

Petroleum Testing Apparatus

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2023 CATALOG

- Demulsivity and Foaming Testers
- Flash Point Testers
- Oxidation stability Testers
- Cold Properties Analyzers
- Grease and bitumens Testers
- Analyzers acc. to ASTM, IP, EN, DIN, ISO methods

This catalog contains the following brochures:

- ASTM D 5 - D 217 Digital penetrometer for bitumens
- ASTM D 5 - D 217 Thermostatic bath for penetration sample conditioning
- ASTM D 6 - D 1754 - IP 145 Apparatus for the determination of loss on heating of asphaltic compounds
- ASTM D 36 - IP 58 Automatic softening point tester
- ASTM D 92 - IP 36 - ISO 2592 Cleveland manual flash point tester
- ASTM D 92 - IP 36 - ISO 2592 Cleveland automatic flash and fire point tester with barometric correction of the result
- ASTM D 93 - IP 34 - ISO 2719 Pensky Martens manual flash point tester
- ASTM D 93 - IP 34 - ISO 2719 Pensky Martens automatic flash point tester with barometric correction of the result
- ASTM D 97 - D 2500 - IP 15 - ISO 3015, 3016 Mechanically refrigerated cloud and pour point cabinet
- ASTM D 97 - ISO 3015, 3016 Pour Point automatic tester
- ASTM D 113 - D 5976 - IP 32 - ISO 1208 Ductility machine
- ASTM D 113 - D 5976 - IP 32 - ISO 1208 – EN 13398, 13589, 13703 Computer controlled ductility machine
- ASTM D 130 - ISO 2160 Apparatus for the determination of copper corrosion of petroleum products
- ASTM D 217 - D 1321 - D 1403 - IP 50 - IP 310 - ISO 2137 Digital penetrometer for grease, wax and petrolatum
- ASTM D 217 - IP 50 - ISO 2137 Electrically operated grease working machine
- ASTM D 323 - IP 69 - ISO 3007, 4256 Apparatus for the determination of Reid vapor pressure of gasoline
- ASTM D 381 - IP 131 - ISO 6246 Apparatus for the determination of existent gum in fuels by jet evaporation
- ASTM D 445 - IP 71 - ISO 3104 Low-temperature bath for viscosity determination
- ASTM D 445 - IP 71 - ISO 3104 Ultrathermostat for viscosity determination
- ASTM D 525 - D 873 - IP 40 - IP 138 - ISO 7536 Apparatus for the determination of oxidation stability of gasoline and aviation fuels (PC controlled)
- ASTM D 566 - IP 132 - IP 396 - ISO 2176 Apparatus for the determination of dropping point of lubricating grease
- ASTM D 665 - IP 135 - ISO 7120 Apparatus for the determination of rust preventing characteristics of inhibited mineral oil in the presence of water
- ASTM D 892 - IP 146 Foaming Test apparatus
- ASTM D 892 - D 6082 Diffuser calibration apparatus
- ASTM D 942 - IP 142 Apparatus for the determination of oxidation stability of lubricating greases by the oxygen pressure vessel method (PC controlled)
- ASTM D 943 - IP 157 - ISO 4263, 12205 Apparatus for the determination of oxidation characteristics of inhibited mineral oils
- ASTM D 972 - IP 183 Apparatus for the determination of evaporation loss of greases and oils
- ASTM D 1177 Apparatus for the determination of freezing point of antifreeze liquids
- ASTM D 1263 Apparatus for the determination of the leakage tendencies of automotive wheel bearing greases
- ASTM D 1264 Apparatus for the determination of water washout characteristics of lubricating grease
- ASTM D 1267 - IP 161 - ISO 3007, 4256 Apparatus for the determination of vapor pressure of liquefied petroleum gases
- ASTM D 1384 Apparatus for the corrosion test for engine coolants in glassware
- ASTM D 1401 - ISO 6614 Apparatus for the determination of water separability of petroleum oils and synthetic fluids (Herschel emulsifier)
- ASTM D 1401 - ISO 6614 Apparatus for the determination of water separability of petroleum oils and synthetic fluids (Herschel emulsifier - automatic version)
- ASTM D 1657 - IP 235 - ISO 3993 Apparatus for the determination of density or relative density of light hydrocarbons by pressure thermohydrometer
- ASTM D 1748 - IP 366 Apparatus for the determination of rust protection by metal preservatives in the humidity cabinet
- ASTM D 1831 Apparatus for the determination of roll stability of lubricating grease
- ASTM D 1838 - ISO 6251 Apparatus for the determination of copper strip corrosion by liquefied petroleum gases
- ASTM D 2272 - ASTM D 4742 Apparatus for RBOT and TFOUT test
- ASTM D 2274 - IP 388 - ISO 4263, 12205 Apparatus for the determination of oxidation characteristics of distillate fuel oil
- ASTM D 2386 - ISO 3013 Freezing Point automatic tester
- ASTM D 2440 - CEI 10.8 - CEI/IEC 1125 (A + B) - EN 61125 (A + B) - IP 48, 280, 306, 307 Apparatus for the determination of oxidation stability of mineral insulating oils
- ASTM D 2500 - ISO 3015, 3016 Cloud Point automatic tester
- ASTM D 2500 - ASTM D 97 - ISO 3015, 3016 Cloud and Pour Point automatic tester
- ASTM D 2595 Apparatus for the determination of evaporation loss of lubricating greases and oils over wide temperature range
- ASTM D 2619 Apparatus for the determination of hydrolytic stability of hydraulic fluids (beverage bottle method)
- ASTM D 2711 Apparatus for the determination of demulsibility characteristics of lubricating oils
- ASTM D 2872 - EN 12607 Apparatus for the rolling thin film oven test of bitumens
- ASTM D 4340 Apparatus for the determination of corrosion of cast aluminium alloys in engine coolants under heat rejecting conditions
- ASTM D 6082 Apparatus for the determination of high-temperature foaming characteristics of lubricating oils
- ASTM D 6371 - IP 309 Apparatus for the determination of cold filter plugging point (CFPP) of diesel fuels
- ASTM D 6371 - EN 116 - IP 309 Cold Filter Plugging Point automatic tester
- CEC L-48-A-00 Apparatus for the determination of oxidation stability of lubricating oils used in automotive transmission fluids
- DIN 51 554 Apparatus for the determination of ageing characteristics of lubricating oils (BAADER)
- FTMS 791-5308 Apparatus for the determination of corrosiveness and oxidation stability of light oils (metal squares)
- IP 33 - IP 170 - ISO 1523, 13736 Abel flash point tester
- IP 33 - IP 170 - ISO 1523, 13736 Abel automatic flash point tester
- IP 227 Apparatus for the determination of silver corrosion by aviation turbine fuels
- IP 375 Hot Filtration Test apparatus
- ASTM thermometers
- IP thermometers
- Viscometer tubes
- Hydrometers

DIGITAL PENETROMETER FOR BITUMENS

ASTM D5 - IP 49 - ISO 2137

The apparatus consists of a penetrometer with adjustable head combined with a gear that permits a fine adjustment of the cone position right upon the bitumen sample: the results are showed on a digital display placed, together with an electronic timer in an independent control box.

Optionally, refrigerated baths of various sizes are available (please require related technical bulletin): by connecting the bath to the transfer dish it is possible to penetrate samples while immersed in water at 25°C or other test temperatures.



- Robust flat aluminium base with centering device, spirit level and levelling screws.
- Encoder with 50 mm motion for penetration measurement.
- Digital penetration display with 1/10 mm accuracy.
- Electronic programmable timer for penetration time setting.
- Stainless steel needle plunger (47.5 g total weight) complete with electromechanical locking system. By pushing the start button the locking system is disabled: after the preset time (usually 5 seconds) the plunger is automatically locked in the reached position and the distance (penetration) from the top surface of the sample is shown on the display.
- Standard ASTM/IP needle, 2.5 g total weight.
- One 50 g and one 100 g load weights.
- Button for manual handling of the plunger.
- Mirror and spot light.
- Easy access control box which contains all the electronics: anodized aluminium control panel with English written indications.
- English written user manual.
- For 220V - 50 Hz connections: 50 W.
- Dimensions (l x w x h): mm 350 x 325 x 350 approx. Weight: kg 15 approx.
- CE marked.

AD0005-100 Digital penetrometer for bitumens

ACCESSORIES

AD0005-A00 Transfer dish
AD0005-A01 Brass sample container, Ø 70x45 mm
AD0005-A02 Brass sample container, Ø 55x35 mm
AD0005-A03 Penetration measurement calibration block

CONSUMABLES

AD0005-C00 Needle acc. to ASTM D 5
AD0005-C01 Load weight 50 g
AD0005-C02 Load weight 100 g
AD0005-C03 Stainless steel plunger, 47.5 g

Specifications may vary without notice

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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THERMOSTATIC BATH FOR PENETRATION SAMPLE CONDITIONING ASTM D5 - ASTM D217

The equipment consists of a compact benchtop circulation cooler to be placed below the bench supporting the penetrometer: thanks to a built-in cooling compressor, temperature can be maintained in a range from 0 to 50°C with 0.1°C precision. A pump permits to circulate the liquid in the transfer dish placed on the penetrometer.



- Enamel finished benchtop steel case.
- Stainless steel inside tank, 10 liter capacity, thermally insulated.
- Stainless steel cover.
- Electric pump with overload protection. The pump is equipped also with a propeller to stir the liquid in the tank.
- Stainless steel heater.
- Air cooled hermetically-sealed single stage cooling compressor placed aside the tank. Chromium plated cooling coil. CFC/HCFC-free gas is used to fill the circuit.
- Microprocessor thermoregulator with PID action and built-in digital display 0.1 °C accuracy. Probe: Pt100 RTD. The heater is piloted through a SSR.
- Safety device against over-temperature and low-level: it cut off the power supply and light a lamp on the control panel in case of alarm.
- 3 m thermally insulated tubing to connect to the transfer dish.
- Easy access control box containing all the electronics: anodized aluminium panel with English written indications.
- English written user manual.
- For 230V - 50Hz connection: 500 W.
- Dimensions (l x w x h): 500 x 400 x 500 mm approx. Weight: 25 kg approx.

AD0005-200 Apparatus

ACCESSORIES

CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF LOSS ON HEATING OF ASPHALTIC COMPOUNDS ASTM D6 - D1754 - IP 145 - EN 12607-2

The apparatus consists of a convection oven manufactured as described in the ASTM E 145 specification (type IB), suitable for temperatures up to 180°C and equipped with a rotating shelf inside. An electronic controlled motor with gear reducer mounted on the top of the oven rotates the shelf at 5.5 rpm.



- Enamel finished steel case, benchtop model.
- Stainless steel interior with plenum fan for air circulation. Internal dimensions 380 x 380 x 380 mm. High efficiency thermal insulation.
- Stainless steel heater.
- Hinged door fitted with double wall window 300 x 200 mm, for internal view.
- Two openings, one on the bottom and one on the top for ventilation.
- Anodized aluminium horizontal rotating shelf 300 mm diameter, capable of supporting nine ASTM D 6 or three ASTM D 1754 sample containers. The shelf is suspended by a vertical shaft, centered with the horizontal interior dimensions and vertically located in the centre of the oven.
- Electronic controlled motor, 1/4 HP with built-in gear reducer that provides to rotate the shelf at a speed of 5.5 rpm.
- Microprocessor controlled thermoregulator with PID action and built-in digital display, 0.1°C accuracy. Probe: Pt100 RTD. Working range: from ambient to 180°C ± 1°C.
- Safety device against overheating.
- Easy access control box containing all the electronics: anodized aluminium panel with English written indications.
- English written user manual with installation instructions.
- For 220V - 50/60 Hz connections: 2200 W.
- Dimensions: 900 x 700 x 900 mm approx. Weight: 110 Kg approx.
- CE marked.

AD0006-100 Apparatus

ACCESSORIES

AD0006-A00 ASTM D 6 container
AD1754-A00 ASTM D 1754 container
AD1754-A01 ASTM D 1754 rotating shelf
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

TA013C-N00 ASTM 13C thermometer (+155°C/+170°C)

Specifications may vary without notice.

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AUTOMATIC SOFTENING POINT TESTER

ASTM D36 - IP 58 - ISO 4625

The softening point is the temperature at which a disk of the sample held within a horizontal ring is forced downward a distance of 25.4 mm under the mass of a steel ball as the sample is heated at a prescribed rate in a water or glycerine bath. The apparatus is a benchtop model which houses the components and a Panel PC with touch screen. A software running under Microsoft Windows Embedded permits to select the test method and the test parameters, run the test automatically, store, retrieve and print data, diagnose and calibrate the instrument offering in the meanwhile all the features of Windows systems such as LAN connectivity. Besides, a unique cooling system, not fitted on other instruments permits to quickly cool down the sample allowing to handle the glassware and to perform a greater number of tests during a day by reducing the dead times between two analysis. The apparatus is suitable also to test coating mixtures and other materials different from bitumen.



- Enamel finished steel case.
- Pyrex beaker 1000 cc capacity for sample heating.
- Electric lifting device.
- Stainless steel sample support for up to two samples.
- Two brass ASTM rings, two centering devices and two steel balls.
- Electric stirrer with variable speed for the liquid bath: it can be excluded by turning off a switch on the control panel.
- Stainless steel heater.
- Brass cooling coil: tap water is used as cooling media and a solenoid valve is automatically opened by the controller when the test finishes.
- 8.4" Panel PC running Microsoft Windows Embedded with colour touch-screen interface.
- Photocell detector for softening point.
- Software characteristics: selection of the media used during the test, introduction of the test parameter through the touch-screen, selectable cooling time, storage of up to 400 test results and possibility of retrieve and print test reports, LAN connectivity, calibration and diagnostic routines.
- English written user manual.
- For 220V - 50Hz connection: 800 W.
- Dimensions (l x w x h): mm 380 x 450 x 720 approx.
- Weight 40 Kg approx.
- CE marked.

AD0036-600 Apparatus

ACCESSORIES

AD0036-A00 Sample support
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD0036-C00 Pyrex beaker
AD0036-C01 ASTM/IP ring
AD0036-C03 Centering ring
AD0036-C04 Steel ball

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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CLEVELAND FLASH POINT TESTER

ASTM D92 - IP 36 - ISO 2592

The apparatus consists of a benchtop steel case supporting the electrical heater, the gas ignitor and the thermometer support.



- Enamel finished benchtop steel case.
- Electric heating plate with stainless steel support.
- Electronic temperature regulator with dial on the front panel.
- Oil cup, brass with insulating handle.
- Gas ignitor, stainless steel, complete with valve and with support that permits to pass the flame over the cup at the correct distance.
- Pt100 probe for temperature acquisition.
- Support for Pt100 probe.
- Digital display for sample temperature, 1°C accuracy.
- English written user manual.
- For 220V - 50/60Hz connections: 500W.
- Dimensions (l x w x h): mm 360 x 360 x 300.
- Weight: 8 kg approximately.
- CE approved.

AD0092-110 Apparatus with digital display, 0.1°C accuracy (complete with PT100 RTD with cable and connector)

ACCESSORIES

CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD0092-C00 Oil cup
AD0092-C01 PT100 probe
TA011C-N00 ASTM 11C thermometer (-6°C/+400°C)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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CLEVELAND AUTOMATIC FLASH AND FIRE POINT TESTER WITH BAROMETRIC CORRECTION OF THE RESULT ASTM D92 - IP 36 - ISO 2592

The apparatus is a benchtop model which houses the mechanical components and a miniature PC with touch screen. A software running under Windows Embedded permits to select the test method and the test parameters, run the test automatically, store, retrieve and print data, diagnose and calibrate the instrument offering in the meanwhile all the features of Windows systems such as LAN connectivity. The instrument is equipped with a sensor for the correction of the results towards atmospheric pressure.



- Enamel finished steel case, benchtop version.
 - Electric heating plate.
 - Brass oil cup with insulating handle (n°1 Pt100 with cable and quick connector supplied with the instrument).
 - Electronically driven mechanism that passes the flame over the cup at the correct intervals for the correct amount of time: electric pilot flames in conjunction with a solenoid valve on the gas line automatically light the flame and relight in case it extinguishes during the test.
 - Second generation ionization flash sensor.
 - Flame extinguisher: automatically extinguishes the flame covering the cup in case a fire is detected or after fire point detection.
 - 8.4" Panel PC running Microsoft Windows Embedded with colour touch-screen interface.
 - Software characteristics: selection of the ASTM/IP test method or setup of up to 40 custom methods, introduction of the test parameters through the touch screen, possibility to change the setpoint during the test, "search" option (for sample with unknown flash point), selectable cooling time, storage of up to 400 test results and possibility to retrieve and print test reports, LAN connectivity, calibration and diagnostic routines. Test range: from ambient to 400°C.
 - LAN connectivity: the apparatus can be connected directly to a hub to become part of the user network: a software supplied with the apparatus permits to retrieve data also from another PC.
 - Flash and fire point detection through ionization sensor: the apparatus also provides an alert if a flash has occurred at the first flame application, warning that the test result is not reliable. The flash point temperature remains shown on the display until the operator's acknowledgement.
- Safety device is provided to stop the analyzer if a flash has not been detected at a temperature 30°C over the preset value or at a temperature of 400°C. This safety device could be excluded to perform "search" tests.
 - English written user manual. Microsoft Windows original license.
 - Dimensions (l x w x h): mm 360 x 460 x 680. Weight: kg 36 approx.
 - For 220V - 50/60Hz connections: 600 W.
 - CE marked.

AD0092-600 Apparatus

ACCESSORIES

AD0092-A00 Printer
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD0092-C00 Oil cup
AD0092-C02 Pt100 probe
AD0092-C03 Electric ignitor

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.

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PENSKY MARTENS FLASH POINT TESTER

ASTM D93 - IP 34 - ISO 2719

The apparatus is a benchtop model which houses the air bath stove and the stirrer motor: differently from other apparatus on the market, our instrument is equipped with a fan that cools down the stove quickly after the test.



- Enamel finished benchtop steel case.
- Cast iron stove, electrically heated with stainless steel external shield.
- Voltage regulator with dial on the front panel.
- Pt100 probe for sample temperature acquisition.
- Digital display for sample temperature, 1°C accuracy.
- Oil cup, brass, complete with filling mark. Insulating handle.
- Lid with flame dipping mechanism.
- Electric stirrer, 100 or 250 rpm: switch to select stirrer switch.
- Electric fan for a quick cooling of the stove at the end of the test.
- English written user manual.
- For 220V - 50/60Hz connections: 900 W.
- Dimensions (l x w x h): mm 240 x 330 x 450. Weight: 10 kg approximately.
- CE approved.

AD0093-120 Apparatus for ASTM D 93 methods A, B and C and equivalent

ACCESSORIES

CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD0093-C00 Oil cup
AD0093-C01 Lid
AD0093-C02 PT100 probe
AD0093-C04 Gas ignitor
TA009C-N00 ASTM 9C thermometer (-5/+110°C)
TA010C-N00 ASTM 10C thermometer (+90/+370°C)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture: accessories etc. should be purchased separately.



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PENSKY-MARTENS AUTOMATIC FLASH POINT TESTER WITH BAROMETRIC CORRECTION OF THE RESULT ASTM D93 (A+B+C) - IP 34 - ISO 2719 (A+B) - DIN 51758

The apparatus is a benchtop model which houses the mechanical components and a miniature PC with touch screen. A software running under Windows Embedded permits to select the test method and the test parameters, run the test automatically, store, retrieve and print data, diagnose and calibrate the instrument offering in the meanwhile all the features of Windows systems such as LAN connectivity. The instrument is equipped with a sensor for barometric pressure for the correction of the results towards atmospheric pressure.



