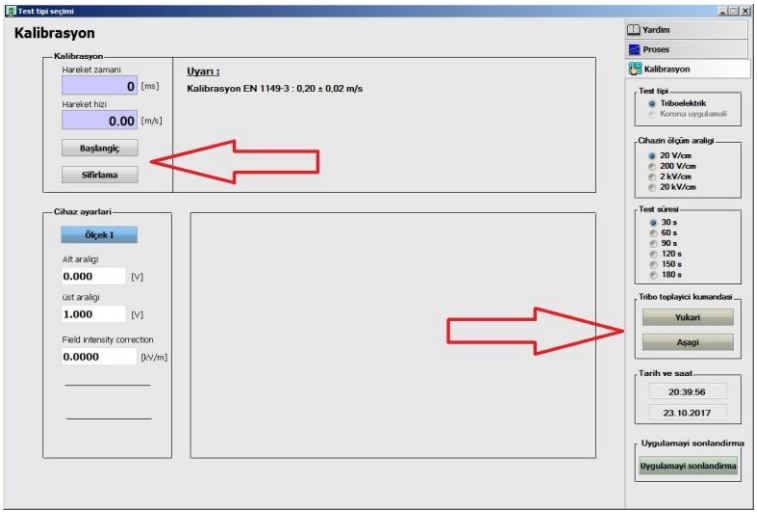
f) Operator connects the PC, keyboard, mouse, and electrical box connector. Turns on the PC and clicks the TRIBO icon to open the program for testing

4. Testing procedure - Triboelectric charging

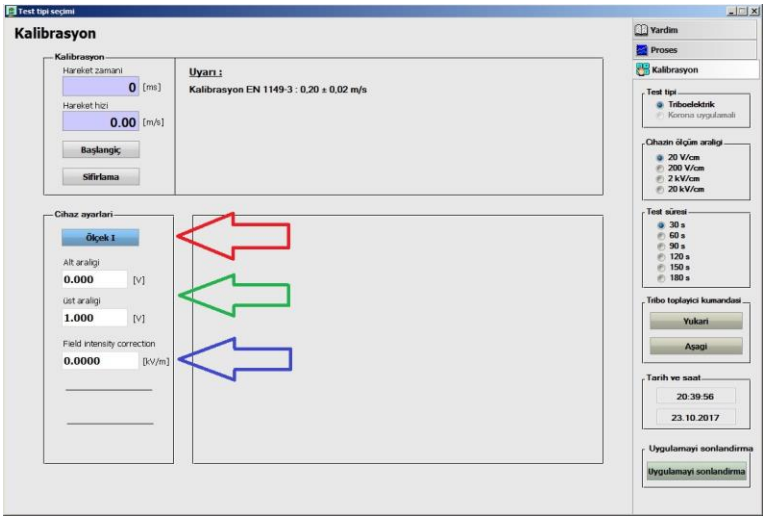
a) Operator selects and sets the appropriate rod type.

b) Operator prepares the test material according to the standard and fill it into the upper jaw. Tackles the bars and attaches the weights to the bottom of the testing sample.

c) Operator turns on the computer and adjusts the speed in the calibration panel to add or reduce the pressure on the pressure regulator. It is located on the side of the supporting aluminum profile. He controls moving of the rods through the PC by clicking the "up" and "down" buttons. Always reset the data at the top left of the screen when measuring before starting the bars.



Setting of testing parameters:



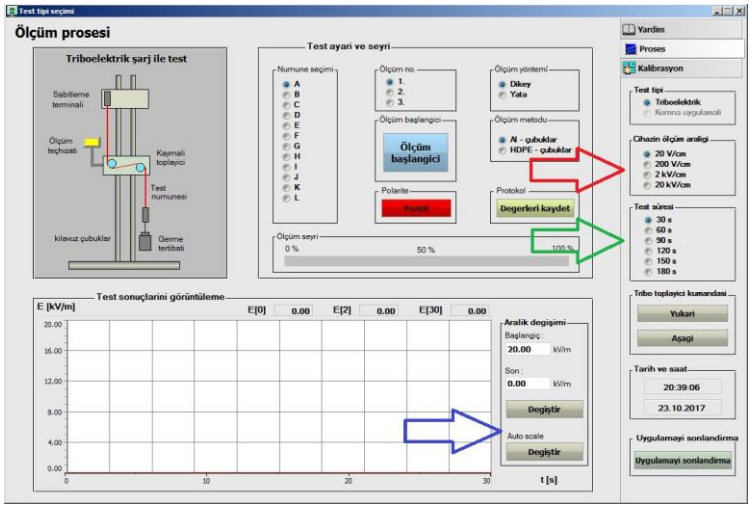
It is necessary to set the same SCALA on PC and device.

The range for this type of device must be set to 0 to 140 mV on the PC

The substance can have a minimum charge and setting of the data moves the graph to 0. For example: If the initial charge is of + 0.5 we set to -0.5. This makes is the default value of 0. This setting will only take effect for next measurement.

d) Operator prepares the measuring device and the PC for the test - switches to the technology panel, selects the appropriate type of test. For example, Sample A, Measure 1, Crosswise, Measuring Time 30 Seconds, HDPE Bar Type. The polarity is set according to the device data. Performs first measurement at the highest range – not to overload the machine. Then it gradually reduces the range.

