



**S.D.M.®**  
APPARECCHI SCIENTIFICI SRL



## 820 ABEL OPERATION AND INSTRUCTION MANUAL

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## METHODS

IP 170, ISO 13736

For determination of the closed-cup ash point of combustible liquids having ash point between -30 and 70°C (-22 AND 158°F)

## INSTRUMENT

Electrically heated by electronic regulator, mounted on a case painted with anti-acid epoxidic products. Calibrated brass crucible, cover with gas or electrical ignition device allowing to ignite the testing sample by a manual glide-opening. Motor stirrer, air bath and water bath are made in chromium-plated copper, internal cooling coil with external connection for possible cooling bath.

Power Supply: 230V ±10%, 50/60Hz

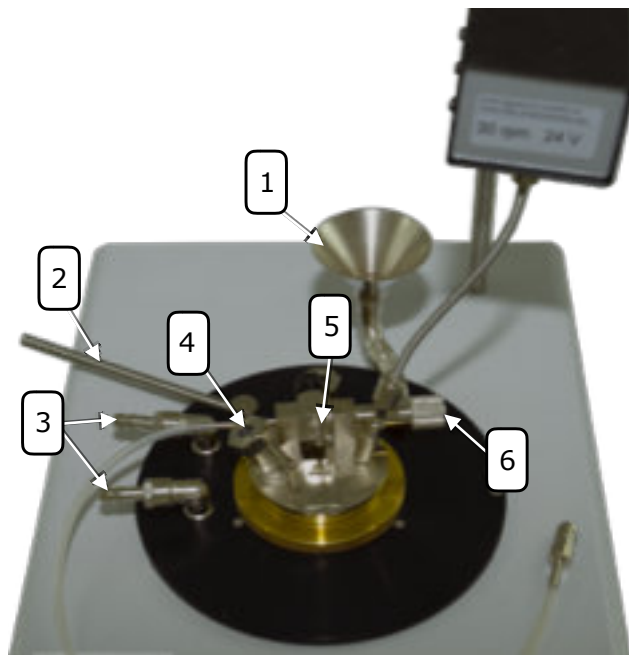
Power: 700W

Dimensions: 26x32x37cm

Weight: 7 Kg

Working temperature: from ambient to 70°C (157°F)  
(up to -30°C(-22°F) with external unit)

Cooling: internal fan or external refrigerating unit



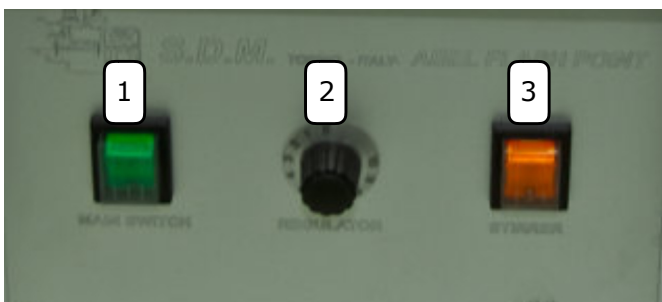
## USE

Be sure the MAIN SWITCH and the stirrer button are on "OFF" position, turn the regulator on "0" position. Insert the brass crucible and fill the bath with 2 liters of liquid at the working temperature. How security, in the instrument, there is a pipe overflow: collocate, under it, a glass so that if the bath will too full, automatically, the liquid will discharge from this pipe. After that, place the thermometer IP 75C (not included with the instrument) in the bath to control the bath temperature, if you must work at low temperature, you need to connect a cryostat through the silicon tube to inlet/outlet to the instrument. After that, make sure the liquid temperature is conform with the norm. Connect the power supply to the instrument and switch on it, place the motor stirrer in position locking it on the rod.

To any informations about performing the test, sampling and timing, following the norm.



## PANEL



1. Main switch button: make sure all buttons are on "OFF" position and the regulator is on 0 position, push the button to turn on the instrument.
2. Regulator: turn to heat the liquid in the bath.
3. After have sampled and connected the motor stirrer to the instrument, push the button to turn on the stirrer and stir the liquid into the bath.

1. Crucible brass: use it to fill the bath with an appropriate liquid.
2. Pipe overflow: security system to drain water by bath if it is too full.
3. Inlet/outlet cryostat: connect a cooling system to cool the liquid in the bath.
4. Sample thermometer support: insert a thermometer to control the temperature.
5. Gas ignitor: turn on and regulate the flame, follow the laboratory security when you use the gas and perform the test as prescribed by norm.
6. Movement: turn to perform an immersion as prescribed by norm.
7. Motor stirrer: place the motor stirrer on the rod and fix it using clip, content the flexible stirrer to the instrument and the cable on the rear of the instrument.

## GAS IGNITOR ASSEMBLING

After filled the test cup with the sample, close with cover and place a gas cylinder (max. pressure 30 mbar). Connect it to gas ignitor using silicon tube. Follow the laboratory security when use gas.