- Enamel finished benchtop steel and aluminium case.
- Cast iron air stove identical to the one reported on the ASTM method.
- Brass oil cup and lid with insulating handle. Jacket for glass-coated Pt100 RTD in the cover (n°1 Pt100 with cable and quick connector supplied with the instrument).
- Electric stirrer that stops during flame dipping. Stirrer speed: 105 rpm for ASTM D 93 method A and C and 250 rpm for method B. Other speeds can be selected for custom methods.
- Automatic flame dipping: provision for gas or electric ignitor.
- Electric heating: measuring range: from ambient to 400°C.
- Electric cooling fan to cool down the stove at the end of the test.
- Ignition system: a slide supporting both ignitor and pilot flame permits a quicker and safer removal of the cover at the end of the test, avoiding to disconnect electric ignitor cables and/or gas ignitor tubes that remain always connected. It is possible to use both gas or electric ignitor: when a gas ignitor is used, the electric one can be used as pilot flame.
- PC based controller with 8.4" color touch-screen interface. IP 65 front protection.
- Software characteristics: selection of the ASTM/IP test method or setup of up to 40 custom methods, setting of the test parameters through the touch screen, possibility to change the setpoint during the test, selectable rapid preheating (in case of sample with high flash point is possible to pre-heat the sample at a higher rate to speed-up the test), "search" option (for sample with unknown flash point), selectable cooling time, storage of up to 800 test results and possibility to retrieve and print test reports, calibration and diagnostic routines.
- LAN connectivity: the apparatus can be connected directly to a hub to become part of the user network: a software supplied with the apparatus permits to retrieve data also from another PC.
- Two USB and one RS-232 serial interfaces.
- Flash point detection through thermocouple sensor: the apparatus also provides an alert if a flash has occurred at the first flame application, warning that the test result is not reliable. The flash point temperature remains shown on the display until the operator's acknowledgement: buzzer to alert the user.
- Safety device is provided to stop the analyzer if a flash has not been detected at a temperature 30°C over the preset value. This safety device could be excluded to perform "search" tests.
- English written user manual. Microsoft Windows Embedded original license.
- Dimensions (l x w x h): mm 280 x 480 x 650. Weight: kg 20 approx.
- For 220V - 50/60Hz connections: 800 W power consumption.
- CE marked.

AD0093-700 Apparatus

ACCESSORIES

AD0093-A00 Printer
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD0093-C50 Oil cup
AD0093-C51 Lid
AD0093-C52 Pt100 probe
AD0093-C03 Electric ignitor
AD0093-C04 Gas ignitor

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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CLOUD AND POUR POINT BENCHTOP CABINET

ASTM D97, D2500, D5771, D5772, D5773, D5853, D5950

IP 15, IP 219, IP 441, IP 444, IP 445, IP 446 - ISO 3015, ISO 3016

This state-of-the-art unit consists of a small benchtop unit with one, two, three, four or five groups of four or eight jackets: each group is equipped with a dedicated Stirling cooling compressor capable to reach -75°C. Electronic controllers permit to keep the temperatures stable with +/- 0,1°C accuracy while a defrosting device maintain the top surface free from condensing humidity and icing.



Four-position unit CAPP-404

- Powder coated compact benchtop case.
- Insulating acrylic cover with insulated lids. Defrosting device that keeps the top surface free from condensing water and icing.
- Aluminium jackets, four or eight for each temperature.
- One dedicated Stirling liquid-helium cooling compressor for each group of jackets: temperature range: from ambient to -75°C.
- One thermometer jacket for each group of jackets.
- Microprocessor thermoregulators with PID action and built-in digital display 0.1°C accuracy. Probe: Pt100 RTD.
- Anodized aluminium control panel with engraved indications and dedicated switches for each temperature.
- Easy access control box.
- English written user's guide and installation instructions.
- For 220 V/50-60 Hz connections. Power consumption 150W (single unit) to 800 W (five-position unit).
- CE marked.
- One, two, three, four and five-block units available with either four or eight jackets for each temperature: custom units upon request.

| | |
|----------|--|
| CAPP-104 | Single unit (one group of four jackets). Dimensions: 420 x 420 x 500 mm, 15 kg approx. |
| CAPP-204 | Twin unit (two groups of four jackets). Dimensions: 560 x 420 x 500 mm, 32 kg approx. |
| CAPP-304 | Three-position unit (three groups of four jackets). Dimensions: 560 x 640 x 500 mm, 62 kg approx. |
| CAPP-404 | Four-position unit (four groups of four jackets). Dimensions: 560 x 640 x 500 mm, 68 kg approx. |
| CAPP-504 | Five-position unit (five groups of four jackets). Dimensions: 1200 x 420 x 500 mm, 80 kg approx. |
| CAPP-108 | Single unit (one group of eight jackets). Dimensions: 480 x 420 x 500 mm, 18 kg approx. |
| CAPP-208 | Twin unit (two groups of eight jackets). Dimensions: 680 x 420 x 500 mm, 42 kg approx. |
| CAPP-308 | Three-position unit (three groups of eight jackets). Dimensions: 680 x 640 x 500 mm, 74 kg approx. |
| CAPP-408 | Four-position unit (four groups of eight jackets). Dimensions: 680 x 640 x 500 mm, 80 kg approx. |
| CAPP-508 | Five-position unit (five groups of eight jackets). Dimensions: 1200 x 420 x 500 mm, 95 kg approx. |

ACCESSORIES

| | |
|--------|--|
| CAL001 | PT100 simulator |
| CAL003 | Official Certificate for Pt100 simulator |

CONSUMABLES

| | |
|------------|---|
| AD0097-C00 | Test jar with sample level graduation |
| AD0097-C01 | Centrally bored cork for test jar |
| AD0097-C02 | Gasket for test jar |
| AD0097-C03 | Disk (to be placed on the bottom of the jacket) |
| TA005C-N00 | ASTM 5C thermometer (-38°C/+50°C) |
| TA006C-N00 | ASTM 6C thermometer (-80°C/+20°C) |

Specifications may vary without notice.

The apparatus is supplied bare without glassware, diffusers, accessories and consumables.



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POUR POINT AUTOMATIC TESTER WITH INTEGRATED COOLING FOR -120°C ASTM D97 - IP 15 - ISO 3016

The apparatus consists of a benchtop case containing the jacket capable to reach -120°C, the cooling compressor, the electronics and supporting the analytical head. An 8.4" touch screen interface on the front permits to control the instrument, enter data, start tests, retrieve, print reports and calibrate the sensors. Two USB ports and one Ethernet connector for connecting to printers and network.



- Enamel finished steel-aluminium case, benchtop version.
- Thermally insulated metal jacket conform to ASTM, IP, DIN and ISO standard methods and capable to reach -120°C.
- One glass sample container conform to ASTM, IP, DIN and ISO standard methods.
- Stirling cooling compressor: working range from +60 to -110°C. CFC/HCFC-free cooling system.
- Micro Thermal detection of pour point. Motorized arm that lifts and tilts the sample container out of the jacket at programmable intervals: mimic ASTM D97. Accuracy of temperature reading: +/- 0.1°C.
- 8.4" touch screen interface that permits to introduce the analytical data, control the test and display the results. Tests can be run acc. to ASTM/ISO methods or to user defined methods. Software includes diagnose and calibration tools with all modern QC routines.
- Two USB and one Ethernet connector for connecting to printers and network.
- English written user manual. CE marked.
- For 220V - 50/60 Hz connections: 400 W.
- Dimensions and weights (l x w x h): 420x500x900 mm. Weight: 25 kg approx.

PPplus Pour point automatic tester

ACCESSORIES

PRN01 Printer

CONSUMABLES

PP000 Sample container

OR3131 O-Ring for sample container

PP021 PT100 for the sample (Pour Point)

PP024 Detection PT100 (two required)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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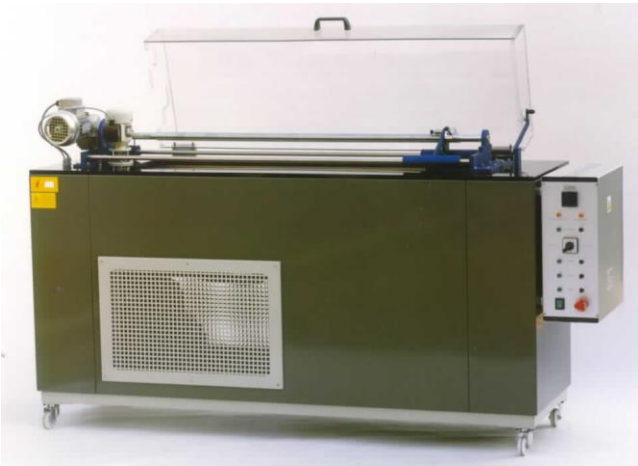
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DUCTILITY MACHINE

ASTM D113, D6084 - IP 32 - ISO 1208

EN 13398, 13589, 13703

The apparatus consists of a constant temperature bath capable to work in the range from -10 to 40 °C (thanks to a built-in cooling compressor) with an electrically powered tractor that pulls apart at a determined speed the two ends of two briquet specimens: the elongation is measured by means of a pointer on the tractor and a graduated scale fixed to the cover.



Apparatus, 1000 mm traction length

- Enamel finished steel case, floor mounted with swivelling castors.
- Stainless steel bath thermally insulated: complete with drain valve.
- Chromium plated brass pump: it provides an adequate stirring of the liquid in the bath.
- Stainless steel heater.
- Microprocessor thermoregulator with PID action: built-in digital display 0.1°C accuracy. Probe: Pt100 RTD. Working range: from -10 to 40°C.
- Safety device against overheating and low level with alarm lamp.
- Built-in hermetic cooling compressor: CFC/HCFC-free gas.
- Acrylic hinged cover: it helps to maintain a constant temperature in the bath providing a clear view of the inside.
- Traction carriage with two-speed motor for 10 and 50 mm/min: the carriage supports 2 briquet molds. Automatic stop safety switch that stops the carriage when the maximum elongation has been reached. Traction length: 100 or 150 cm.
- White screen fixed to the bottom of the bath: it permits a more clear vision of the elongated specimen during the test.
- Easy access control box containing all the electronics: anodized aluminium control panel with english written indications.
- English written user manual with installation instructions.
- For 220V - 50Hz connections: 1800 W.
- Dimensions (l x w x h): mm 1800 x 450 x 1300 approx (1000 mm version) mm 2400 x 450 x 1300 approx (1500 mm version). Weight: 200 kg approx.
- CE marked.

AD0113-110 Apparatus, 1000 mm traction length
AD0113-120 Apparatus, 1500 mm traction length

ACCESSORIES

AD0113-A00 Mold acc. to ASTM D 113 - IP 32 - EN 13398 - IS 1208
AD0113-A01 Brass plate for mold assembling
AD6084-A00 Mold acc. to ASTM D 6084 - EN 13589
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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FORCE - DUCTILITY MACHINE

ASTM D113, D6084 - IP 32 - ISO 1208

EN 13398, 13589, 13703

The apparatus consists of a constant temperature bath capable to work in the range from -10 to 40 °C (thanks to a built-in cooling compressor) with an electrically powered tractor that pulls apart at an selectable speed the two ends of three briquet specimens: a load cell records continuously the force applied to the briquettes and temperature, speed and applied force data are graphically shown on a 8.4" touch screen interface from which it's also possible to control the equipment itself. Data can be stored and printed by simply connecting any USB printer. The instrument does not require an external cooler.



Apparatus, 1000 mm traction length

- Enamel finished steel case, floor mounted with swivelling castors.
- Stainless steel bath, thermally insulated, with drain valve.
- Chromium plated brass pump: it provides an adequate stirring of the liquid in the bath. Switch to turn it off during the test.
- Stainless steel heater.
- Microprocessor thermoregulator with PID action: built-in digital display 0.1°C accuracy. Probe: Pt100 RTD. Working range: from -10 to 40°C.
- Independent safety device against overheating and low level with alarm lamp.
- Built-in hermetic cooling compressor that permits to quickly cool down the liquid in the tank.
- Acrylic hinged cover: it helps to maintain a constant temperature in the bath providing a clear view of the inside.
- Traction carriage with variable speed motor: the carriage supports up to three briquet molds. Automatic stop safety switch that stops the carriage when the maximum elongation has been reached. Traction length: 100 or 150 cm.
- Stainless steel screen fixed to the bottom of the bath: it permits a better vision of the test while in execution.
- Three load cells mechanically connected to the briquet molds. Range: 0 - 200 Newton. Accuracy: 0.1 Newton.
- 8.4" Panel PC with touch screen interface for the control of the equipment. It allows complete control of the apparatus plus data acquisition and storing: temperature and force applied to briquettes are shown in real time and can be saved and printed together with test data such as date, operator etc. Software routines for calibration of temperature, force and elongation sensors.
- Easy access control box containing all the electronics.
- English written user manual with installation instructions.
- For 220V - 50Hz connections: 1800 W.
- Dimensions (l x w x h): mm 1800 x 450 x 1300 approx. (1000 mm version) 2400 x 450 x 1300 approx. (1500 mm version). Weight: 200 kg approx.
- CE marked.

AD0113-610 Apparatus, 1000 mm traction length
AD0113-620 Apparatus, 1500 mm traction length

ACCESSORIES

AD0113-A00 Mold acc. to ASTM D 113 - IP 32 - EN 13398 - IS 1208
AD0113-A01 Brass plate for mold assembling
AD6084-A00 Mold acc. to ASTM D 6084 - EN 13589
PRN01 Printer
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

Specifications may vary without notice.

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APPARATUS FOR THE DETERMINATION OF COPPER CORROSION OF PETROLEUM PRODUCTS ASTM D130 - ISO 2160

The apparatus, suitable for the execution of the test at 40, 50 and at 100°C, consists of a benchtop steel case containing an aluminium block with four jackets for the vessels plus eight jackets for the test tubes. Aluminium blocks permit to eliminate dangerous boiling water baths being also much rugged and reliable.



- Enamel finished steel case, benchtop model.
- Aluminium block with four large jackets for the vessels and eight small jackets for the test tubes.
- Stainless steel coaxial heater. Condensing bath cover that avoid steam leaks from the cover while the bath is used at 100°C.
- Control thermometer jacket.
- Microprocessor thermoregulator with PID action and built-in temperature display 0.1°C accuracy. Probe: PT100 RTD.
- Working range: from 30°C to 150°C. Regulation accuracy $\pm 0.1^\circ\text{C}$.
- Safety device against overheating.
- Easy access control box containing all the electronics: anodized aluminium control panel with English written indications.
- English written user manual.
- For 220V - 50Hz connections: 1500 W.
- CE marked.
- Dimensions: 330 x 330 x 500 mm, 30 kg approx..

AD0130-300 Apparatus for four vessels with aluminium block.

ACCESSORIES

AD0130-A00 Stainless steel corrosion test vessel
AD0130-A02 ASTM Copper Strip Corrosion Standards
AD0130-A03 Strip vise for one copper strip
AD0130-A04 Strip vise for four copper strips
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD0130-C00 Glass test tube $\varnothing 26$
AD0130-C01 O-Ring for vessel
AD0130-C02 Copper strip 75 x 12.5 x 3 mm
AD0130-C03 Silicon carbide paper, 240 grit (pack of 12 sheets)
AD0130-C04 Silicon carbide paper, 150 grit (pack of 12 sheets)
AD0130-C05 Silicon carbide grains (0.5 Kg pack)
AD0130-C06 Viewing test tube
TA012C-N00 ASTM 12C thermometer (-20°C/+102°C)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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DIGITAL PENETROMETER FOR GREASE, WAX AND PETROLATUM ASTM D217, D1321, D1403 - IP 50, IP 310 - ISO 2137

The penetration is the depth, in tenths of a millimetre, that the standard cone penetrates the sample under prescribed conditions of weight, time and temperature.

The apparatus consists of a penetrometer with adjustable head combined with a manual gear that permits a fine adjustment of the cone position right upon the grease sample. The results are showed on a digital display placed, together with an electronic timer, in an independent control box.

Optionally, refrigerated baths of various sizes are available (please require related technical bulletin): by connecting the bath to the transfer dish it is possible to penetrate sample while immersed in water at 25°C or other test temperatures.



- Robust flat aluminium basement with centering device, spirit level and levelling screws.
- Encoder with 50 mm motion for penetration measurement.
- Digital penetration display with 1/10 mm accuracy.
- Electronic programmable timer for penetration time setting.
- Stainless steel cone plunger (47.5 g total weight) complete with electromechanical locking system. By pushing the start button the locking system is enabled: after the preset time (usually 5 seconds) the plunger is automatically locked in the reached position and the distance (penetration) from the top surface of the sample is shown on the display.
- Button for manual handling of the plunger.
- Mirror and spot light.
- Easy access control box which contains all the electronics: anodized aluminium control panel with English written indications.
- English written user manual.
- For 220V - 50Hz connections: 50 W.
- Dimensions (l x w x h): mm 350 x 325 x 350 approx. Weight: kg 15 approx.
- CE marked.

AD0217-200 Apparatus

ACCESSORIES

- AD0217-A50 Standard cone, weight 102,5 g
- AD0217-A51 Brass cone, scale 1/1, weight 102,5 g
- AD0217-A52 Transfer dish
- AD0217-A53 Brass grease cup
- AD1321-A00 Needle for waxes
- AD1321-A01 Brass cylinder 25,4 x 31,8 mm
- AD1403-A00 Copper cone, scale 1/2, weight 22,5 +/- 0,025 g complete with plunger 15 g (ASTM D 1403)
- AD1403-A01 Grease worker, scale 1/2 (ASTM D 1403).
- AD1403-A02 Plastic cone, scale ¼. Complete with plunger. Weight 9,38 +/- 0,025 g (ASTM D 1403)
- AD1403-A03 Grease worker scale 1/4 (ASTM D 1403)



Accessories

Specifications may vary without notice

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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ELECTRICALLY OPERATED GREASE WORKING MACHINE ASTM D217 - IP 50 - ISO 2137

The electrically operated grease working machine consists of a geared motor for 60 strokes/min mounted on a aluminium base with clamps to fix the grease workers. The number of strokes, continuously showed on a display, can be preset to stop the worker after any required number of strokes up to 100,000.



Dual-unit grease working machine

- Cast aluminium base, machine worked and enamel finished. Benchtop version.
- Geared motor unit for 60 strokes/min.
- One (single unit) or two crank flanges, cast iron.
- Programmable counter with six digits.
- One (single unit) or two grease workers.
- One (single unit or two worker plates, 51 holes.
- Wrench for opening and closing of grease workers.
- For 220V - 50/60Hz connections: 600 W.
- English written user manual.
- Dimensions (l x w x h): mm 450 x 450 x 350 approx.
- Weight: kg 30 approx.
- CE marked.
- Single and dual units available.

AD0217-120 Single-unit grease working machine
AD0217-130 Dual-unit grease working machine

ACCESSORIES

AD0217-A00 Worker plate, 51 holes
AD0217-A01 Worker plate, 270 holes (FTMS 313.3)
AD0217-A02 Lip seal for rod
AD0217-A03 Overflow ring
AD0217-A04 Blank cup cover (used when preheating the sample prior to test)



Single-unit grease working machine

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.

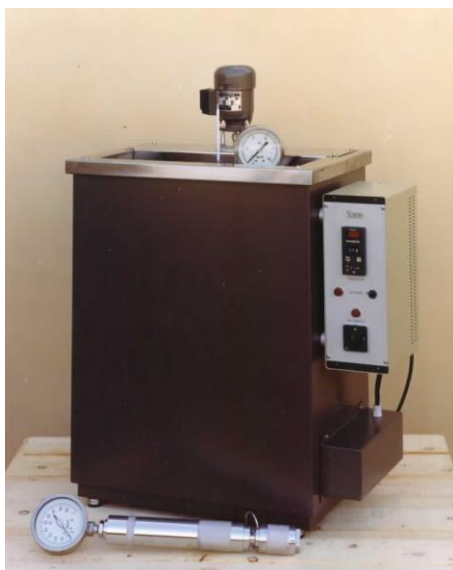
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APPARATUS FOR THE DETERMINATION OF REID VAPOR PRESSURE OF GASOLINE

ASTM D323 - IP 69 - ISO 3007, 4256

The apparatus consists of a floor mounted water bath with a support for three vapour pressure cylinders.



- Enamel finished steel case.
- Stainless steel water bath suitable for the immersion of three vessels. Drain cock on the rear of the apparatus.
- Electric stirrer complete with stainless steel shaft.
- Electronic temperature control (proportional and derivative) obtained using a microprocessor controlled thermoregulator. with built-in digital display 0.1°C accuracy. The probe is a PT100 RTD. Regulation accuracy $\pm 0.1^\circ\text{C}$. Working range: from ambient to 50°C.
- Stainless steel heater.
- Safety device that cuts off the power supply and lights a lamp on the control panel in case of overheating of the liquid in the bath or lowering of the water level.
- Easy access control box placed on the right side of the apparatus containing all the electronics: anodized aluminium control panel with english written indications.
- English written user manual.
- For 220V - 50Hz connections. Power consumption: 1000 W.
- Dimensions (l x w x h): mm 500 x 300 x 850 approx. Weight 50 kg approx.
- CE marked.