ATTENTION – it is always necessary to set the same range on PC and device

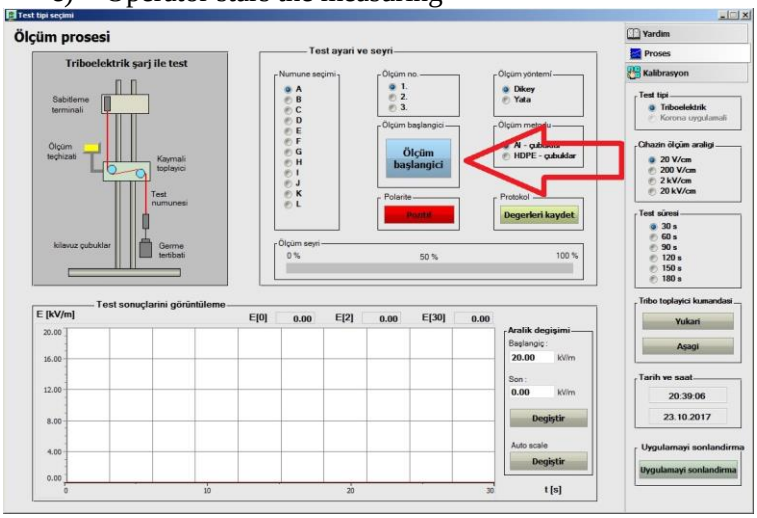


Range setting

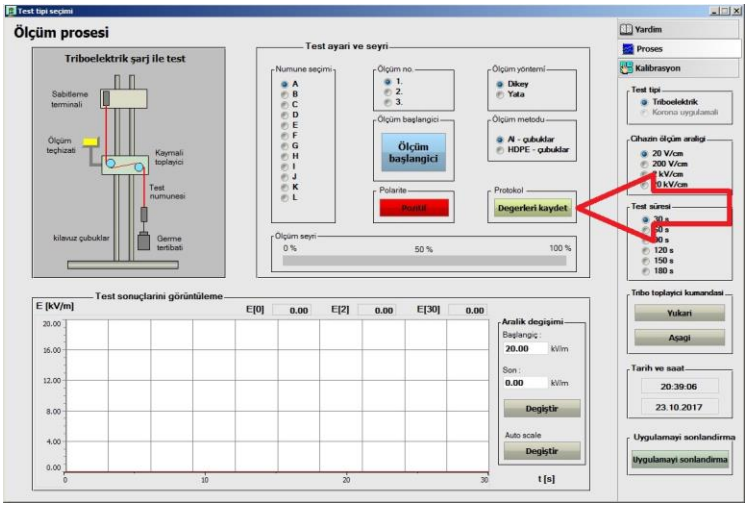
Measuring time setting

Graph range setting
Options:
- **Manually**
- **Automatically**

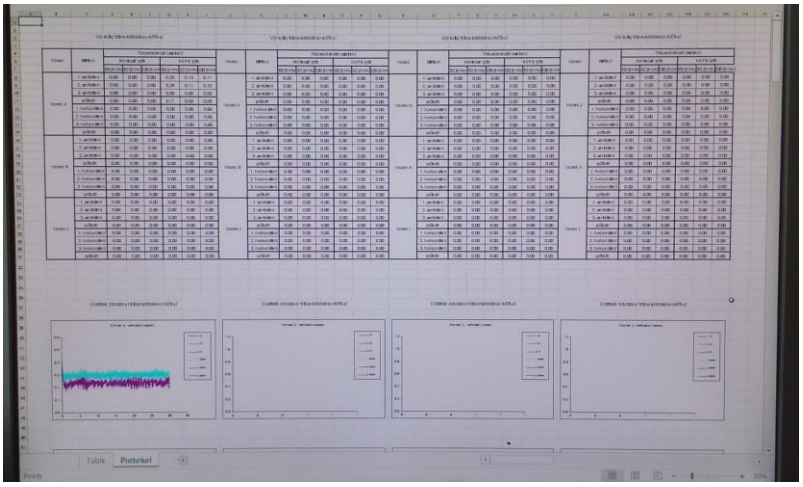
e) Operator stars the measuring



f) Operator evaluates the test. If the test was proceeded without problems, he continues in further measurements.



After completing the respective measurements, operator evaluates the entire series of measurements. You can open data in the right part of the screen –individual measurements are saved in there.



Procedure is according to the standard.

5. Technical data

Cylinder bars:	2pcs polyethylene (HDPE) 2pcs aluminum Material properties according to the standard Diameter 15,0 ± 0,5 mm Length 100 ± 5 mm Distance according to the standard 15 ± 1 mm
Pneumatic cylinder stroke:	200 mm
Slide collector speed	0,20 ± 0,02 m/s
Bottom grounded metal clip	1,30 ± 0,05 N

VIDEO:

https://youtu.be/UoR9q6wAtLM

6. Commercial data

Price of testing device

1 pcs ... **19.500,- EUR**

including transport!

Commissioning :

A, To be done by the Customer pursuant to detailed instructions. Possible e-mail consulting or by phone in English is included in the price.

The program is **in TURKISH.**

INCLUDING TRANSPORT to ISTANBUL.

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Commissioning :

I think the best option is if you first try and install the device by yourselves and our personnel will come only in case of unsuccessful installation.

Performed by the Customer according to detailed instructions.
An instructional video will be provided. Subtitles in English
Any e-mail or telephone consultation (video conference) in English is included in the price.
Operation is simple, intuitive. So far, we've always managed it remotely.

The price includes the translation of the manual into **English languages**.
The program is **in TURKISH.**

Advance payment 60% based on advance invoice within 14 days following receipt of purchase order. 40% before shipping.

Delivery time 4 month + transport
Guarantee 1 year
Quotation validity period 5 months

With regards

In Zlín 19.9. 2025

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