The use of this instrument may involve hazardous materials and operations. This manual does not purport to address all of the safety problems associated with the use of this instrument. It is the responsibility of any user of this instrument to investigate, research, and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

Be sure there are no foreign objects in the bath. NEVER leave the instrument unattended while the samples are under testing.

NEVER leave instrument unattended while unit is on. DO NOT allow unauthorized persons to access the instrument.

Do not operate this instrument while under the influence of drugs, medication or alcohol.

This instrument is specifically designed for use in accordance with the applicable standard test methods listed in **METHODS** of this manual. The use of this instrument in accordance with any other test procedures, or for any other purpose, is not recommended and may be extremely hazardous.

## ACCESSORIES ON REQUEST

10-0748 GAS CYLINDER 2 kg. Empty

10-0749 GAS REDUCER 30 mbar

10-0747 GAS TUBE, L=5 m

T-IP74C THERMOMETER IP 74C

T-IP75C THERMOMETER IP 75C

## SPARE PARTS

15-CAN/IE ELECTRIC IGNITION x2

15-0750/S GAS TUBE, L=3 m

15-0821 BRASS TEST CUP

15-0822 COVER WITH MOVEMENT

15-0828/CT THERMOMETER COLLAR

15-0824/FM STIRRER FLEXIBLE DRIVE

15-0755 GAS IGNITION

17-0003 TRASFORMER

11-820 HEATER

15-0004 BIPOLAR GREEN SWITCH

15-0005 BIPOLAR YELLOW SWITCH

15-0113 ELECTRONIC REGULATOR

12-0013 MOTOR STIRRER 30 RPM 24V

## MAINTENANCE

Disconnect power to the unit before servicing. For spare parts please provide the P/N and serial number SN of the instruments.

Any modification or alteration of this instrument from that of factory specifications is not recommended and voids the manufacturer warranty, product safety, performance specifications, and/or certifications whether specified or implied, and may result in personal injury and/or property loss. Replacement parts must be S.D.M. exact replacement equipment.

## WARRANTY

The warranty covers the apparatus from defects of manufacture for 1 year from the date of delivery. During the period of warranty, S.D.M. will replace and/or will repair free all the components that had to result defective to the origin.

Spent the terms above suitable, the warranty declines and the assistance will be realized debiting the cost of the components, of the operation, of the transport of the materials and the incidental expenses.

S.D.M. is not responsible for damages caused by wrong connections with the system of power supply, by a wrong use of the device, by the negligence of the operator, by atmospheric and geophysical agents, by vandalism, by wartime events and in the case of damages caused by the transport and by the use of non original exchanges. The possible extraordinary maintenance realized personally by the customer in the period of warranty won't be refunded and they will cause the immediate suspension of the warranty.

S.D.M. is reserved the right to bring, in any moment and without warning, changes and innovations, respecting the norms ASTM, without nobody can advance complaint.

## WEEE DIRECTIVE

In compliance with art. 13 of the Legislative Decree dated 25 July 2005, no. 151 "Implementation of the Directives 2002/95/EC, 2002/96/EC and 2003/108/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment, as well as waste disposal".

The symbol of the crossed-out wheeled bin on the equipment or its packaging indicates that the product must be disposed of separately from other waste at the end of its operational life.

The differentiated collection of this equipment arrived at the end of life is organized and managed by the manufacturer. The user that intends to trash this equipment will have to contact the manufacturer and follow the procedure that it has taken to allow separate collection of the apparatus arrived at the end of life.

Appropriate differentiated collection for the dismantled appliance being subsequently sent out for recycling, treatment and for environmentally friendly disposal, contributes to the prevention of possible negative effects on the environment and on human health, and encourages re-employment and/or recycling of the materials the appliance is made of. Specific administrative sanctions provided for by current regulations will be applied for illicit disposal of the product by the user.

## WIRING DIAGRAM

# DECLARATION OF CONFORMITY

(According to the 22 ISO/IEC Guide and the standard EN 45014)

Supplier: S.D.M.® Apparecchi scientifici S.r.l.  
Corso Raffaello, 11/BIS 10125 Torino ITALY

The supplier declares that the instrument:

- Name: ABEL
- Model: 820
- Type: IP 170, ISO 13736
- Serial no.: 8789

Is in conformity with the following Directives:

Electromagnetic compatibility: EMC 2014/30/UE

Low voltage: 2014/35/UE

and with the following Harmonic Methods:

CEI EN 61326-1, CEI EN 61000-6-2, CEI EN 61000-6-4, CEI EN 61010-1, CEI EN 60355-1

Place and date: Torino, June 2020

Name: De Donatis Marzio  
CEO

Signature:

S.D.M.  
APPARECCHI SCIENTIFICI s.r.l.  
*Marzio De Donatis*