AD0323-100 Apparatus

ACCESSORIES

AD0323-A00 Reid V.P. vessel
AD0323-A01 Reid V.P. vessel for sampling under pressure
AD0323-A02 Mercury manometer (for checking gauge)
AD0323-A03 Bourdon type spring gage stainless steel \varnothing 150 mm, range 0/1 Kg/cm² - accuracy 1% f.s. range 0-1 Kg/cm²
AD0323-A04 Bourdon type spring gage stainless steel \varnothing 150 mm, range 0/1 Kg/cm² - accuracy 1% f.s. range 0-2.5 Kg/cm²
AD0323-A05 Bourdon type spring gage stainless steel \varnothing 150 mm, range 0/1 Kg/cm² - accuracy 1% f.s. range 0-4 Kg/cm²
AD0323-A06 Bourdon type spring gage stainless steel \varnothing 150 mm, range 0/1 Kg/cm² - accuracy 1% f.s. range 0-0.4 bar, accuracy 1.6% (membrane type)
AD0323-A07 Gage calibration device
AD0323-A10 Digital gage (scale -1 to +3 bar with possibility to commute to psi, kg/cm² and kPa – +/- 0.1 F.S. accuracy)
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD0323-C00 Pack of 10 O-ring seals to connect air chamber to pressure gage
AD0323-C01 Pack of 10 O-ring seals to connect air to liquid chamber
TA058C-N00 ASTM 58C thermometer (-34°C/+49°C)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF EXISTENT GUM IN FUELS BY JET EVAPORATION ASTM D381 - IP 131 - ISO 6246

The apparatus consists of a benchtop case which houses an aluminium heating block. Two versions are available: one for the "Air Jet" test on gasoline and one for both the "Air and Steam Jet" tests with a built-in steam superheater. Steam generator and air blower are also available.



Apparatus (center) with steam generator (left)
and air blower (right)

- Enamel finished benchtop steel case with robust base to support the heating block.
- Five-place aluminium heating block with steam outlets. Stainless steel steam coils and outlets (removable).
- Stainless steel coaxial heater.
- Stainless steel steam superheater inserted in the case. Complete with regulator.
- High precision flowmeter for the Air Jet test: range from 0 to 12 m³/h.
- Stainless steel gauge for the Steam Jet Test: range from 0 to 6 psi.
- Microprocessor thermoregulator with built-in digital display 1°C accuracy. The probe is a PT100 RTD. Regulation accuracy $\pm 0.5^{\circ}\text{C}$. Working range: from ambient to 300°C.
- Safety device against overheating.
- Easy access control box placed on the right side of the apparatus containing all the electronic and electrical components: anodized aluminium control panel with english written indications. Main and heater switch.
- English written user manual.
- For 220V - 50Hz connections: 3500 W.
- Dimensions (l x w x h): mm 860 x 560 x 840 approx. Weight: 98 Kg.
- CE marked.

AD0381-100 Apparatus for the Air and Steam Jet tests
AD0381-110 Apparatus as above but only for the Air Jet test (without steam superheater). For 220V/50 Hz. Power consumption: 2000 W. Dimensions (l x w x h): mm 750 x 490 x 680 approx. Weight 73 Kg approx.

ACCESSORIES

AD0381-A00 Electric Steam generator (400V/50 Hz, 10 kW)
AD0381-A01 Air Blower (380 V/50 Hz, 0.5 kW)
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD0381-C00 Pyrex glass sample container
TA003C-N00 ASTM 3C thermometer (-5°C/+400°C)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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LOW-TEMPERATURE BATH FOR VISCOSITY DETERMINATION ASTM D445 - IP 71 - ISO 3104

The apparatus consists of a benchtop case hosting the bath and the cooling compressor. One important feature of this apparatus is that the bath is a stainless steel tank (no double-wall glass beaker is used) with a large tempered glass window for a clear view of the inside. The cover of the bath can host two Cannon-Fenske or Ubbelohde capillaries.



Benchtop version

- Enamel finished steel case, benchtop model or floor mounted with swivelling castors.
- Stainless steel bath (with drainage), 12 liters capacity with thermally insulated front window for a clear view of the inside: a second window on the rear of the tank is provided for the built-in light.
- High efficiency thermal insulation.
- Electric stirrer with stainless steel shaft and propeller.
- Thermally insulated bath cover with two holes for Cannon Fenske or Ubbelohde capillary viscometers. Control thermometer jacket placed between the two capillary holes.
- Stainless steel heater: while the compressor runs continuously, the heater, piloted by the electronic thermoregulator, compensates the heat subtracted by the compressor;
- Single stage (double stage for the -65 °C model) air cooled cooling compressor; both single and double stage circuits are filled with CFC/HCFC-free gas.
- High precision electronic thermostat. Probe: PT100 RTD. The regulation accuracy is $\pm 0.01^{\circ}\text{C}$.
- Digital setting of the desired bath temperature with 0.01°C accuracy.
- Safety devices against overheating and low-level.
- For 220V - 50Hz connections: 1500 W power consumption.
- English written user manual.
- Dimensions for the benchtop model (l x w x h): 84 x 64 x 75 cm. Weight: 105 kg. One wooden crate dimensions (l x w x h): 100 x 80 x 100 cm. Shipping weight: 160 kg.
- Dimensions for the floor-mounted model (l x w x h): 75 x 75 x 120 cm. Weight: 180 kg. One wooden crate dimensions (l x w x h): 90 x 90 x 145 cm. Shipping weight: 250 kg.
- All models CE marked. Floor mounted versions also available.

AD0445-200 Apparatus with working range from $+50^{\circ}\text{C}$ down to -25°C
 AD0445-210 Apparatus for temperature from $+50^{\circ}\text{C}$ down to -45°C
 AD0445-220 Apparatus for temperature from $+50^{\circ}\text{C}$ down to -65°C
 Note: add suffix F for floor mounted version

ACCESSORIES

AD0445-A00 Battery chronograph
 AD0445-A01 Portable digital thermometer with PT100 probe
 CAL001 PT100 simulator
 CAL003 Official Certificate for Pt100 simulator
 Portable digital thermometer and glass thermometers can be supplied with official certificate

CONSUMABLES

TA072C-N00 ASTM 72C thermometer ($-19.4^{\circ}\text{C}/-16.6^{\circ}\text{C}$)
 TA073C-N00 ASTM 73C thermometer ($-41.4^{\circ}\text{C}/-38.5^{\circ}\text{C}$)
 TA074C-N00 ASTM 74C thermometer ($-55.4^{\circ}\text{C}/-52.6^{\circ}\text{C}$)
 TA126C-N00 ASTM 126C thermometer ($-27.4^{\circ}\text{C}/-24.6^{\circ}\text{C}$)
 TA127C-N00 ASTM 127C thermometer ($-21.4^{\circ}\text{C}/-18.6^{\circ}\text{C}$)
 TA128C-N00 ASTM 128C thermometer ($-1.4^{\circ}\text{C}/+1.4^{\circ}\text{C}$)
 AD0445-C00 Cannon-Fenske capillary holder
 AD0445-C01 Ubbelohde capillary holder



Floor-mounted version

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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ULTRATHERMOSTAT FOR VISCOSITY DETERMINATION ASTM D445 - IP 71 - ISO 3104

The apparatus consists of a benchtop steel case containing a pyrex jar, 330 mm deep, that permits the use of a wide range of viscometer tubes. Up to six viscometer tubes can be inserted on a turntable that allows to carry in the front of the jar the tube on which the operator is working on.



AD0445-111

- Enamel finished benchtop steel case.
- Borosilicate glass jar 330 mm deep visible through the front window.
- Built-in lighting device placed on the rear side of the case and covered with a frosted glass to avoid dazzling to the operator.
- Steel safety recovery bath capable to contain the liquid in case of breaking of the jar.
- Electric stirrer.
- Six-position turntable built-in the top cover: it permits each viscometer tube to be brought to the front without take it off the bath. Suitable for Cannon-Fenske and Ubbelohde tubes.
- Stainless steel heaters: the auxiliary heater automatically switches off when the selected temperature has been reached.
- Stainless steel cooling coil: when connected to a cold water source it permits to keep temperatures below ambient in the jar.
- Electronic temperature control $\pm 0.01^\circ\text{C}$. Probe: Pt100 RTD.
- Digital setting of the desired bath temperature: setting accuracy 0.01°C . Digital thermometer 0.01°C accuracy.
- Working range: from ambient to 150°C .
- Six synthetic rubber tube holders for Cannon Fenske or Ubbelohde viscometer tubes.
- Six viscometer tube hole stainless steel covers.
- Control thermometer jacket placed on the bath cover.
- Safety devices against overheating and low-level.
- Easy access control box placed on the right side of the apparatus and containing all the electronic and electrical components: aluminium control panel with english written indications.
- English written user manual.
- For 220V - 50Hz connections. Power consumption 1800 W.
- Dimensions (l x w x h): mm 460 x 520 x 900. Weight: 45 kg.
- CE marked.

- AD0445-111 Apparatus with built-in digital thermometer, 0.01°C accuracy
 AD0445-120 Low cost version without surrounding case, recovery bath, rotating cover, digital thermometer and rear light. The apparatus consists of a metal base supporting a Pyrex jar and the control box. The jar cover has five jackets for the capillaries. Working range: from ambient to 120°C . The electronics is the same of the AD0445-111

ACCESSORIES

- AD0445-A00 Battery chronograph
 AD0445-A01 Portable digital thermometer with Pt100 probe
 CAL001 PT100 simulator
 CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

- TAO46C-N00 ASTM 46C thermometer ($+48.6^\circ\text{C}/+51.4^\circ\text{C}$)
 TA120C-N00 ASTM 120C thermometer ($+38.6^\circ\text{C}/+41.4^\circ\text{C}$)
 TA121C-N00 ASTM 121C thermometer ($+98.6^\circ\text{C}/+101.4^\circ\text{C}$)
 AD0445-C00 Cannon-Fenske capillary support
 AD0445-C01 Ubbelohde capillary support



AD0445-120

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF OXIDATION STABILITY OF GASOLINE AND AVIATION FUELS ASTM D525 - ASTM D873 - IP 40 - IP 138 - ISO 7536

The apparatus consists of a benchtop case containing an aluminium block and the electronics: a touch screen interface on the front permits to control the equipment. Temperature and pressure data are graphically shown and can be retrieved or printed: the software comprehends also a diagnostic and calibration routine. Vessels are equipped with a pressure transducer, a safety bursting disk and a quick connect cable for the connection to the instrument: an oxygen line consisting of a flexible tube with valve and gage permits loading operations.



Two-place apparatus

- Enamel finished aluminium and steel case, benchtop version.
- Dry block heater, two, four or six-place.
- 8.4" touch screen color interface that permits to set block temperature, start/stop tests, enter sample data, diagnose and calibrate temperature and pressure sensor. Temperature digital display with 0.1°C accuracy and +/- 0.1°C regulation accuracy connected to Pt100 RTD. Selectable kPa/psi pressure indicators with 0.1 kPa/psi accuracy: high precision electronic pressure sensors 0 to 2000 kPa scale with 0.1% f.s. accuracy.
- Working range: from ambient to 120°C. Regulation accuracy: ± 0.1°C.
- Stainless steel cartridge heaters, SSR controlled.
- Independent safety device against overheating.
- Oxygen distributor with gage and flexible tube with quick connects for rapid filling of the vessels.
- User friendly graphical software complete with diagnose and calibration routine.
- N° 2 USB ports, n° 1 RS-232 interface and n° 1 Ethernet port on the front panel for the connection to printers or laboratory network.
- English written user manual. CE marked.
- For 220V - 50/60Hz connections: 2600 W max.

| | |
|------------|---|
| AD0525-600 | Apparatus for two vessels, aluminium block. Dimensions: 600 x 760 x 770 mm. Weight: 80 kg. |
| AD0525-610 | Apparatus for four vessels, aluminium block. Dimensions: 600 x 760 x 770 mm. Weight: 110kg. |
| AD0525-620 | Apparatus for six vessels, aluminium block. Dimensions: 650 x 760 x 770 mm. Weight: 130kg. |

ACCESSORIES

| | |
|------------|--|
| AD0525-A00 | Oxidation vessel complete with valve, bursting disk, pressure transducer head, cable and connector |
| CAL001 | PT100 simulator |
| CAL003 | Official Certificate for Pt100 simulator |

CONSUMABLES

| | |
|------------|--|
| AD0525-C00 | Gasket for vessel |
| AD0525-C01 | Glass sample container (without cover) |
| AD0525-C02 | Glass cover for sample container |
| TA022C-N00 | ASTM 22C thermometer (+95°C/+103°C) |

Specifications may vary without notice.

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APPARATUS FOR THE DETERMINATION OF DROPPING POINT OF LUBRICATING GREASE ASTM D566 - IP 132 - IP 396 - ISO 2176

The dropping point is the temperature at which the grease passes from a semisolid to a liquid state under the conditions of test. Cooperative testing indicates that in general, dropping points by test method D 566 is in agreement. The test, usually carried on with manually operated analyzers, has been totally automated with this instrument: in fact it provides automatically to regulate the heating rate, beginning with a 5.5°C/min rate and then reducing it to 1°C/min rate.

The apparatus is a benchtop model which houses the components and a Panel PC with touch screen. A software running under Microsoft Windows Embedded permits to select the test method and the test parameters, run the test automatically, store, retrieve and print data, diagnose and calibrate the instrument offering in the meanwhile all the features of Windows systems such as LAN connectivity.

A unique cooling system permits to cool down quickly the heating furnace allowing to start a new test in a few minutes.



- Enamel finished benchtop steel case
- Aluminium heating block with test tube jacket.
- Stainless steel heater.
- Water cooling system: it permits to cool down the heating block at the end of the analysis. The cooling cycle is automatically started when a drop is detected. The cooling time is programmable via PC.
- 8.4" Panel PC running Microsoft Windows Embedded with colour touch-screen interface.
- Software characteristics: selection of the ASTM test method or setup of up to 40 custom methods, introduction of the test parameters through the touch screen, possibility to change the setpoint during the test, selectable cooling time, storage of up to 400 test results and possibility to retrieve and print test reports, LAN connectivity, calibration and diagnostic routines.
- Safety alarm that stops the apparatus in case a temperature 30°C higher than the expected dropping point has been reached or the absolute temperature of 350°C has been reached without any dropping point detection.
- Dropping point detector based on a photocell system.
- For 220V - 50/60Hz connections: 600W.
- English written user manual.
- Dimensions (l x w x h): mm 390 x 450 x 720. Weight: 30 kg approx.
- CE marked.

AD0566-610 Apparatus

ACCESSORIES

CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD0566-C00 Pyrex glass test tube
AD0566-C01 Grease cup

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF RUST PREVENTING CHARACTERISTICS OF INHIBITED MINERAL OIL IN THE PRESENCE OF WATER ASTM D665 - IP 135 - ISO 7120

The apparatus consists of a benchtop case containing a dry block heater or a stainless steel tank and a support for the stirrer motors. Each position is equipped with an independent motor: in this way it is possible to use single positions and leave turned off the motors of the positions not used.



Two-unit apparatus with specimen grinding equipment

- Enamel finished benchtop steel case.
- Stainless steel tank or aluminium block heater with jackets for glassware.
- Electric stirrer in the versions with oil bath.
- Stainless steel heater.
- Electric stirrer motors, one for each position: complete with pulleys, belts and ball bearing mounted spindles.
- Stainless steel shafts: the shafts can be lifted to insert the glassware.
- Microprocessor thermoregulator with PID action and built-in digital display 0.1°C accuracy. Temperature probe: PT100 RTD.
- Safety device against overheating (and low-level in the versions with oil bath).
- Easy access control box containing all the electronics: anodized aluminium control panel with English written indications.
- English written user manual.
- For 220 V/50 Hz connection: 600 W power consumption.
- CE marked.
- Two, four and six-unit apparatus available.
- Glassware, covers, specimens, specimen holders not included.

| | |
|------------|---|
| AD0665-100 | Two-unit apparatus, oil bath. Dimensions (l x w x h): mm 540 x 350 x 720. Weight: 35 kg approx. |
| AD0665-110 | Two-unit apparatus, aluminium block. Dimensions (l x w x h): mm 640 x 350 x 720. Weight: 50 kg approx. |
| AD0665-120 | Four-unit apparatus, oil bath. Dimensions (l x w x h): mm 720 x 350 x 720. Weight: 55 kg approx. |
| AD0665-130 | Four-unit apparatus, aluminium block. Dimensions (l x w x h): mm 720 x 350 x 720. Weight: 60 kg approx. |
| AD0665-140 | Six-unit apparatus, oil bath. Dimensions (l x w x h): mm 900 x 350 x 720. Weight: 75 kg approx. |
| AD0665-150 | Six-unit apparatus, aluminium block. Dimensions (l x w x h): mm 900 x 350 x 720. Weight: 80 kg approx. |

ACCESSORIES

| | |
|------------|--|
| AD0665-A00 | Specimen grinding equipment |
| AD0665-A01 | Blade for heavier than water fluids |
| CAL001 | PT100 simulator |
| CAL003 | Official Certificate for Pt100 simulator |

CONSUMABLES

| | |
|------------|-----------------------------------|
| AD0665-C00 | Steel specimen |
| AD0665-C01 | Perspex specimen holder |
| AD0665-C02 | PTFE specimen holder |
| AD0665-C03 | Pyrex beaker, 400 ml |
| AD0665-C04 | Acrylic cover for beaker |
| AD0665-C05 | PTFE cover |
| TA009C-N00 | ASTM 9C thermometer (-5°C/+110°C) |

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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FOAMING TEST APPARATUS

ASTM D892 - D6082 - IP 146 - ISO 6247

The apparatus consists of a frame supporting one or two Pyrex jars and a control box with all the electronics. Models AD0892-500 and -505 are equipped with variable area flowmeters for labs with a low number of routine tests, -520 and -540 are for continuous use, the latter suitable also for D6082 tests at 150°C. Top covers remains at only 53 cm above the bench making the instrument easy-to-use even to not very tall persons.



AD0892-520

- Powder-coated steel frame supporting one (AD0892-500) or two Pyrex jars (models -505, -520 and 540).
- Anodized aluminum jar covers, each with two holes for the graduate test cylinders: locking clamps to hold the cylinders in position and thermometer jacket for ASTM 12C thermometer.
- One set of rubber stoppers with air tubes (inlet and outlet).
- Electric bath stirrer with shaft and propeller, stainless steel.
- Stainless steel heaters.
- Coils for both air circulation and connection to a chiller in case tap water temperature exceeds 20°C.
- AD0892-500 and -505 come with variable area flowmeters with 0-120 ml/min f.s. and 5% f.s. precision, -520 and -540 come with electronic mass flow controllers with 0-230 ml/min scale and 0.1% f.s. precision.
- AD0892-500 and -505 come with a traditional aluminium control panel with English written indications while models AD0892-520 and -540 are equipped with an 8.4" Panel PC as user interface. Calibration, diagnostic and data storage routines.
- Temperature measuring elements: PT100 RTD. Operating range: from ambient to 100°C with +/- 0.1°C accuracy for models -500, -505 and -520 and ambient to 160°C for -540.
- One Ethernet and two USB ports on model AD0892-520 and -540.
- Safety transparent shield surrounding 93.5/150°C bath.
- Safety devices against overheating and low level.
- Easy access control box.
- English written user's guide and installation instructions.
- For 220V / 50Hz connections. Power consumption 1800 W (AD0892-500 and 2500 W (-505, -520 and -540)
- Dimensions (l x w x h): mm 550 x 460 x 550 (top cover) and 720 mm (top of stirring motor), 30 kg (AD0892-500) mm 1050 x 460 x 550 (top cover) and 720 (top of stirring motor), kg 55 (AD0892-505 and 520), mm 1250 x 460 x 720, kg 65 (AD0892-540).
- CE marked.

| | |
|------------|---|
| AD0892-500 | Apparatus, single-unit with variable area flowmeters |
| AD0892-505 | Apparatus, twin-unit with variable area flowmeters |
| AD0892-520 | Apparatus, twin-unit with touch-screen interface |
| AD0892-540 | Apparatus, twin unit with touch screen interface suitable for ASTM D6082 tests at 150°C |

ACCESSORIES

| | |
|------------|---|
| AD0892-A20 | Electronic air volume counter (replaces wet test meter) |
| AD0892-A21 | Certificate for the volume counter |
| AD0892-A10 | Air pump |
| AD0892-A03 | Glass drying tower |
| CAL001 | PT100 simulator |
| CAL003 | Official Certificate for Pt100 simulator |

CONSUMABLES

| | |
|------------|---|
| AD0892-C00 | Graduate pyrex glass cylinder |
| AD0892-C01 | Rubber stopper with air inlet and outlet |
| AD0892-C02 | Norton certified spherical Alundum gas diffuser stone |
| AD0892-C03 | Mott certified stainless steel cylindrical gas diffuser |
| TA012C-N00 | ASTM 12C thermometer (-20°C/+102°C) |

Specifications may vary without notice.

The apparatus is supplied bare without glassware (if any), accessories and consumables.

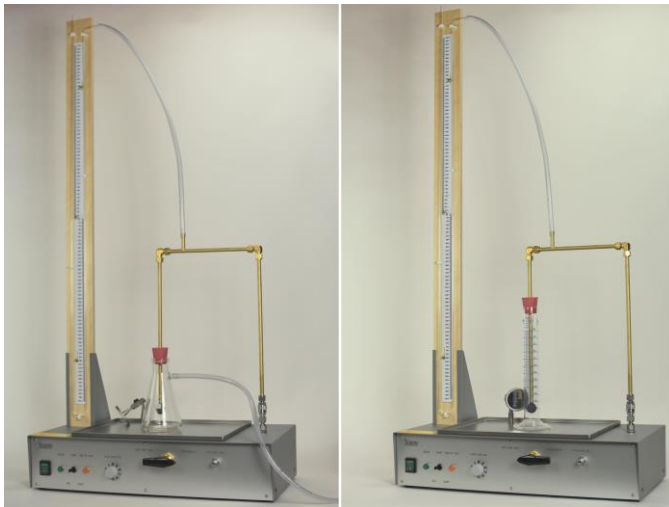


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DIFFUSER CALIBRATION APPARATUS ASTM D892 - D6082

The apparatus consists of a benchtop frame supporting the 1000 mm U-tube manometer, a regulating valve, 1 m of 8 mm inside diameter brass tubing, a 250 ml cylinder and a 500 ml filtering flask with rubber stopper and outlet tube. The apparatus can be used to check both cylindrical (Mott) and spherical (Norton) diffusers for maximum pore diameter and permeability.



- Enamel finished benchtop frame.
- Maximum pore diameter determination assembly consisting in a electrically powered piston that permits to raise the pressure at the prescribed rate of 50 Pa/min inside the diffuser when immersed in water or propan-2-ol. This device has been adopted since it is practically impossible to control the correct increase of pressure with a valve (50 mm of water column/min is a very small increase).
- One precision regulating valve for the permeability test. It permits to regulate the air pressure at 250 Pa in the diffuser circuit when the diffuser is connected to the wet test meter.
- One 1000 ml U-tube manometer mounted on a wooden support with adjustable mm scale.
- One 250 ml graduate cylinder.
- One 500 ml filtering flask with rubber stopper and air outlet tube . Hose connector for connection to the wet test meter.
- English written user manual.
- CE marked.
- For 220V / 50Hz connection. Power consumption: 100 W approx.
- Dimensions (l x w x h): 500 x 300 x 1200 mm approx. Weight: 10 kg approx.
- Wet test meter not included.

AD0892-300 Apparatus

ACCESSORIES

AD0892-A20 Electronic air volume counter (replaces wet test meter)
AD0892-A21 Certificate for the volume counter

CONSUMABLES

AD0892-C61 250 ml graduate cylinder
AD0892-C62 250 ml filtering flask

Specifications may vary without notice.

The apparatus is supplied bare without glassware, diffusers, accessories and consumables.



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APPARATUS FOR THE DETERMINATION OF OXIDATION STABILITY OF LUBRICATING GREASES BY THE OXYGEN PRESSURE VESSEL METHOD ASTM D942 - IP 142

The apparatus consists of a benchtop case containing an aluminium block and the electronics: a touch screen interface on the front permits to control the equipment. Temperature and pressure data are graphically shown and can be retrieved or printed: the software comprehends also a diagnostic and calibration routine. Vessels are equipped with a pressure transducer and a quick connect cable for the connection to the instrument: an oxygen line consisting of a flexible tube with valve and gage permits loading operations.



AD0942-610

- Enamel finished aluminium and steel case, benchtop version.
- Dry block heater, two, four or six-place.
- 8.4" touch screen color interface that permits to set block temperature, start/stop tests, enter sample data, diagnose and calibrate temperature and pressure sensor. Temperature digital display with 0.1°C accuracy and +/- 0.1°C regulation accuracy connected to Pt100 RTD. Selectable kPa/psi pressure indicators with 0.1 kPa/psi accuracy: high precision electronic pressure sensors 0 to 2000 kPa scale with 0.1% f.s. accuracy.
- Working range: from ambient to 120°C. Regulation accuracy: $\pm 0.1^\circ\text{C}$.
- Stainless steel cartridge heaters, SSR controlled.
- Independent safety device against overheating.
- Oxygen distributor with gage and flexible tube with quick connects for rapid filling of the vessels.
- User friendly graphical software complete with diagnose and calibration routine.
- N° 2 USB ports, n° 1 RS-232 interface and n° 1 Ethernet port on the front panel for the connection to printers or laboratory network.
- English written user manual. CE marked.
- For 220V - 50/60Hz connections: 2600 W max power consumption.

| | |
|------------|---|
| AD0942-600 | Apparatus for two vessels, aluminium block. Dimensions: 600 x 760 x 770 mm. Weight: 80 kg. |
| AD0942-610 | Apparatus for four vessels, aluminium block. Dimensions: 600 x 760 x 770 mm. Weight: 110kg. |
| AD0942-620 | Apparatus for six vessels, aluminium block. Dimensions: 650 x 760 x 770 mm. Weight: 130kg. |

ACCESSORIES

| | |
|------------|---|
| AD0942-A00 | Oxidation vessel complete with valve, bursting disk, pressure transducer head cable and connector |
| AD0942-A01 | Stainless steel dish holder |
| PRN01 | Printer |
| CAL001 | PT100 simulator |
| CAL003 | Official Certificate for Pt100 simulator |

CONSUMABLES

| | |
|------------|-------------------------------------|
| AD0942-C00 | Gasket for vessel |
| AD0942-C01 | Glass sample container |
| TA022C-N00 | ASTM 22C thermometer (+95°C/+103°C) |

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF OXIDATION CHARACTERISTICS OF INHIBITED MINERAL OILS ASTM D943 - IP 157 - ISO 4263, 12205

The apparatus consists of a benchtop steel case containing an aluminium thermostatic block with a series of jackets for the introduction of the oxidation cells and a water dispenser for the condenser refrigeration: both units with variable area flowmeters or with electronic mass-flow controllers available.



AD0943-304

- Enamel finished benchtop steel case.
- Aluminium block bath with wells for test tubes, 48 mm diameter and 365 mm deep.
- Stainless steel electric heaters.
- Microprocessor thermoregulator with built-in temperature display, 0.1°C accuracy on versions -1xx or 8.4" Panel PC running Microsoft Windows Embedded with colour touch-screen interface on versions -3xx.
- Probe: PT100 RTD. Regulation accuracy $\pm 0.1^\circ\text{C}$. Working range: from ambient to 150 °C.
- Safety device against overheating.
- Easy access control box containing all the electronics and electrical parts. Aluminium control panel with english written indications.
- Oxygen inlet manifold with variable area flowmeters (-1xx) or high precision mass flow controllers (-3xx), 0-4 l/h.
- Water inlet manifold with valve connections for the mushroom condensers.
- Water outlet manifold.
- n° 1 thermometer jacket.
- English written user manual. CE marked.
- For connection to 220V - 50/60Hz. Power consumption 1800 W (4 and 8-position units), 2500 W (12-position unit).
- Four, eight and twelve-place units available. Six-place unit on request.

| | |
|------------|--|
| AD0943-104 | Four-place unit with variable area flowmeters. Dimensions (l x w x h): 700 x 600 x 1000 mm. Weight: 90 kg |
| AD0943-108 | Eight-place unit with variable area flowmeters. Dimensions (l x w x h): 850 x 700 x 1000 mm. Weight: 130 kg |
| AD0943-112 | Twelve-place unit with variable area flowmeters. Dimensions (l x w x h): 110 x 700 x 1000 mm. Weight: 160 kg |
| AD0943-304 | Four-place unit with mass-flow controllers. Dimensions (l x w x h): 640 x 430 x 1000 mm. Weight: 90 kg |
| AD0943-308 | Eight-place unit with mass-flow controllers. Dimensions (l x w x h): 640 x 490 x 1000 mm. Weight: 130 kg |
| AD0943-312 | Twelve-place unit with mass-flow controllers. Dimensions (l x w x h): 760 x 430 x 1000 mm. Weight: 160 kg |

ACCESSORIES

| | |
|------------|--|
| AD0943-A00 | Winding fixture |
| CAL001 | PT100 simulator |
| CAL003 | Official Certificate for Pt100 simulator |

CONSUMABLES

| | |
|------------|-------------------------------------|
| AD0943-C00 | Test tube |
| AD0943-C01 | Mushroom condenser |
| AD0943-C02 | Oxygen delivery tube |
| AD0943-C03 | Cell thermometer |
| AD0943-C04 | Syringe sampling tube |
| AD0943-C05 | Methacrylate sampling tube holder |
| AD0943-C06 | Sampling tube spacer |
| AD0943-C07 | Catalyst coil |
| TA040C-N00 | ASTM 40C thermometer (+72°C/+126°C) |

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF EVAPORATION LOSS OF GREASES AND OILS ASTM D972 - IP 183

The apparatus consists of a case containing a stainless steel bath and supporting precision mass flow controllers with digital display and knob for flow adjustment. The bath is equipped with a stainless steel cover with holes for the introduction of the evaporation cells.



AD0972-204

- Enamel finished benchtop steel case.
- Stainless steel bath with drain valve. High efficiency thermal insulation.
- Electric stirrer with stainless steel shaft and propeller.
- Stainless steel heaters.
- Stainless steel cell support.
- High precision mass flow controllers with knob and digital display, complete with calibration certificate. For a flow rate of 2 l/min.
- Air filter containing glass wool.
- Microprocessor thermoregulator with PID action: built-in digital thermometer 0.1°C accuracy. Probe: Pt100 RTD. Test range: from ambient to 220°C.
- Safety device against overheating and low-level.
- English written user manual.
- For 220 V/50 Hz connection. Power consumption 2000 W.
- Dimensions (l x w x h): mm 800 x 400 x 700 approx. Weight: kg 45 approx. (four-unit version).
- CE marked.
- Two and four place units available

AD0972-202 Two-place unit
AD0972-204 Four-place unit

ACCESSORIES

AD0972-A00 Stainless steel cell with copper coil for air heating
AD0972-A01 Test cup for oil
AD0972-A02 Test cup for grease
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

TA022C-N00 ASTM 22C thermometer (+95°C/+103°C)
TA067C-N00 ASTM 67C thermometer (+95°C/+155°C)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF FREEZING POINT OF ANTIFREEZE LIQUIDS ASTM D1177

The sole instrument on the market equipped with a seeding jacket where it's possible to cool down a small portion of sample for the seeding operation (saving the money for expensive cumbersome criocoolers) consists of a benchtop case containing the cooling compressor, the jacket, the electronics and supporting the analytical head. An 8.4" touch screen interface on the front permits to control the instrument, retrieve, print reports and calibrate the sensors. Two USB ports and one Ethernet connector allows the user to connect to printers or network.



- Enamel finished steel-aluminium case, benchtop version.
- Thermally insulated jacket reproducing the dimensions of the Dewar flask capable to reach -100°C approx. in about 30 min equipped with a patent-pending integrated cooling system: no need of external cooler or cryostat.
- One 75 ml glass sample container with volume conform to ASTM D1177.
- Seeding jacket: a small jacket capable to freeze a small portion of sample for seeding located aside the sample jacket. Complete with one glass tube and one wire with hook.
- Electric stirrer 75 rpm complete with s.s. stirring coil and mechanism.
- Thermal detection of freezing point through Pt100 RTD: sample is cooled and a buzzer alerts the user when seeding temperature is reached. Once freezing point is detected, sample is cooled furthermore for an adjustable interval.
- Temperature sensor: Pt100 RTD. Accuracy of temperature reading: $\pm 0.1^{\circ}\text{C}$.
- Working range: from $+60$ to -110°C .
- 8.4 inches touch screen interface that permits to introduce the analytical data, control the test and display the results. Tests can be run acc. to ASTM/IP/ISO/DIN methods or to user defined methods. Software includes diagnose and calibration tools with all modern QC routines.
- Two USB and one Ethernet connector for connecting to printers and network.
- For 220V - 50/60Hz connections: 400 W.
- Dimensions (l x w x h): 420 x 500 x 800 mm. Weight: 25 kg. approx.

AFPplus Freezing point automatic tester (for engine coolants)

ACCESSORIES

PRN01 Printer
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD1177-C00 Glass sample container, 75 ml
AD1177-C01 Seeding tube

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF THE LEAKAGE TENDENCIES OF AUTOMOTIVE WHEEL BEARING GREASES ASTM D1263

The apparatus consists of a benchtop case containing all the electronics and supporting the front-wheel hub and spindle assembly encased in a thermostatically controlled air bath. The motor is placed in the rear and rotates the spindle at 660 rpm through a V-belt drive.



- Enamel finished benchtop steel case. Hinged shield with thermal insulation. Safety switch that stops the motor and the heating when the shield is open.
- Stainless steel bearing spindle fixed to the body with insulating spacers. Jacket for ASTM 7C spindle thermometer.
- Stainless steel hub with aluminium driven pulley and leakage collector.
- One Timken n° 15118 bearing with n° 15250 cup.
- One Timken n° 9074 bearing with n° 9196 cup.
- 1/3 HP electric motor with metal shaft extension, drive pulley and fan built exactly as prescribed by the ASTM D 1263 test method. The motor is mounted on an adjustable support to permit tightening the pulley.
- Stainless steel heaters.
- Microprocessor thermostat with PID action and built-in digital display 1°C accuracy. Probe: Pt100 RTD.
- Working range: from ambient to 150 °C. Regulation accuracy: +/- 1°C.
- Safety devices against overheating.
- Digital timer for the operation time regulation: it stops the spindle automatically after the preset time has elapsed.
- For 220 V/50 Hz connections: 1700 W power consumption.
- English written user manual.
- CE marked.
- Dimensions (l x w x h): 550 x 450 x 380 mm. Weight: 70 kg.

AD1263-100 Apparatus
AD1263-110 Apparatus with digital display for the spindle temperature

ACCESSORIES

AD1263-A00 Torque wrench
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD1263-C00 Large bearing
AD1263-C01 Small bearing
TA007C-N00 ASTM 7C thermometer (-2°C/+300°C)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF WATER WASHOUT CHARACTERISTICS OF LUBRICATING GREASE ASTM D1264

The apparatus consists of a benchtop case supporting the motor, the bath, the pump and the water pipes. All the electronics is contained in a control box fixed to the instrument body.



- Enamel finished benchtop steel case.
- Test bearing housing and shield manufactured exactly as specified in the method.
- Stainless steel reservoir complete with inlet and outlet lines, aluminium housing mount, chromium plated brass circulating pump, 1/4 HP electric driving motor with belts;
- Stainless steel cartridge heater.
- Microprocessor thermoregulator with built-in digital display 0.1°C accuracy. Probe: Pt100 RTD. Working range: from ambient to 100°C. Suitable for working at $37.8 \pm 0.1^\circ\text{C}$ and $79 \pm 0.1^\circ\text{C}$;
- Motor and pulleys for operation at 600 ± 30 rpm;
- The motor and pulley arrangement permits to start the water pump without starting the bearing for water flow calibration;
- Regulation and by-pass valve to regulate the flow at 5 ± 0.5 ml/sec through a 1 mm capillary;
- English written user manual.
- For 220 V/50 Hz connections: 600 W power consumption;
- Dimensions: mm 400 x 400 x 600. Weight: 25 kg.
- CE marked.

AD1264-100 Apparatus

ACCESSORIES

CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD1264-C00 Test bearing type 6204
TA015C-N00 ASTM 34C thermometer ($+25^\circ\text{C}/+105^\circ\text{C}$)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF VAPOR PRESSURE OF LIQUIFIED PETROLEUM GASES ASTM D1267 - IP 161 - ISO 3007, 4256

The apparatus consists of a floor mounted water bath with a support for three vapour pressure cylinders.



- Enamel finished steel case.
- Stainless steel water bath suitable for the immersion of three vessels. Drain cock on the rear of the apparatus.
- Electric stirrer.
- Stainless steel heater.
- Microprocessor thermoregulator with built-in digital display 0.1°C accuracy. The probe is a PT100 RTD. Regulation accuracy $\pm 0.1^\circ\text{C}$. Working range: from ambient to 80°C.
- Safety device that cuts off the power supply and lights a lamp on the control panel in case of overheating of the liquid in the bath or lowering of the water level.
- Easy access control box placed on the right side of the apparatus containing all the electronics: anodized aluminium control panel with english written indications.
- English written user manual.
- For 220 V/50 Hz connections. Power consumption: 1000 W.
- Dimensions (l x w x h): mm 500 x 300 x 850 approx. Weight 50 kg approx.
- CE marked.

AD1267-100 Apparatus

ACCESSORIES

AD1267-A00 LPG vapor pressure cylinder
AD1267-A01 33 1/3% lower chamber
AD1267-A02 Pressure gage Bourdon type spring gage \varnothing 114 mm, range 0/100 psi
AD1267-A03 As above, range 0/300 psi
AD1267-A04 As above, range 0/600 psi
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD1267-C00 Gasket (to connect air chamber to pressure gage). Pack of 10
AD1267-C01 Gasket (to connect upper chamber to straight through valve). Pack of 20
AD1267-C02 Gasket (to connect lower chamber to straight through valve). Pack of 20
TA018C-N00 ASTM 18C thermometer (+34/+42°C)
TA065C-N00 ASTM 65C thermometer (+50/+80°C)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE CORROSION TEST FOR ENGINE COOLANTS IN GLASSWARE ASTM D1384

The apparatus consists of a benchtop case hosting the solid block heater capable to maintain accurately test temperatures without all the safety issues related to boiling water/hot oil, a rear frame with a manifold for the cooling water and a series of supports for the condensers. Available with variable area flowmeters or mass-flow controllers and touch-screen interface.



AD1384-106

- Enamel finished benchtop steel case.
- Stainless steel oil bath with cover with holes for the glassware. Optionally, aluminium block heater with wells for the glassware.
- Electric stirrer (only in the water/oil bath versions).
- Stainless steel electric heater.
- Glassware support with pincers to hold the condensers vertical. Removable stainless steel cover.
- Manifold with water outlets with regulating valve. A second manifold is provided for connection to the outlets of the condensers.
- Electronic thermoregulator with PID action and built-in digital display. Probe: Pt100 RTD.
- Working range: from ambient to 160°C.
- Safety device against overheating.
- Dedicated variable area flowmeters, 0-120 ml/min scale 5% accuracy (models -1xx) or high precision mass flow controllers 0 to 120 ml/min controllable flow (models 3xx), 1% accuracy with 8.4" touch-screen interface. Hose connectors at outlets, inlet connected to a manifold.
- English written user manual.
- For 220 V/50 Hz connections. Power consumption: 1500-2000 W.
- CE marked.
- Three and six-place apparatus available. For low-boiling accessories please request separate quotation.

| | |
|------------|---|
| AD1384-103 | Three-place apparatus, variable area flowmeters. Dimensions: 600 x 420 x 880 mm, 80 kg. |
| AD1384-106 | Six-place apparatus, variable area flowmeters. Dimensions: 850 x 420 x 880 mm, 125 kg. |
| AD1384-303 | Three-place apparatus, mass-flow controllers. Dimensions: 600 x 420 x 880 mm, 80 kg. |
| AD1384-306 | Six-place apparatus, mass-flow controllers. Dimensions: 850 x 420 x 880 mm, 125 kg. |

ACCESSORIES

| | |
|------------|--|
| AD1384-A99 | Specimen bundle |
| CAL001 | PT100 simulator |
| CAL003 | Official Certificate for Pt100 simulator |

CONSUMABLES

| | |
|------------|------------------------------------|
| AD1384-C00 | Container, 1000 ml with cover |
| AD1384-C01 | Condenser, glass, 400 mm length |
| AD1384-C02 | Aerator tube |
| TA001C-N00 | ASTM 1C thermometer (-20°C/+150°C) |

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF WATER SEPARABILITY OF PETROLEUM OILS AND SYNTHETIC FLUIDS ASTM D1401 - ISO 6614

The apparatus consists of a steel/aluminium box supporting the jar and an electric lift that permits to move the stirrer blade up and down in the test cylinder. The speed of the stirrer is continuously showed on a digital tachometer.



- Borosilicate glass jar, 250 mm deep.
- Anodized aluminium cover with six-position turntable for the insertion of the cylinders containing the samples: a positioning device permits to locate the cylinders exactly below the blade of the sample stirrer, avoiding breakings due to positioning mistakes.
- Electric lifting device for the stirrer support.
- Stainless steel heater.
- Electric sample stirrer: coaxial CC motor, no gears or belts.
- Digital tachometer which continuously shows the stirrer speed.
- Electronic timer which automatically stops the sample stirrer after 5 minutes stirring.
- LED lighting of the jar.
- Microprocessor controlled thermoregulator, PID action with built-in digital display 0.1°C accuracy. Probe: PT100 RTD. Regulation accuracy $\pm 0.1^{\circ}\text{C}$.
- Working range: from ambient to 100°C.
- Safety devices against overheating and low-level.
- Easy access control box containing all the electronics: anodized aluminium control panel with english written indications.
- English written user manual.
- For 220 V/50 Hz connections. Power consumption 800 W.
- Dimensions (l x w x h): mm 350 x 610 x 940 approx. Weight: kg 40 approx.
- CE marked.

AD1401-200 Apparatus

ACCESSORIES

CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD1401-C00 Graduate cylinder, Pyrex glass
TA009C-N00 ASTM 9C thermometer (-5°C/+110°C)
TA019C-N00 ASTM 19C thermometer (+49°C/+57°C)
TA021C-N00 ASTM 21C thermometer (+79°C/+87°C)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.

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AUTOMATIC APPARATUS FOR THE DETERMINATION OF WATER SEPARABILITY OF PETROLEUM OILS AND SYNTHETIC FLUIDS ASTM D1401 - ISO 6614

The first automatic equipment with four independent positions on the market consists of a benchtop steel case containing the water bath, the camera, the electronics and supporting the paddles lifting mechanism. A Panel PC with 12" touch screen interface on the front permits to enter data and manage testing procedure showing separation process in real time: the instrument can run up to four tests independently and simultaneously and can be linked to LIMS or printers by means of two USB and the Ethernet port.



- Compact enamel-finished benchtop steel case.
- Anodized aluminium top plate.
- Insulating bath cover with four jackets for 100 ml graduated sample cylinders and four jackets for sample preheating.
- Jacket for ASTM 19C/21C control thermometer.
- Stainless steel heating bath with transparent glass windows: for use with distilled water. Working range: from ambient to 90°C, +/- 0.1°C regulation accuracy.
- High-efficiency LED backlight.
- Four sample stirrers mounted on lifting mechanisms that permit to run each test independently. Electronically controlled coaxial motors (no more belts).
- Paddle stirrers complete with shafts: brass chucks and nuts for a secure locking in working position.
- Built-in CMOS camera for image acquisition.
- 12" Panel PC with touch screen interface. Emergency switch on the front panel.
- Windows Embedded-based software that permits to run the tests, calibrate, diagnose, save data and print test reports. Tests can be run in automatic mode with the camera following the separation and automatically calculating the water, oil and emulsion volumes or manually with calculation to be done by the operator.
- Test reports are saved in the internal SSD and contains sample and operator data in addition to pictures of the sample taken every 5 minutes: for tests performed in automatic mode the report contains also the volumes of water, oil and emulsion automatically calculated every 5 minutes.
- Safety devices against overheating and low-level.
- One Ethernet and two USB ports.
- English written user manual.
- For 220 V/50-60 Hz connection, 1200 W.
- Dimensions (l x w x h): mm 450 x 660 x 1160 approx. Weight: kg 80 approx.
- CE marked.

AD1401-500 Apparatus

ACCESSORIES

CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD1401-C50 Graduate cylinder, Pyrex glass
AD1401-S14 Stirrer paddle
TA019C-N00 ASTM 19C thermometer (+49°C/+57°C)
TA021C-N00 ASTM 21C thermometer (+79°C/+87°C)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture: accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF DENSITY OR RELATIVE DENSITY OF LIGHT HYDROCARBONS BY PRESSURE THERMOHYDROMETER ASTM D1657 - IP 235 - ISO 3993

The apparatus consists of a floor mounted case containing a stainless steel tank with two openings for the insertion of the pressure thermohydrometer cylinders and a built-in cooling compressor located in the lower part. The bath can reach temperatures down to 10°C.



- Enamel finished steel case, floor mounted with swivelling castors.
- Stainless steel tank with drain valve, thermally insulated. Two 210 mm diameter openings on the top cover for the insertion of pressure thermohydrometer cylinders.
- Electric bath stirrer.
- Stainless steel heater.
- Microprocessor thermoregulator with PID action: built-in digital display 0.1°C accuracy. Probe: Pt100 RTD. Working range: from 10 to 50 °C.
- Safety device against overheating and low level with alarm lamp.
- Built-in single-stage hermetic cooling compressor: circuit filled with CFC/HCFC-free gas.
- Easy access control box containing all the electronics: anodized aluminium control panel with english written indications.
- English written user manual with installation instructions.
- For 220 V/50 Hz connections: 2500 W power consumption.
- Dimensions (l x w x h): mm 680 x 730 x 1100 approx. Weight: 120 kg approx. One crate 900 x 900 x 1350 mm, 180 kg approx. weight.
- CE marked.

AD1657-100 Apparatus

ACCESSORIES

AD1657-A00 Pressure hydrometer cylinder
AD1657-A01 As above but with glass cylinder
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD1657-C00 Thermohydrometer
AD1657-C01 Set of two gaskets
AD1657-C02 Transparent plastic cylinder
AD1657-C03 Transparent Pyrex glass cylinder
TA012C-N00 ASTM 12C thermometer (-20°C/+102°C)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.

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APPARATUS FOR THE DETERMINATION OF RUST PROTECTION BY METAL PRESERVATIVES IN THE HUMIDITY CABINET ASTM D1748 - IP 366

The apparatus consists of a floor mounted case containing a stainless steel tank and the rotating mechanism. A control box located on the right side contains all the electronics.



- Enamel finished case, floor mounted version with swivelling castors.
- Stainless steel tank complete with drain tube and valve.
- Device for automatic adjustment of the water level.
- Stainless steel heaters: dedicated switch for the auxiliary heater.
- Ring diffuser complete with 20 Alundum air diffuser stones.
- Air supply line consisting in trap and filter, pressure regulator, 0-400 kPa gage, high precision 250 mm scale flowmeter (scale 0-1200 l/h) and glass tower and the air pump.
- Stainless steel rotating stage for 0.33 rpm speed. Externally mounted gear reduced motor.
- Drip pan mounted under the rotating stage to catch oil and condensed water dripping from the panels.
- Stainless steel cover with two layers of desized cotton cloth.
- Microprocessor controlled thermoregulator with built-in digital thermometer 0.1 °C accuracy. The probe is a PT100 RTD. Regulation accuracy ± 0.5 °C at the working temperature of 48.9 °C.
- Safety device against overheating and low-level.
- English written user manual.
- For 220 V/50 Hz connections. Power consumption: 1500 W.
- Dimensions: mm 850 x 750 x 1100. Weight: 140 kg approx.
- CE marked.

AD1748-100 Apparatus

ACCESSORIES

CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD1748-C00 Set of 33 steel specimens
AD1748-C01 Blank specimen (dummy panel)
AD1748-C02 Silicon carbide paper, 240 grit (pack of 12 sheets)
AD1748-C03 Set of 20 Alundum air diffusers
AD1748-C04 Airplane cloth
TA009C-N00 ASTM 9C thermometer (-5°C/+110°C)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF ROLL STABILITY OF LUBRICATING GREASE ASTM D1831

The apparatus consists of a benchtop case with a hinged shield that covers the rolling mechanism vane. Two and four-cylinder units are available.



Two-cylinder apparatus

- Enamel finished benchtop steel case.
- Upper vane hosting the rolling mechanism ball bearing mounted. Aluminium bearing supports.
- Thermally insulated hinged cover with safety switch that stops the roller motor, fan and heater when opened.
- Microprocessor thermoregulator with built-in digital display 0.1°C accuracy. Probe: Pt100 RTD. Working range: from ambient to 100 +/- 1°C.
- Safety device against overheating.
- Stainless steel heater.
- Fan for air circulation inside the cylinder vane.
- Set of stainless steel cylinders with threaded caps and 5 kg brass roller weights.
- Electronic timer that stops the test at the end of the preset time. Buzzer that sounds to alert that test is completed.
- Electronically driven motor for operation at 10 and 165 rpm. Thermally protected against overload.
- Control box containing all the electronics.
- English written user manual.
- For 220 V/50 Hz connections: 1000 W power consumption.
- Four-cylinder apparatus also available.
- CE marked.

AD1831-100 Two-cylinder apparatus. Dimensions (l x w x h): mm 500 x 400 x 400. Weight: 55 kg
AD1831-110 Four-cylinder apparatus. Dimensions (l x w x h): mm 500 x 650 x 400. Weight: 80 kg

ACCESSORIES

AD1831-A00 Cylinder with threaded caps
AD1831-A01 Roller weight, 5 kg
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF COPPER STRIP CORROSION BY LIQUEFIED PETROLEUM (LP) GASES ASTM D1838 - ISO 6251

The apparatus consists of a benchtop steel case containing a stainless steel bath with a cover with up to eight jackets that allow the introduction of the vessels and a control box containing all the electronics.



Apparatus for four vessels

- Enamel finished steel case, benchtop model.
- Stainless steel bath equipped with a cover with holes for the insertion of the vessels; covers with hook for the vessels.
- Electric stirrer.
- Control thermometer jacket on the bath cover.
- Microprocessor thermoregulator with PID action and built-in temperature display 0.1°C accuracy. Probe: PT100 RTD.
- Working range: from ambient to 80°C. Regulation accuracy $\pm 0.1^\circ\text{C}$.
- Safety device against overheating and low-level.
- Easy access control box placed on the right side of the apparatus and containing all the electronics: anodized aluminium control panel with English written indications.
- English written user manual.
- For 220 V/50 Hz connections. Power consumption 2500 W.
- CE marked.
- Four, six and eight-position version available.

| | |
|------------|--|
| AD1838-100 | Apparatus for four vessels. Dimensions (l x w x h): 640 x 400 x 600 mm. Weight: kg 40 approx. |
| AD1838-110 | Apparatus for six vessels. Dimensions (l x w x h): 700 x 400 x 600 mm. Weight: kg 45 approx. |
| AD1838-120 | Apparatus for eight vessels. Dimensions (l x w x h): 760 x 400 x 600 mm. Weight: kg 50 approx. |

ACCESSORIES

| | |
|------------|--|
| AD1838-A00 | Stainless steel cylinder with valves |
| AD1838-A01 | Spare needle valve A |
| AD1838-A02 | Spare needle valve B |
| AD1838-A03 | ASTM Copper Strip Corrosion Standard |
| AD1838-A04 | Strip vise for one strip |
| AD1838-A05 | Strip vise for four strips |
| CAL001 | PT100 simulator |
| CAL003 | Official Certificate for Pt100 simulator |

CONSUMABLES

| | |
|------------|---|
| AD1838-C00 | O-ring gasket |
| AD1838-C01 | Copper strip 75 x 12.5 x 3 mm |
| AD1838-C02 | Silicon carbide paper 100 grit, 12 sheets |
| AD1838-C03 | Silicon carbide grains, 0.5 kg |
| AD1838-C04 | Silicon carbide paper 150 grit, 12 sheets |
| AD1838-C05 | Silicon carbide paper 240 grit, 12 sheets |
| AD1838-C06 | Viewing flat test tube |
| TA012C-N00 | ASTM 12C thermometer (-20°C/+102°C) |



Stainless steel cylinder with valves

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF THE FOAMING CHARACTERISTICS OF ENGINE COOLANTS IN GLASSWARE ASTM D1881

The apparatus consists of a steel frame supporting a Pyrex jar with a cover that allows to insert and fix three cylinders without necessity of any steel ring to avoid floatation, three high precision flowmeters and a control box containing all the electronics.



- Steel frame supporting one Pyrex jar, suitable for tests at 88°C.
- Aluminium cover with three jackets for the cylinders: locking clamps to hold the cylinders in position and thermometer jacket.
- Electric bath stirrer on the jar cover.
- Stainless steel heaters.
- Three high precision variable area flowmeters for 1000 ml/min: complete with needle valve, supports and diffuser connections. Individual calibration certificates.
- Microprocessor thermoregulator with PID action and built-in digital display 0.1°C accuracy. Probe: Pt100 RTD.
- Safety devices against overheating and low level.
- Easy access control box.
- English written user's guide and installation instructions.
- For 220 V/50 Hz connections. Power consumption 1800 W.
- Dimensions (l x w x h): mm 450 x 420 x 680. Weight: kg 30 approx.
- CE marked.
- Version with mass flow controllers and digital readout also available.

AD1881-100 Apparatus

ACCESSORIES

AD1881-A02 Air pump
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD1881-C00 Graduate pyrex glass cylinder
AD1881-C01 Rubber stopper with air inlet and outlet
AD1881-C02 Norton spherical Alundum gas diffuser stone (certified for permeability and pore size)
TA012C-N00 ASTM 12C thermometer (-20°C/+102°C)

Specifications may vary without notice.

The apparatus is supplied bare without glassware, diffusers, accessories and consumables.



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APPARATUS FOR THE DETERMINATION OF OXIDATION STABILITY OF INHIBITED MINERAL INSULATING OILS, STEAM TURBINE OILS (RPVOT) AND GASOLINE AUTOMOTIVE ENGINE OILS (TFOUT) ASTM D2112 - D2272 - D4742

The apparatus consists of a benchtop case hosting a stainless steel tank with two independent motors for the rotation of the vessels equipped with rotating heads with electronic pressure transducers. The 8.4" Panel Pc with touch screen interface on the front permits to control the instrument, insert test data, show pressure and temperature on graphs, save and retry test reports that can be printed by connecting a printer via the USB or Ethernet ports available on the back.



- Enamel finished steel case, benchtop version.
- Stainless steel tank. Capacity: 70 liters.
- Stainless steel top cover.
- One support rack for the vessels.
- Electric stirrer to ensure temperature uniformity.
- Microprocessor controlled thermoregulator with PID action and built-in digital display 0.1 °C accuracy. Probe: Pt100 RTD. Working range: from ambient to 170°C. Regulation accuracy: $\pm 0.1^\circ\text{C}$.
- Stainless steel heaters, SSR controlled.
- Independent motor for each vessel, inverter controlled.
- Safety devices against overheating and low level.
- 8.4" Panel PC running Microsoft Windows Embedded that permits to control the instruments, start tests, show pressure and temperature on a graph, save and retry data, perform diagnostic and calibration. Pressure can be shown both in kPa or psi.
- Two USB and one Ethernet port for connection to printers, network etc.
- English written user manual. CE marked.
- For 220 V/50 Hz connections: 4000 W power consumption.

AD2272-500 Apparatus. Dimensions: 750 x 750 x 980 mm. Weight: 150 kg

ACCESSORIES

AD2272-A00 Rotating vessel, AISI 316 stainless steel
 AD2272-A01 Table support with swivelling castors
 PRN01 Printer
 CAL001 PT100 simulator
 CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD2272-C00 Gasket for vessel
 AD2272-C02 Glass sample container for ASTM D 2112 and D 2272
 AD2272-C03 PTFE disc
 AD2272-C04 Set of n°10 copper coils for ASTM D 2112 and D 2272
 AD2272-C05 Spring
 AD4742-C00 Glass sample container with PTFE disc for ASTM D 4742
 AD4742-C01 Aluminium spacer
 TA037C-N00 IP 37C thermometer (+144°C/+156°C)
 TA102C-N00 ASTM 102C thermometer (+123°C/+177°C)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF OXIDATION CHARACTERISTICS OF DISTILLATE FUEL OIL ASTM D2274 - IP 388 - ISO 4263, 12205

The apparatus consists of a benchtop steel case containing an aluminium thermostatic block with a series of jackets for the introduction of the oxidation cells and a water dispenser for the condenser refrigeration: versions with variable area flowmeters or with mass flow controllers and touch-screen interface available.



AD2274-304

- Enamel finished benchtop steel case.
- Aluminium block bath with wells for test tubes, 48 mm diameter and 365 mm deep.
- Stainless steel electric heaters.
- Microprocessor thermoregulator with built-in temperature display, 0.1°C accuracy on versions -1xx or 8.4" Panel PC running Microsoft Windows Embedded with colour touch-screen interface on versions -3xx.
- Probe: PT100 RTD. Regulation accuracy $\pm 0.1^\circ\text{C}$. Working range: from ambient to 150 °C.
- Safety device against overheating.
- Easy access control box containing all the electronics and electrical parts. Aluminium control panel with english written indications.
- Oxygen inlet manifold with variable area flowmeters (-1xx) or high precision mass flow controllers (-3xx), 0-4 l/h.
- Water inlet manifold with valve connections for the mushroom condensers.
- Water outlet manifold.
- n° 1 thermometer jacket.
- English written user manual. CE marked.
- For connection to 220V - 50/60Hz. Power consumption 1800 W (4 and 8-position units), 2500 W (12-position unit).
- Four, eight and twelve-place units available. Six-place unit on request.

| | |
|------------|--|
| AD2274-104 | Four-place unit with variable area flowmeters. Dimensions (l x w x h): 700 x 600 x 1000 mm. Weight: 90 kg |
| AD2274-108 | Eight-place unit with variable area flowmeters. Dimensions (l x w x h): 850 x 700 x 1000 mm. Weight: 130 kg |
| AD2274-112 | Twelve-place unit with variable area flowmeters. Dimensions (l x w x h): 110 x 700 x 1000 mm. Weight: 160 kg |
| AD2274-304 | Four-place unit with mass-flow controllers. Dimensions (l x w x h): 640 x 430 x 1000 mm. Weight: 90 kg |
| AD2274-308 | Eight-place unit with mass-flow controllers. Dimensions (l x w x h): 640 x 490 x 1000 mm. Weight: 130 kg |
| AD2274-312 | Twelve-place unit with mass-flow controllers. Dimensions (l x w x h): 760 x 430 x 1000 mm. Weight: 160 kg |

ACCESSORIES

| | |
|------------|--|
| AD2274-A00 | Apparatus for filterable insolubles |
| AD2274-A01 | Pack of 100 filters |
| AD2274-A02 | Vacuum flask 500 ml |
| CAL001 | PT100 simulator |
| CAL003 | Official Certificate for Pt100 simulator |

CONSUMABLES

| | |
|------------|-------------------------------------|
| AD2274-C00 | Test tube |
| AD2274-C01 | Mushroom condenser |
| AD2274-C02 | Oxygen delivery tube |
| TA040C-N00 | ASTM 40C thermometer (+72°C/+126°C) |

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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FREEZING POINT AUTOMATIC TESTER WITH INTEGRATED COOLING (STAND-ALONE UNIT) ASTM D2386 - IP 16 - ISO 3013 - DIN 51421

The apparatus consists of a benchtop case containing the cooling compressor capable to cool the jacket down to -120°C and supporting the analytical head. An 8.4" touch screen interface on the front permits to control the instrument, calibrate the sensors, retrieve and print data. Two USB ports and one Ethernet connector allows the user to connect to printers or laboratory network.



- Enamel finished steel-aluminium case, benchtop version.
- Insulated metal jacket conform to ASTM, IP, DIN and ISO standard methods and capable to work from +50 to -120°C thanks to an integrated Stirling cooling system. No CFC/HCFC gases are used.
- One glass sample container conform to ASTM, IP, DIN and ISO standard methods.
- Optical detection of freezing point through IR sensor: sample is cooled until crystals appear and then heated until their disappearance to determine the result.
- Temperature sensor: Pt100 RTD. Accuracy of temperature reading: +/- 0.1°C.
- Electric stirrer 75 rpm complete with brass stirring coil and mechanism.
- 8.4" touch screen interface that permits to introduce the analytical data, control the test and display the results. Tests can be run acc. to ASTM/IP/ISO/DIN methods or to user defined methods. Software includes diagnose and calibration tools with all modern QC routines.
- Two USB and one Ethernet connector for connecting to printers and network.
- English written user manual. CE marked.
- For 220V - 50/60Hz connections: 400 W.
- Dimensions and weight: 420x500x800 mm (l x w x h), 25 kg.

FPplus Freezing point automatic tester (for fuels)

ACCESSORIES

PRN01 Printer

CONSUMABLES

FP020 Sample container
OR168 O-Ring for sample container
FP021 Pt100 for sample temperature detection
FP022 Fiber optic
FP023 Stirrer coil
FP024 Stirrer motor

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF OXIDATION STABILITY OF MINERAL INSULATING OILS ASTM D2440 - IEC 1125 (A + B + C) EN 61125 (A + B + C) - IP 280, 306, 307

The apparatus consists of a benchtop steel case hosting a dry bath, 4, 8 or 12-positions: the instrument is equipped with individual electronic mass flow controllers to maintain the correct flow throughout the test and a touch screen interface.



Twelve-place apparatus

- Enamel finished benchtop steel case.
- Aluminium block bath with jackets 27 mm diameter and 140 mm height for oxidation tubes.
- Electronic mass flow controllers 0-1200 ml/h f.s with 1% accuracy.
- Rack for adsorption tubes, stainless steel.
- Stainless steel heaters.
- High efficiency thermal insulation.
- 8.4" touch screen interface that permits to introduce the analytical data and control the test. Software includes diagnose and calibration tools with all modern QC routines.
- Two USB and one Ethernet port for printer and network connection.
- Probe: Pt100 RTD For working temperature from ambient to 220°C ± 0.1°C.
- Safety device against overheating.
- Easy access control box containing all the electronics. Anodized aluminium control panel with English written indications.
- Four, eight and twelve-position units available: six-position unit available on request.
- For 220V - 50/60Hz connection. Power consumption: 1500 W (four and eight-position), 2000 W (12-position).
- English written user manual. CE marked.

| | |
|------------|---|
| AD2440-304 | Four-place apparatus with touch-screen interface. Dimensions: 640 x 420 x 520 mm, 65 kg |
| AD2440-308 | Eight-place apparatus with touch-screen interface. Dimensions: 640 x 420 x 520 mm, 80 kg |
| AD2440-312 | Twelve-place apparatus with touch-screen interface. Dimensions: 1000 x 420 x 520 mm, 110 kg |

ACCESSORIES

| | |
|--------|--|
| CAL001 | PT100 simulator |
| CAL003 | Official Certificate for Pt100 simulator |

CONSUMABLES

| | |
|------------|--|
| AD2440-C00 | Oxidation tube with Drechsel head |
| AD2440-C01 | Adsorption tube with Drechsel head |
| AD2440-C02 | Set of 12 copper coils for tests acc. to ASTM D 2440 |
| AD2440-C03 | Set of 12 copper coils for tests acc. to IP 306 and IP 307 |
| AD2440-C04 | Set of 12 copper coils for tests acc. to CEI/IEC 1125 (method A) and EN 61125 (method A) |
| AD2440-C05 | Set of 12 copper coils for tests acc. to CEI/IEC 1125 (method B) and EN 61125 (method B) |

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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CLOUD POINT AUTOMATIC TESTER WITH INTEGRATED COOLING (STAND-ALONE UNIT) ASTM D2500, D97, D5771, D5853, D5950 IP 219, IP 15 - ISO 3015, ISO 3016

The apparatus consists of a benchtop case containing the cooling compressor with the cooling jacket and supporting the analytical head. An 8.4" touch screen interface on the front permits to control the instrument, calibrate the sensors, retrieve and print data. Two USB ports and one Ethernet connector allows the user to connect the instrument to printers or laboratory network.



- Enamel finished steel-aluminium case, benchtop version.
- Insulated metal jacket conform to ASTM, IP, DIN and ISO standard methods and capable to work from +50 to -120°C thanks to an integrated Stirling cooling compressor. No CFC/HCFC gases are used.
- One glass sample container with mirror conform to ASTM, IP, DIN and ISO standard methods.
- Optical detection of cloud point through IR sensor.
- Temperature sensor: Pt100 RTD. Accuracy of temperature reading: +/- 0.1°C.
- 8.4" touch screen interface that permits to introduce the analytical data, control the test and display the results. Tests can be run acc. to ASTM/IP/ISO/DIN methods or to user defined methods. Software includes diagnose and calibration tools with all modern QC routines.
- Two USB and one Ethernet connector for connecting to printers and network.
- English written user manual. CE marked.
- For 220V - 50/60Hz connections: 400 W.
- Dimensions and weight: 420x500x800 mm (l x w x h), 25 kg.

CPplus Cloud point automatic tester

ACCESSORIES

PRN01 Printer

CONSUMABLES

CP000 Sample container
OR3131 O-Ring for sample container
CP021 PT100 for the sample (Cloud Point)
CP023 Fiber optic

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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CLOUD AND POUR POINT AUTOMATIC TESTER WITH INTEGRATED COOLING (STAND-ALONE UNIT) ASTM D2500, D97 - IP 219, IP 15 - ISO 3015, ISO 3016

The apparatus consists of a benchtop case containing the cooling compressor, the thermally insulated jacket and supporting the analytical head. An 8.4" touch screen interface on the front permits to control the instrument, retrieve and print data and calibrate the sensors. Two USB ports and one Ethernet connector allows the user to connect the instrument to printers or laboratory network.



- Enamel finished steel-aluminium case, benchtop version.
- Insulated metal jacket conform to ASTM, IP, DIN and ISO standard methods.
- One glass sample container with mirror conform to ASTM, IP, DIN and ISO standard methods.
- Insulated metal jacket conform to ASTM, IP, DIN and ISO standard methods and capable to work from +55 to -120°C thanks to an integrated Stirling cooling compressor.
- Optical detection of cloud point based on continuous reflected IR light percentage . Accuracy of temperature reading: +/- 0.1°C.
- Micro Thermal detection of pour point. Motorized arm that lifts and tilts the sample container out of the jacket at programmable intervals: mimic ASTM D97. Accuracy of temperature reading: +/- 0.1°C.
- 8.4" touch screen interface that permits to introduce the analytical data, control the test and display the results. Tests can be run acc. to ASTM/ISO methods or to user defined methods. Software includes diagnose and calibration tools with all modern QC routines.
- Two USB and one Ethernet connector for connecting to printers and network.
- English written user manual. CE marked.
- For 220V - 50/60Hz connections: 400 W.
- Dimensions and weight: 420x500x900 mm (l x w x h), 25 kg.

CPPPplus Cloud and pour point automatic tester

ACCESSORIES

PRN01 Printer

CONSUMABLES

CPPP000 Sample container
OR3131 O-Ring for sample container
CP021 PT100 for the sample (Cloud Point)
PP021 PT100 for the sample (Pour Point)
CP023 Fiber Optic
PP024 Detection PT100 (two required)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF EVAPORATION LOSS OF LUBRICATING GREASES OVER WIDE TEMPERATURE RANGE ASTM D2595

The apparatus consists of a case hosting the aluminium block and the electronic mass-flow controllers that provide to control air flow keeping it constant even in case of inlet pressure variations. The control panel hosts the block thermoregulator, two thermoregulators for the air (one independent for each position) and the digital displays with the knobs for flow adjustment.



Two-place unit

- Enamel finished benchtop steel case.
- High efficiency thermal insulation to avoid heating of the external case.
- Aluminium block with jackets for the introduction of the cell.
- Air preheater inserted in the bottom of the block, one for each position.
- Stainless steel band heaters.
- Two covers, air eduction tubes hoods and cups for grease, stainless steel. Kalrez gaskets.
- Electronic thermoregulators for air temperature control complete with thermocouples.
- Electronic mass flow controllers with 0-2.5 l/min scale and 1% accuracy: complete with digital display and knob for flow adjustment. Air filter fixed on the case and containing glass wool.
- Microprocessor thermoregulator with PID action: built-in digital thermometer 0.1°C accuracy. Pt100 probe. Test range: from ambient to 316°C.
- Safety devices against overheating.
- English written user manual. CE marked.
- Two and four-place units available
- For 220 V/50 Hz connection. Power consumption 2000 W (two-place) and 4000 W (four-place).

AD2595-202 Two-place unit. Dimensions: 500 x 450 x 520 mm, 75 kg
AD2595-204 Four-place unit. Dimensions: 800 x 500 x 520 mm, 120 kg

ACCESSORIES

AD2595-A00 Digital thermometer

CONSUMABLES

AD2595-C00 Type K thermocouple with supports (for air temperature measurement)
AD2595-C01 Cover and eduction tube
AD2595-C02 Sample cup for grease with hood
AD2595-C03 Gasket
TA003C-N00 ASTM 3C thermometer (-5/+400°C)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF HYDROLITIC STABILITY OF HYDRAULIC FLUIDS (BEVERAGE BOTTLE METHOD) ASTM D2619

The apparatus consists of a benchtop oven with a turntable inside that can carry eight 200 ml bottles. The turntable rotates the bottles at 5 rpm through an external motor.



- Enamel finished benchtop steel case.
- Stainless steel internal vane.
- Stainless steel heater.
- High-efficiency thermal insulation.
- Machined aluminium turntable with supports for eight 200 ml Pyrex glass bottles: it can be removed from the equipment to ease loading/unloading of the bottles.
- Safety switch that stops the turntable when the door is open.
- Microprocessor controlled thermoregulator, PID action with built-in digital display 0.1°C accuracy. Probe: Pt100 RTD. Regulation accuracy $\pm 0.5^{\circ}\text{C}$.
- Safety devices against overheating.
- Working range: from ambient to 150°C.
- Easy access control box placed on the right side of the apparatus containing all the electronics: anodized aluminium control panel with english written indications.
- English written user manual.
- For 220V - 50/60Hz connections: 2100 W.
- Dimensions (l x w x h): mm 900 x 850 x 750 approx.
- Weight: kg 100 approx.
- CE marked.

AD2619-110 Apparatus

ACCESSORIES

AD2619-A00 Filtration assembly
AD2619-A01 Set of 100 filters diam. 47 mm
AD2619-A02 Vacuum flask, 500 ml
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD2619-C00 Pyrex bottle with threaded cap
AD2619-C01 Spare cap
AD2619-C02 Copper strip

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF DEMULSIBILITY CHARACTERISTICS OF LUBRICATING OILS ASTM D2711

The apparatus consists of a steel frame supporting the control box, the jar and an electric lift that permits to move the sample stirrer up and down in the test funnel. The stirrer assembly can also be removed from the unit for cleaning. Stirrer speed is continuously showed on a digital tachometer.



- Borosilicate glass jar 500 mm depth, mounted on a enamel finished benchtop steel frame.
- Anodized aluminium cover with four-position turntable for the insertion of four graduated separatory funnels: a positioning device permits to locate the funnels exactly below the stirrer and avoid glassware breaking due to positioning mistakes.
- Stainless steel heaters and electrical bath stirrer.
- Variable speed electrical sample stirrer mounted on a electrical device which permits to lift and lower the stirrer easily in the sample. The stirrer assembly is also removable for cleaning.
- Digital tachometer in the control box which continuously shows the stirrer speed.
- Electromechanical timer which automatically stops the sample stirrer after 5 minutes of stirring.
- Microprocessor thermoregulator with built-in digital thermometer 0.1°C accuracy. Probe: PT100 RTD. Regulation accuracy $\pm 0.1^\circ\text{C}$. Working range: from ambient to 90°C.
- Safety devices against overheating and low-level.
- Easy access control box placed on the right side of the apparatus containing all the electronic and electrical components: aluminium control panel with english written indications.
- English written user manual. - CE marked.
- For 220 V/50 Hz connections. Power consumption 1800 W.
- Dimensions (l x w x h): mm 500 x 460 x 1100 approx. Weight: kg 50 approx.

AD2711-100 Apparatus

ACCESSORIES

AD2711-A00 Table support for four funnels
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD2711-C00 500 ml graduated funnel, Pyrex glass

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE ROLLING THIN FILM OVEN TEST OF BITUMENS ASTM D2872 - EN 12607

This test is used to determine the effect of heat and air on a moving film of semi-solid asphaltic materials. The effects of this treatment are determined from measurements of the properties of the asphalt before and after having heated in a oven for 75 minutes at 163°C a moving film of asphaltic material while air at a rate of 4 l/min is directed against the sample. The apparatus consists of a forced air circulation oven suitable for temperatures up to 180°C and equipped with a rotating shelf placed inside along with a coil that preheats the air directed into the sample container.



- Enamel finished steel case benchtop version.
 - Stainless steel inside walls with 38 mm air plenum. Glass wool and ceramic fibers heating insulation.
 - Door with double tempered glass window for internal view.
 - Chromium plated coiled air line, 8 mm diameter and 7.6 m long, with 1 mm diameter orifice. The orifice is placed 8 mm from the opening of the glass containers.
 - Mass flow controller for air flow control: complete with knob and display on the front panel.
 - Squirrel cage fan, 135 mm diameter and 75 mm height, placed at a midpoint in the width of the oven and 150 mm from the face of the carriage. The speed of the fan is electronically regulated at 1725 rpm: fan motor disposed externally.
 - Vertical circular aluminium carriage 300 mm diameter, placed 160 mm from the upper inside wall of the oven, excluding the air plenum, and 110 mm from the rear inside wall. The carriage is equipped with stainless steel clips for firmly holding eight glass containers.
 - The location of the thermometer support permits to check the thermometer through the door window during the test.
 - Electronically controlled motor with reducing gear for a 15 rpm precise carriage rotation.
- Microprocessor controlled thermostat with PID action with built-in digital display 0.1°C accuracy showing the set point and the current temperature inside the oven. Probe: Pt100 RTD. For working temperature of $163 \pm 0.5^\circ \text{C}$.
 - Safety device against overheating.
 - Safety device that stops the carriage in case the door is opened during the test.
 - English written user manual.
 - For 220 V/50 Hz connections: 2200 W power consumption.
 - Dimensions (l x w x h): mm 940 x 890 x 910 approx. Weight: 115 kg approx.
 - CE marked.

AD2872-100 Apparatus

ACCESSORIES

AD2872-A00 Glass sample container
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

TA013C-N00 ASTM 13C thermometer (+155°C/+170°C)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF CORROSION OF CAST ALUMINIUM ALLOYS IN ENGINE COOLANTS UNDER HEAT REJECTING CONDITIONS ASTM D4340

The apparatus consists of a base supporting one or two heat-transfer corrosion cells. Cells are rated for a working pressure up to 40 psi and working temperature up to 160 °C. An electronic timer permits to set the test duration while an electronic thermostat is used to control the temperature.



Twin-unit apparatus

- Enamel finished benchtop steel base.
- Safety screen surrounding the cell(s).
- Heat transfer corrosion cell composed by a Pyrex-glass cell with stainless steel top and bottom plates.
- Stainless steel heat transfer bar. 950 W coaxial heater piloted through a solid state relay.
- Stainless steel manifold mounted on the top plate and equipped with purge valve, pressure relief valve and gage.
- Filling nozzle with cap on the top plate.
- Four stainless steel rods for assembly.
- Electronic thermoregulator with PID action and built-in digital display. Probe: type K thermocouple. In the twin-unit, an independent thermostat for each position is adopted.
- Working range: from ambient to 160°C.
- Safety device against overheating.
- Electronic timer: it is possible to preset the test duration. When the preset time is elapsed, the heater is automatically turned off. In the twin-unit, an independent timer for each position is adopted.
- English written user manual.
- For 220 V/50 Hz connections. Power consumption: 2200 W (twin unit) and 1100 W (single unit).
- Dimensions (l x w x h): 800 x 350 x 850h mm (twin unit) and 450 x 350 x 850h mm (single unit).
- CE marked.

AD4340-100 Single-unit apparatus
AD4340-110 Twin-unit apparatus

ACCESSORIES

CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD4340-C00 Specimens
AD4340-C01 Pyrex glass cell
AD4340-C02 Viton gasket
AD4340-C03 Type K thermocouple

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.

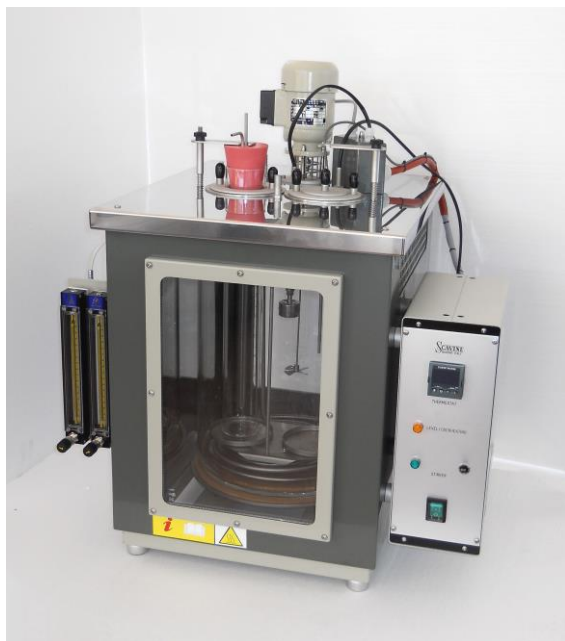


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APPARATUS FOR THE DETERMINATION OF HIGH-TEMPERATURE FOAMING CHARACTERISTICS OF LUBRICATING OILS ASTM D6082

The apparatus consists of a steel case containing a Pyrex jar with an insulated cover that allows to insert two cylinders without necessity of any steel ring to avoid floatation: two electronic mass-flow controllers contained in the control box permit to blow the exact amount of air in the due time.



- Enamel finished steel case containing one Pyrex jar, suitable for tests up to 160°C. Double-walled window on the front.
- Insulated cover with two holes for the cylinders: locking clamps to hold the cylinders in position and thermometer jacket.
- Electric stirrer.
- Stainless steel heaters.
- One set of rubber stoppers with air tubes (inlet and outlet).
- Two variable area flowmeters, 15 l/h scale, 150 mm.
- Microprocessor thermoregulator with PID action and built-in digital display 0.1°C accuracy. Probe: Pt100 RTD.
- Safety devices against overheating and low level.
- Easy access control box.
- English written user's guide and installation instructions.
- For 230V/50 Hz connections. Power consumption 2200 W.
- Dimensions (l x w x h): mm 680 x 540 x 800. Weight: kg 35 approx.
- CE marked.

AD6082-100 Apparatus

ACCESSORIES

AD6082-A20 Electronic air volume counter (replaces wet test meter)
AD6082-A21 Certificate for the volume counter
AD6082-A01 Air pump
AD6082-A02 Glass drying tower
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

AD6082-C00 Graduate Pyrex glass cylinder
AD6082-C01 Rubber stopper with air inlet and outlet tubes
AD6082-C02 Mott stainless steel cylindrical gas diffuser
TA041C-N00 ASTM 41C thermometer (+98°C/+152°C)

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF COLD FILTER PLUGGING POINT OF DIESEL FUELS ASTM D6371 - IP 309 - EN 116

The apparatus consists of a device that can be used in conjunction with any Cloud & Pour Point cabinet. It contains a micro vacuum pump and is equipped with the vacuum gage, the pipette with filter, a digital indicator for the sample temperature and a timer that provides vacuum for the requested time.



- Enamel finished support consisting in a control box containing all the electronics with two legs that permit to easily place the instrument on top of any Cloud and Pour Point cabinet. (see picture below).
- One test jar, flat bottom, with etched mark at 45 ml. Level.
- One supporting ring, insulating ring, spacer and stopper.
- One pipette with filter unit and s.s. filter 45 μm .
- Digital thermometer, range -99.9+99.9°C with Pt100 RTD for sample temperature measurement.
- Button for turning on suction: the suction is automatically stopped after 60 sec and a buzzer sounds for 1 sec each time suction finishes.
- Vacuum device consisting of pressure equalizing cylinder, U-tube manometer, solenoid valve and electric vacuum pump. Everything is already mounted and ready to use.
- English written user manual. CE marked.
- For 220 V/50 Hz connections: 100 W power consumption.

AD6371-100 Apparatus

CONSUMABLES

AD6371-C00 Test jar with 45 ml level mark
AD6371-C01 PT100 for the sample
AD6371-C02 Pipette
AD6371-C03 Filter body assembly (without filter)
AD6371-C04 Filter, 45 μm

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.

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COLD FILTER PLUGGING POINT AUTOMATIC TESTER WITH INTEGRATED COOLING (STAND-ALONE UNIT) ASTM D6371 - IP 309 - EN 116 - EN 16329

The apparatus consists of a benchtop case containing the cooling compressor, the thermally insulated jacket and supporting the analytical head. An 8.4" touch screen interface on the front permits to control the instrument, retrieve and print data and calibrate the sensors. Two USB ports and one Ethernet connector on the rear panel allows the user to connect to printers or network.



- Enamel finished steel case, benchtop version.
- Insulated metal jacket conform to ASTM, IP, DIN, EN and ISO standard methods.
- One glass sample container conform to ASTM, IP, DIN, EN and ISO standard methods.
- Insulated metal jacket conform to ASTM, IP, DIN and ISO standard methods and capable to work from +55 to -120°C thanks to an integrated Stirling cooling compressor.
- Automatic determination of CFPP: sample temperature decrease is monitored by the software and vacuum applied every 1°C. Two IR photocells permit to measure CFPP during aspiration or release. Automatic selectable sample preheating. The equipment can run also tests acc. to EN 16329 (linear cooling bath).
- Temperature sensor: Pt100 RTD. Accuracy of temperature reading: +/- 0.1°C.
- Filtration unit composed by 20 ml pipette, filter holder and 45 microns filter.
- 3-way solenoid valve for vacuum controlled by the software. Vacuum unit required if not already available.
- 8.4" touch screen interface that permits to introduce the analytical data, control the test and display the results. Tests can be run acc. to ASTM/IP/DIN/EN methods or to user defined methods. Software includes diagnose and calibration tools with all modern QC routines.
- Two USB and one Ethernet connector for connecting to printers and network.
- English written user manual. CE marked.
- For 220V - 50/60Hz connections: 400 W.
- Dimensions and weight: 420x500x900 mm (l x w x h), 25 kg approx..

CFPPplus CFPP automatic tester

ACCESSORIES

VAC01 Vacuum unit consisting of pump, air + water tank, U-tube gauge and flowmeter with tubing
PRN01 Printer

CONSUMABLES

CFPP000 Test jar with 45 ml level mark
CFPP021 O-ring for the test jar
CFPP022 PT100 for the sample
CFPP023 Set of photocells (two emitters and two receivers)
CFPP024 Pipette
CFPP025 Filter holder (without filter)
CFPP026 Filter
CFPP027 Vacuum adapter
CFPP028 Pince

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF THE OXIDATION STABILITY OF LUBRICATING OILS USED IN AUTOMOTIVE TRANSMISSION FLUIDS

CEC L-48-A-00

The apparatus is a benchtop model which houses the mechanical components and a miniature PC with touch screen. A software running under Windows Embedded permits to enter the test parameters, run the test automatically, store, retrieve and print data, diagnose and calibrate the instrument offering in the meanwhile all the features of Windows systems such as LAN connectivity. The instrument is equipped with electronic flow controllers that ensure the correct flow throughout the test.



- Enamel finished benchtop steel and aluminium case.
- Aluminium block, 4, 6, 8 or 12-position versions.
- Water dispenser for the condensers.
- Electronic flow controllers, one for each position that allow a precise 5 l/h air flow.
- PC based controller with 8.4" color touch-screen interface. IP 65 front protection.
- PID thermoregulator: set point can be entered through the touch-screen: accuracy +/- 0.1°C. Regulation accuracy: +/- 0.1°C.
- Software characteristics: setting of the test parameters through the touch screen (flow and duration), storage of up to 800 test results and possibility to retrieve and print test reports, calibration and diagnostic routines.
- LAN connectivity: the apparatus can be connected directly to a hub to become part of the user network.
- Two USB and one RS-232 serial interfaces.
- English written user manual. Microsoft Windows Xp original license.
- Dimensions (l x w x h): mm 400 (1000 for the 12-position version) x 600 x 650. Weight: kg 40 to 80 approx.
- For 220 V/50 Hz connections: 1500 to 2000 W power consumption.
- CE marked.

| | |
|------------|------------------------|
| CECL48-100 | Apparatus, 4-position |
| CECL48-110 | Apparatus, 6-position |
| CECL48-120 | Apparatus, 8-position |
| CECL48-130 | Apparatus, 12-position |

ACCESSORIES

| | |
|------------|---------------------------------|
| CECL48-A00 | Printer |
| CAL001 | PT100 simulator |
| CAL003 | Certificate for Pt100 simulator |

CONSUMABLES

| | |
|------------|------------------|
| AD0093-C00 | Sample container |
| AD0093-C01 | Condenser |
| AD0093-C02 | Air tube |

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF AGEING CHARACTERISTICS OF LUBRICATING OILS ACC. TO BAADER DIN 51554

The apparatus consists of a benchtop case hosting the heating block and a frame supporting the stirring mechanism. The block has a series of jackets for the sample containers: a turntable permits to assemble the sample containers before putting them in the jackets all together. The block can reach temperatures up to 150°C +/- 0.1°C: it is heated by means of a coaxial heater. The stirring device is actuated by means of an electronically piloted gear reduced motor connected to a cam: it is regulated for 25 rpm.



12 place apparatus

- Enamel finished steel case with robust base to support the heating block.
- Aluminium alloy machined circular heater with a series of jackets for sample tubes.
- Water manifold with a series of hose connectors for condensers connection.
- Water manifold for condenser sink.
- Stroke mechanism that dips the copper coil in and out the oil under test 25 times per minute.
- Adjustable stroke counter that stops the mechanism after the desired number of strokes.
- Microprocessor controlled thermoregulator with PID action and built-in digital display 0.1 °C accuracy showing the temperature and the set-point. Four buttons easy-to-use keyboard to preset working temperature. Probe: Pt100 RTD. Regulation accuracy: ± 0.1°C.
- Stainless steel heater.
- Safety device that cuts off the power supply and light a lamp on the control panel in case of overheating of the heating block.
- Easy access control box placed on the left side of the apparatus containing all the electronic and electrical components: anodized aluminium control panel with english written indications.
- English written user manual.
- For 220 V/50 Hz connections. Power consumption: 2500 W.
- Dimensions (l x w x h): mm 550 x 550 x 1000 approx. Weight: 80 kg approx.
- CE marked.
- Without glassware and copper coils.

D51554-100 6 place apparatus
D51554-110 8 place apparatus
D51554-120 12 place apparatus

ACCESSORIES

CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

D51554-C00 Sample tube with female conic cut
D51554-C01 Liebig condenser with male conic cut and two hose connectors for water inlet and outlet.
D51554-C02 Glass rod (copper coil support)
D51554-C03 Copper coil

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF CORROSIVENESS AND OXIDATION STABILITY OF LIGHT OILS (METAL SQUARES) FTMS 791-5308

The apparatus consists of a benchtop steel case containing an aluminium thermostatic block with a series of holes for the introduction of the oxidation cells, a support for the flowmeters and a water dispenser for the condenser refrigeration.



Four-place unit

- Enamel finished benchtop steel case.
- Aluminium block bath with wells for test tubes.
- Stainless steel electric heaters.
- Microprocessor thermoregulator with built-in temperature display, 0.1°C accuracy. Probe: PT100 RTD. Regulation accuracy $\pm 0.1^\circ\text{C}$. Working range: from ambient to 300 °C.
- Safety device against overheating.
- Easy access control box placed on the right side of the apparatus and containing all the electronics and electrical parts. Aluminium control panel with english written indications.
- Oxygen inlet manifold with high precision variable area flowmeters with calibration certificate. Individual needle valves for regulating oxygen flow at 5 ± 0.5 l/h
- Water inlet manifold with valve connections for the mushroom condensers.
- Water outlet manifold.
- English written user manual.
- For connection to 220V/50Hz. Power consumption 2000 W.
- CE marked.
- Four, six, eight and twelve-place units available.
- Version with mass flow controller and software also available.

| | |
|------------|--|
| F53084-100 | Four-place unit. Dimensions (l x w x h): 640 x 430 x 1000 mm. Weight: 90 kg |
| F53084-110 | Six-place unit. Dimensions (l x w x h): 760 x 430 x 1000 mm. Weight: 110 kg |
| F53084-120 | Eight-place unit. Dimensions (l x w x h): 640 x 490 x 1000 mm. Weight: 130 kg |
| F53084-130 | Twelve-place unit. Dimensions (l x w x h): 760 x 430 x 1000 mm. Weight: 160 kg |

ACCESSORIES

| | |
|--------|--|
| CAL001 | PT100 simulator |
| CAL003 | Official Certificate for Pt100 simulator |

CONSUMABLES

| | |
|------------|---|
| F53084-C00 | Test tube |
| F53084-C01 | Allihn condenser |
| F53084-C02 | Oxygen delivery tube |
| F53084-C03 | Set of four copper plates |
| F53084-C04 | Set of four mild carbon steel plates |
| F53084-C05 | Set of four aluminium alloy plates |
| F53084-C06 | Set of four magnesium alloy plates |
| F53084-C07 | Set of four cadmium plated steel plates |
| F53084-C08 | Set of four silver plates |
| F53084-C09 | Set of four solid cadmium plates (non standard) |
| F53084-C10 | Set of four titanium plates (non standard) |
| F53084-C11 | Pack of 10 sheets of abrasive paper 100 grit |
| F53084-C12 | Pack of 10 sheets of abrasive paper 150 grit |
| F53084-C13 | Pack of 10 sheets of abrasive paper 240 grit |
| F53084-C14 | Abrasive powder, 0.5 kg |

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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ABEL FLASH POINT TESTER IP 33 - IP 170 – ISO 13736

The apparatus consists of a benchtop case hosting the electrically heated bath. The apparatus is equipped with a 30 rpm electric stirrer with a separate switch.



- Enamel finished steel case.
 - Double wall brass heating bath with hole for water filling.
 - Electric heater with voltage regulator.
 - Pt100 probe for sample temperature acquisition.
 - Digital display for sample temperature, 0.1°C accuracy.
 - One brass cup with handle.
 - One lid with flame exposure device, thermometer well, gas ignitor and pilot flame.
 - 30 rpm electric stirrer with separate switch.
 - English written user manual.
 - For 220 V/50 Hz connection: 500 W power consumption.
- Dimensions (l x w x h): 360 x 360 x 400 mm.
Weight: 12 kg approximately.
CE approved.

IP0170-120 Apparatus

ACCESSORIES

CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

IP0170-C00 Oil cup
IP0170-C01 Lid
IP0170-C02 PT100 probe
IP0170-C04 Gas ignitor

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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ABEL AUTOMATIC FLASH POINT TESTER WITH BAROMETRIC CORRECTION OF THE RESULT IP 33 - IP 170 - ISO 13736 - DIN 51755

The apparatus consists of a benchtop case which houses the electro-mechanical components and a miniature PC with touch screen. A software running under Windows Embedded permits to select the test method and the test parameters, run the test automatically, store, retrieve and print data, diagnose and calibrate the instrument offering in the meanwhile all the features of Windows systems such as LAN connectivity. The instrument is equipped with a sensor for barometric pressure for the correction of the results towards atmospheric pressure.



- Enamel finished steel and aluminium case, benchtop version.
 - Chromium-plated brass heating bath with exactly the same dimensions reported in the method for manual apparatus.
 - Brass oil cup and lid with insulating handle. Jacket for glass-coated Pt100 RTD in the cover (n°1 Pt100 with cable and quick connector supplied with the instrument).
 - Electric stirrer that stops during flame dipping. Stirrer speed: 30 rpm. Other speeds can be selected for custom methods.
 - Automatic flame dipping: provision for gas or electric ignitor.
 - Electric heating. A plate heater placed below the bath provide the correct heating rate of 1 to 1.5°C/min.
 - Two hose connectors permit to link the apparatus to a water source or a cryostat: thermally insulated pipes. Cryostat not included.
 - Ignition system: gas or electric ignitors can be used. When gas ignitor is in use, the electric one can be used as pilot flame.
 - PC based controller with 6" color touch-screen interface. IP 65 front protection.
 - Software characteristics: selection of the test method or setup of up to 40 custom methods, introduction of the test parameters through the touch screen, possibility to change the setpoint during the test, "search" option (for sample with unknown flash point), selectable cooling time, storage of up to 400 test results and possibility to retrieve and print test reports, LAN connectivity, calibration and diagnostic routines.
- LAN connectivity: the apparatus can be connected directly to a hub to become part of the user network: a software supplied with the apparatus permits to retrieve data also from another PC.
 - Flash point detection through ionization sensor: the apparatus also provides an alert if a flash has occurred at the first flame application, warning that the test result is not reliable. The flash point temperature remains shown on the display until the operator's acknowledgement.
 - Safety device is provided to stop the analyzer if a flash has not been detected at a temperature 30°C over the preset value. This safety device could be excluded to perform "search" tests.
 - English written user manual.
 - Dimensions (l x w x h): mm 280 x 480 x 650. Weight: kg 20 approx.
 - For 220 V/50 Hz connections: 500 W power consumption.
 - CE marked.

IP0170-700 Apparatus

ACCESSORIES

IP0170-A00 Cryostat for temperatures down to -30°C
PRN01 Printer
CAL001 PT100 simulator
CAL003 Official Certificate for Pt100 simulator

CONSUMABLES

IP0170-C00 Oil cup
IP0170-C51 Lid
IP0170-C52 PT100 probe
IP0170-C03 Electric ignitor
IP0170-C04 Gas ignitor

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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APPARATUS FOR THE DETERMINATION OF SILVER CORROSION BY AVIATION TURBINE FUELS IP 227

The apparatus, suitable for the execution of the test at 50°C, consists of a steel case containing a stainless steel bath with a four-hole cover for the test tubes and a manifold for connecting water to the condensers.



- Enamel finished benchtop steel case.
- Stainless steel inner bath with a four-hole cover for the test tubes.
- Manifold for connecting in parallel four condensers "cold finger" type.
- Electrical stirrer.
- Stainless steel heater.
- Electronic temperature control PID via a microprocessor controlled thermoregulator with built-in temperature display 0.1°C accuracy. The probe is a Pt100 RTD class 1/3 DIN: regulation accuracy $\pm 0.1^\circ\text{C}$.
- Safety devices that cut off the power supply and light a lamp on the control panel in case of overheating or lowering of the liquid level in the bath.
- Easy access control box on the right side of the apparatus containing all the electronic and electrical components: aluminium control panel with english written indications.
- English written user manual.
- For 220/50Hz connections. Power consumption 1200W.
- Dimensions (l x w x h): 600 x 400 x 900 approx. Weight 60 kg approx.
- CE marked.

| | |
|------------|------------------|
| IP0227-100 | Four-place unit |
| IP0227-110 | Six-place unit |
| IP0227-120 | Eight-place unit |

ACCESSORIES

| | |
|------------|---|
| IP0227-A00 | ASTM comparative table (D 3241 formerly D 1660) |
| IP0227-A01 | Strip vise for four strips |
| CAL001 | Pt100 simulator |
| CAL003 | Official Certificate for Pt100 simulator |

CONSUMABLES

| | |
|------------|--|
| IP0227-C00 | Amber-glass sample container |
| IP0227-C01 | Amber-glass condenser |
| IP0227-C02 | Silver strip support |
| IP0227-C03 | Silver strip |
| IP0227-C04 | Pack of 12 abrasive paper sheets, 240 grit |
| IP0227-C05 | Pack of 12 abrasive paper sheets, 150 grit |
| IP0227-C06 | Silicone carbide powder, 150 grit, 0.5 kg |
| TA012C-N00 | ASTM 12C thermometer (-20°C/+102°C) |

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.



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HOT FILTRATION TEST APPARATUS ASTM D4870 - IP 375

The apparatus consists of a support hosting two filtering units. A unique mechanism permits to the operator to stay far from hot parts of the instrument during the operations to avoid risks of burnings.



Manual apparatus with steam generator
and pump

- Two chromium plated brass filtering units with heating coils fitted with hose connectors and silicon tubes to the manifold.
- Insulating supports for the two funnels.
- Mechanical device to firmly press the cups against the funnels.
- Stainless steel manifolds.
- Vacuum valve to connect the funnels to the vacuum line with leverage on the front of the apparatus.
- Two separated vacuum circuits with two gauges.
- Semiautomatic version with a PLC that automatically controls the phases of the analysis through solenoid valves also available.

IP0375-100 Manual apparatus
IP0375-110 Semi-automatic apparatus
IP0390-100 Ageing bath for IP 390 test (4-place aluminium block) without glassware

ACCESSORIES

IP0375-A00 Vacuum pump
IP0375-A01 Fully automatic steam generator with safety pressure control. The steam generator has to be connected to a water source. For 220V/50 Hz connections

Note: vacuum pump and steam generator are parts of the apparatus and must be added to it in case they are not yet available in the laboratory.

CONSUMABLES

IP0375-C00 Pack of 100 Whatman GF/A Ø 47 mm filters
IP0375-C01 Sintered bronze filter support with OR gasket
IP0375-C02 Pack of 10 OR gaskets for filter support
IP0375-C03 Vacuum flask, 500 ml
IP0390-C00 Conical flask 50 ml capacity with bored cork, air condenser and rubber stopper
TA022C-N00 ASTM 22C thermometer (+95°C/+103°C)



Semi-automatic apparatus with steam generator
and pump

Specifications may vary without notice.

The apparatus includes the items listed aside the picture, accessories etc. should be purchased separately.

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ASTM thermometers

| N° ASTM | Description | Scale | Div. |
|---------|-------------------------------------|---------------|------|
| 1 C | Partial Immersion | -20/150 | 1/1 |
| 1 F | Partial Immersion | 0/+302 | 2/1 |
| 2 C | Partial Immersion | -5/+300 | 1/1 |
| 2 F | Partial Immersion | +20/+580 | 2/1 |
| 3 C | Partial Immersion | -5/+400 | 1/1 |
| 3 F | Partial Immersion | +20/+760 | 2/1 |
| 5 C | Cloud and Pour | -38/+50 | 1/1 |
| 5 F | Cloud and Pour | -36/+120 | 2/1 |
| 6 C | Low Cloud and Pour | -80/+20 | 1/1 |
| 6 F | Low Cloud and Pour | -112/+70 | 2/1 |
| 7 C | Low Distillation | -2/+300 | 1/1 |
| 7 F | Low Distillation | +30/+580 | 2/1 |
| 8 C | High Distillation | -2/+400 | 1/1 |
| 8 F | High Distillation | +30/+760 | 2/1 |
| 9 C | Pensky Martens Low | -5/+110 | 1/2 |
| 9 F | Pensky Martens Low | +20/+230 | 1/1 |
| 10 C | Pensky Martens High | +90/+370 | 2/1 |
| 10 F | Pensky Martens High | +200/+700 | 5/1 |
| 11 C | Open Flash | -6/+400 | 2/1 |
| 11 F | Open Flash | +20/+760 | 5/1 |
| 12 C | Density-Wide Range | -20/+102 | 1/5 |
| 12 F | Density-Wide Range | -5/+215 | 1/2 |
| 13 C | Loss on Heat | +155/+170 | 1/2 |
| 14 C | Paraffin Wax Helting P. | +38/+82 | 1/10 |
| 14 F | Paraffin Wax Helting P. | +100/+180 | 1/5 |
| 15 C | Low Softening Point | -2/+80 | 1/5 |
| 15 F | Low Softening Point | +30/+180 | 1/2 |
| 16 C | High Softening Point | +30/+200 | 1/2 |
| 16 F | High Softening Point | +85/+392 | 1/1 |
| 17 C | Saybolt Viscosity | +19/+27 | 1/10 |
| 17 F | Saybolt Viscosity | +66/+80 | 1/5 |
| 18 C | Reid Vapor Pressure | +34/+42 | 1/10 |
| 18 F | Reid Vapor Pressure | +94/+108 | 1/5 |
| 19 C | Saybolt Viscosity | +49/+57 | 1/10 |
| 19 F | Saybolt Viscosity | +120/+134 | 1/5 |
| 20 C | Saybolt Viscosity | +57/+65 | 1/10 |
| 20 F | Saybolt Viscosity | +134/+148 | 1/5 |
| 21 C | Saybolt Viscosity | +79/+87 | 1/10 |
| 21 F | Saybolt Viscosity | +174/+188 | 1/5 |
| 22 C | Oxidation Stability | +95/+103 | 1/10 |
| 22 F | Oxidation Stability | +204/+218 | 1/5 |
| 23 C | Engler Visc. | +18/+28 | 1/5 |
| 24 C | Engler Visc. | +39/+54 | 1/5 |
| 25 C | Engler Visc. | +95/+105 | 1/5 |
| 26 C | Stability Test of Solub. Nitrocell. | +130/+140 | 1/10 |
| 27 C | Turpentine Distillation | +147/+182 | 1/2 |
| 28 C | Kinematic Viscosity | +36,6/+39,4 | 1/20 |
| 28 F | Kinematic Viscosity | +97,5/+102,5 | 1/10 |
| 29 C | Kinematic Viscosity | +52,6/+55,4 | 1/20 |
| 30 F | Kinematic Viscosity | +207,5/+212,5 | 1/10 |
| 33 C | Low Aniline Point | -38/+42 | 1/5 |
| 33 F | Low Aniline Point | -36,5/+105,5 | 1/2 |
| 34 C | Aniline point | +25/+105 | 1/5 |
| 34 F | Aniline point | +77/+221 | 1/2 |
| 35 C | Aniline point | +90/+170 | 1/5 |

| | | | |
|------|------------------------------|---------------|------|
| 35 F | Aniline point | +194/+338 | 1/2 |
| 36 C | Titer Test | -2/+68 | 1/5 |
| 37 C | Solvent Distillation | -2/+52 | 1/5 |
| 38 C | Solvent Distillation | +24/+78 | 1/5 |
| 39 C | Solvent Distillation | +48/+102 | 1/5 |
| 40 C | Solvent Distillation | +72/+126 | 1/5 |
| 41 C | Solvent Distillation | +98/+152 | 1/5 |
| 42 C | Solvent Distillation | +95/+255 | 1/2 |
| 43 C | Kinematic Viscosity | -51,6/-34 | 1/10 |
| 43 F | Kinematic Viscosity | -61/-29 | 1/5 |
| 44 C | Kinematic Viscosity | +18,6/+21,4 | 1/20 |
| 44 F | Kinematic Viscosity | +66,5/+71,5 | 1/10 |
| 45 C | Kinematic Viscosity | +23,6/+26,4 | 1/20 |
| 45 F | Kinematic Viscosity | +74,5/+79,5 | 1/10 |
| 46 C | Kinematic Viscosity | +48,6/+51,4 | 1/20 |
| 46 F | Kinematic Viscosity | +119,5/+124,5 | 1/10 |
| 47 C | Kinematic Viscosity | +58,6/+61,4 | 1/20 |
| 47 F | Kinematic Viscosity | +137,5/+142,5 | 1/10 |
| 48 C | Kinematic Viscosity | +80,6/+83,4 | 1/20 |
| 48 F | Kinematic Viscosity | +177,5/+182,5 | 1/10 |
| 49 C | Stormer Viscosity | +20/+70 | 1/5 |
| 50 F | Gas Calorimeter Inlet | +54/+101 | 1/10 |
| 51 F | Gas Calorimeter Outlet | +69/+116 | 1/10 |
| 52 C | Butadiene Boiling Point Ran. | -10/+5 | 1/10 |
| 53 C | Benzene Freezing Point | -0,6/+10,4 | 1/10 |
| 54 C | Congealing Point | +20/+100,6 | 1/5 |
| 54 F | Congealing Point | +68/+213 | 1/2 |
| 56 C | Bomb Calorimeter | +19/+35 | 1/50 |
| 56 F | Bomb Calorimeter | +66/+95 | 1/20 |
| 57 C | Tag Closed tester Low Range | -20/+50 | 1/2 |
| 57 F | Tag Closed tester Low Range | -4/+122 | 1/1 |
| 58 C | Tank Refl. Red | -34/+49 | 1/2 |
| 58 F | Tank Refl. Red | -30/+120 | 1/1 |
| 59 C | Tank Refl. Red | -18/+82 | 1/2 |
| 59 F | Tank Refl. Red | 0/+180 | 1/1 |
| 60 C | Tank Refl. Red | +77/+260 | 1/1 |
| 60 F | Tank Refl. Red | +170/+500 | 2/1 |
| 61 C | Petrolatum Melting P. | +32/+127 | 1/5 |
| 61 F | Petrolatum Melting P. | +90/+260 | 1/2 |
| 62 C | Precision | -38/+2 | 1/10 |
| 62 F | Precision | -36/+35 | 1/5 |
| 63 C | Precision | -8/+32 | 1/10 |
| 63 F | Precision | +18/+89 | 1/5 |
| 64 C | Precision | +25/+55 | 1/10 |
| 64 F | Precision | +77/+131 | 1/5 |
| 65 C | Precision | +50/+80 | 1/10 |
| 65 F | Precision | +122/+176 | 1/5 |
| 66 C | Precision | +75/+105 | 1/10 |
| 66 F | Precision | +167/+221 | 1/5 |
| 67 C | Precision | +95/+155 | 1/5 |
| 67 F | Precision | +203/+311 | 1/2 |
| 68 C | Precision | +145/+205 | 1/5 |
| 68 F | Precision | +293/+401 | 1/2 |
| 69 C | Precision | +195/+305 | 1/2 |
| 69 F | Precision | +383/+581 | 1/1 |
| 70 C | Precision | +295/+405 | 1/2 |
| 70 F | Precision | +563/+761 | 1/1 |
| 71 C | Oil in Wax | -37/+21 | 1/2 |
| 71 F | Oil in Wax | -35/+70 | 1/1 |

| | | | |
|-------|------------------------------|---------------|-------|
| 72 C | Kinematic Viscosity | -19,4/-16,6 | 1/20 |
| 72 F | Kinematic Viscosity | -2,5/+2,5 | 1/10 |
| 73 C | Kinematic Viscosity | -41,4/-38,5 | 1/20 |
| 73 F | Kinematic Viscosity | -42,5/-37,5 | 1/10 |
| 74 C | Kinematic Viscosity | -55,4/-52,6 | 1/20 |
| 74 F | Kinematic Viscosity | -67,5/-62,5 | 1/10 |
| 75 F | Antifreeze Freezing Point | -35/+35 | 1/2 |
| 76 F | Antifreeze Freezing Point | -65/+5 | 1/2 |
| 77 F | Saybolt Viscosity | +245/+265 | 1/2 |
| 78 F | Saybolt Viscosity | +295/+315 | 1/2 |
| 79 F | Saybolt Viscosity | +345/+365 | 1/2 |
| 80 F | Saybolt Viscosity | +395/+415 | 1/2 |
| 81 F | Saybolt Viscosity | +445/+465 | 1/2 |
| 82 C | Fuel Rating Engine | -15/+105 | 1/1 |
| 82 F | Fuel Rating Engine | 0/+220 | 2/1 |
| 83 C | Fuel Rating Air | +15/+70 | 1/1 |
| 83 F | Fuel Rating Air | +60/+160 | 1/1 |
| 84 C | Fuel Rating Orifice Tank | +25/+80 | 1/1 |
| 84 F | Fuel Rating Orifice Tank | +75/+175 | 1/1 |
| 85 C | Fuel Rating Surge | +40/+150 | 1/1 |
| 85 F | Fuel Rating Surge | +100/+300 | 2/1 |
| 86 C | Fuel Rating mix | +95/+175 | 1/1 |
| 86 F | Fuel Rating mix | +200/+350 | 2/1 |
| 87 C | Fuel Rating Coolant | +150/+205 | 1/1 |
| 87 F | Fuel Rating Coolant | +300/+400 | 1/1 |
| 88 C | Vegetable Oil Flash | +10/+200 | 1/1 |
| 88 F | Vegetable Oil Flash | +50/+392 | 2/1 |
| 89 C | Solidification Point | -20/+10 | 1/10 |
| 90 C | Solidification Point | 0/+30 | 1/10 |
| 91 C | Solidification Point | +20/+50 | 1/10 |
| 92 C | Solidification Point | +40/+70 | 1/10 |
| 93 C | Solidification Point | +60/+90 | 1/10 |
| 94 C | Solidification Point | +80/+110 | 1/10 |
| 95 C | Solidification Point | +100/+130 | 1/10 |
| 96 C | Solidification Point | +120/+150 | 1/10 |
| 97 C | Tank Refl. Red | -18/+49 | 1/2 |
| 97 F | Tank Refl. Red | 0/+120 | 1/1 |
| 98 C | Tank Refl. Red | +15/+82 | 1/2 |
| 98 F | Tank Refl. Red | +60/+180 | 1/1 |
| 99 F | Weathering Test | -55/+40 | 1/2 |
| 100 C | Solidification Point | +145/+205 | 1/5 |
| 101 C | Solidification Point | +195/+305 | 1/2 |
| 102 C | Solvents Distillation | +123/+177 | 1/5 |
| 103 C | Solvents Distillation | +148/+202 | 1/5 |
| 104 C | Solvents Distillation | +173/+227 | 1/5 |
| 105 C | Solvents Distillation | +198/+252 | 1/5 |
| 106 C | Solvents Distillation | +223/+277 | 1/5 |
| 107 C | Solvents Distillation | +248/+302 | 1/5 |
| 108 F | Saybolt Viscosity | +270/+290 | 1/2 |
| 109 F | Saybolt Viscosity | +320/+340 | 1/2 |
| 110 C | Kinematic Viscosity | +133,6/+136,4 | 1/20 |
| 110 F | Kinematic Viscosity | +272,5/+277,5 | 1/10 |
| 111 C | Tar Acids Distillation | +170/+250 | 1/5 |
| 112 C | Solidific. Point of Benzene | +4/+6 | 1/50 |
| 113 C | Bituminous Mat. Softening P. | -1/+175 | 1/2 |
| 113 F | Bituminous Mat. Softening P. | +30/+350 | 1/1 |
| 114 C | Aviation Fuel Freezing Point | -80/+20 | 1/2 |
| 116 C | Bomb Calorimeter | +18,9/+25,1 | 1/100 |
| 117 C | Bomb Calorimeter | +23,9/+30,1 | 1/100 |

| | | | |
|-------|-----------------------------|---------------|------|
| 118 C | Kinematic Viscosity | +28,6/+31,4 | 1/20 |
| 118 F | Kinematic Viscosity | +83,5/+88,5 | 1/10 |
| 119 C | Coolant Freezing Point | -38,3/-30 | 1/10 |
| 120 C | Kinematic Viscosity | +38,6/+41,4 | 1/20 |
| 121 C | Kinematic Viscosity | +98,6/+101,4 | 1/20 |
| 122 C | Brookfield Viscosity | -45/+35 | 1/10 |
| 123 C | Brookfield Viscosity | -35/-25 | 1/10 |
| 124 C | Brookfield Viscosity | -25/-15 | 1/10 |
| 125 C | Brookfield Viscosity | -15/-5 | 1/10 |
| 126 C | Kinematic Viscosity -26,1 C | -27,4/-24,6 | 1/20 |
| 126 F | Kinematic Viscosity -15 F | -17,5/-12,5 | 1/10 |
| 127 C | Kinematic Viscosity | -21,4/-18,6 | 1/20 |
| 128 C | Kinematic Viscosity | -1,4/+1,4 | 1/20 |
| 128 F | Kinematic Viscosity | +29,5/+34,5 | 1/10 |
| 129 C | Kinematic Viscosity | +91,6/+94,4 | 1/20 |
| 129 F | Kinematic Viscosity | +197,5/+202,5 | 1/10 |
| 130 C | Tank | -7/+105 | 1/2 |
| 130 F | Tank | +20/+220 | 1/1 |

IP thermometers

| N° IP | Description | Scale | Div. |
|-------------------------------|----------------------------|---------------|------|
| 1 C | Cloud and Pour | -38/+50 | 1/1 |
| 1 F | Cloud and Pour | -36/+120 | 2/1 |
| 2 C | Low Cloud and Pour | -80/+20 | 1/1 |
| 2 F | Low Cloud and Pour | -112/+70 | 2/1 |
| 3 C | Demulsification | -1/+105 | 1/2 |
| 3 F | Demulsification | +30/+220 | 1/1 |
| 4 C | Crude Oil Distillation | -4/+360 | 2/1 |
| 5 C | Low Distillation | -2/+300 | 1/1 |
| 6 C | High Distillation | -2/+400 | 1/1 |
| 8 C | Redwood Low | 0/+45 | 1/5 |
| 8 F | Redwood Low | +30/+110 | 1/2 |
| 9 C | Redwood Medium | +40/+85 | 1/5 |
| 9 F | Redwood Medium | +100/+180 | 1/2 |
| 10 C | Redwood High | +76/+122 | 1/5 |
| 10 F | Redwood High | +170/+250 | 1/2 |
| 14 C | Cold Test | -80/+20 | 1/2 |
| 15 C | Pensky Martens Low | -7/+110 | 1/2 |
| 15 F | Pensky Martens Low | +20/+230 | 1/1 |
| 16 C | Pensky Martens High | +90/+370 | 2/1 |
| 16 F | Pensky Martens High | +200/+700 | 5/1 |
| 17 C | Wax Melting Point | +38/+82 | 1/10 |
| 17 F | Wax Melting Point | +100/+180 | 1/5 |
| 18 C | Congealing Point | +20/+100,6 | 1/5 |
| 18 F | Congealing Point | +68/+213 | 1/2 |
| 20 C | Aniline Point Low | -38/+42 | 1/5 |
| 21 C | Aniline Point Medium | +25/+105 | 1/5 |
| 22 C | Oxidation | +195/+205 | 1/10 |
| 23 C | Reid Vapour Pressure | +34/+42 | 1/10 |
| 23 F | Reid Vapour Pressure | +94/+108 | 1/5 |
| 24 C | Oxidation Stability | +95/+103 | 1/10 |
| 24 F | Oxidation Stability | +204/+218 | 1/5 |
| ABEL OIL CUP CELSIUS | | +10/+65 | 1/2 |
| ABEL OIL CUP FAHRENHEIT | | +50/+150 | 1/1 |
| ABEL WATER BATH CELSIUS | | +32/+88 | 1/2 |
| ABEL WATER BATH FAHRENHEIT | | +90/+190 | 1/1 |
| 28 C | Cleveland Open Flash | -6/+400 | 2/1 |
| 28 F | Cleveland Open Flash | +20/+760 | 5/1 |
| 29 C | Kinematic Viscosity 20°C | +18,6/+21,4 | 1/20 |
| 29 F | Kinematic Viscosity 68°F | +66,5/+71,5 | 1/10 |
| 30 C | Kinematic Viscosity 25°C | +23,6/+26,4 | 1/20 |
| 30 F | Kinematic Viscosity 77°F | +74,5/+79,5 | 1/10 |
| 31 C | Kinematic Viscosity 37,8°C | +36,6/+39,4 | 1/20 |
| 31 F | Kinematic Viscosity 100°F | +97,5/+102,5 | 1/10 |
| 32 C | Kinematic Viscosity 98,9°C | +98,6/+101,4 | 1/20 |
| 32 F | Kinematic Viscosity 210°F | +208,5/+213,5 | 1/10 |
| 33 C | Kinematic Viscosity 0°F | -2/+2 | 1/20 |
| 33 F | Kinematic Viscosity 32°F | +29/+35 | 1/10 |
| 34 C | Kinematic Viscosity 54,4°C | +52,5/+56,5 | 1/20 |
| 34 F | Kinematic Viscosity 130°F | +127/+133 | 1/10 |
| 35 C | Kinematic Viscosity 60°C | +58/+62 | 1/20 |

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|------|--------------------------------|---------------|------|
| 35 F | Kinematic Viscosity 140°F | +137/+145 | 1/10 |
| 36 C | Kinematic Viscosity 93,3°C | +91/+95 | 1/20 |
| 36 F | Kinematic Viscosity 200°F | +197/+203 | 1/10 |
| 37 C | Sludge | +144/+156 | 1/5 |
| 38 C | Penetration and ductility | +23/+27 | 1/10 |
| 39 C | Density | +1/+38 | 1/10 |
| 39 F | Specific Gravity | +30/+100 | 1/5 |
| 40 C | Drop Point Low | +20/+120 | 1/1 |
| 41 C | Drop Point High | +100/+230 | 1/1 |
| 42 C | Breaking Point | -38/-30 | 1/2 |
| 43 C | FP - Cut - Back (Int) | +10/+110 | 1/2 |
| 43 F | FP - Cut - Back (Int) | +50/+230 | 1/1 |
| 44 C | FP - Cut - Back (Int) | +15/+121 | 1/2 |
| 44 F | FP - Cut - Back (Int) | +60/+250 | 1/1 |
| 45 C | Refractometer | +15/+22 | 1/10 |
| 46 C | Gravity Balance | +14,5/+21 | 1/10 |
| 46 F | Gravity Balance | +58/+70 | 1/5 |
| 47 C | Loss on Heating | +155/+170 | 1/2 |
| 48 C | Tank Low | -38/+30 | 1/2 |
| 49 C | Tank Medium | -15/+40 | 1/2 |
| 50 C | Tank High | +10/+65 | 1/2 |
| 51 C | Tank Heated Fuel | +35/+120 | 1/2 |
| 52 C | Tank Bitumen | +90/+260 | 1/1 |
| 53 C | Tank Cargo | 0/+80 | 1/2 |
| 59 C | Aniline Point Special | +90/+170 | 1/5 |
| 60 C | Ring and Ball Low | -2/+80 | 1/5 |
| 61 C | Ring and Ball High | +30/+200 | 1/2 |
| 62 C | Drop Point Special | -5/+300 | 1/1 |
| 62 F | Drop Point Special | +20/+580 | 2/1 |
| 63 C | MP Petrolatum | +32/+127 | 1/5 |
| 64 C | Density Wide Range | -20/+102 | 1/5 |
| 64 F | Specific Gravity Wide | -5/+215 | 1/2 |
| 65 C | Kinematic Visc. Low | -51,6/-34 | 1/10 |
| 65 F | Kinematic Visc. Low | -61/-29 | 1/5 |
| 66 C | Kinematic Visc. Low 50°C | +48,6/+51,4 | 1/20 |
| 66 F | Kinematic Visc. Low 122°F | +119,5/+124,5 | 1/10 |
| 67 C | Kinematic Visc. Low -17,8°C | -19/-16 | 1/20 |
| 67 F | Kinematic Visc. Low 0°F + C320 | -2,5/+2,5 | 1/10 |
| 68 C | Kinematic Visc. - 40°C | -41,4/-38 | 1/20 |
| 68 F | Kinematic Visc. - 4°F | -42,5/-37,5 | 1/10 |
| 69 C | Kinematic Visc. - 53,9°C | -55/-52 | 1/20 |
| 69 F | Kinematic Visc. - 65°F | -67,5/-62,5 | 1/10 |
| 70 C | Tost | +72/+126 | 1/5 |
| 71 C | Kinematic Visc. - 26,1°F | -27,5/-24,7 | 1/20 |
| 71 F | Kinematic Visc. - 15°F | -17,5/-12,5 | 1/10 |
| 72 C | Oil in Wax | -37/+21 | 1/2 |
| 72 F | Oil in Wax | -35/+70 | 1/1 |
| 73 C | Partial Immersion | -5/+400 | 1/1 |
| 73 F | Partial Immersion | +20/+760 | 2/1 |
| 74 C | Abel Oil Cup Wide Range | -35/+70 | 1/2 |
| 74 F | Abel Oil Cup Wide Range | -35/+160 | 1/1 |
| 75 C | Abel Oil Water Bath Wide Range | -30/+80 | 1/2 |
| 75 F | Abel Water Bath Wide Range | -25/+180 | 1/1 |
| 76 C | Engler Viscosity | +10/+55 | 1/2 |
| 77 C | Solvents Distillation | -2/+52 | 1/5 |
| 78 C | Solvents Distillation | +24/+78 | 1/5 |
| 79 C | Solvents Distillation | +48/+102 | 1/5 |
| 80 C | Solvents Distillation | +72/+126 | 1/5 |
| 81 C | Solvents Distillation | +98/+152 | 1/5 |

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|-------|-----------------------|---------------|------|
| 82 C | Solvents Distillation | +95/+255 | 1/2 |
| 83 C | Solvents Distillation | +123/+177 | 1/5 |
| 84 C | Solvents Distillation | +148/+202 | 1/5 |
| 85 C | Solvents Distillation | +173/+227 | 1/5 |
| 86 C | Solvents Distillation | +198/+252 | 1/5 |
| 87 C | Solvents Distillation | +223/+237 | 1/5 |
| 88 C | Solvents Distillation | +248/+302 | 1/5 |
| 89 C | Kinematic Viscosity | -1/+175 | 1/2 |
| 90 C | Kinematic Viscosity | +80/+83 | 1/20 |
| 91 C | Rapid Flash | 0/+110 | 1/1 |
| 92 C | Kinematic Viscosity | +38,6/+41,4 | 1/20 |
| 93 C | Kinematic Viscosity | +133,6/+136,4 | 1/20 |
| 94 C | Kinematic Viscosity | -45/-35 | 1/10 |
| 95 C | Brookfield Visc. | -35/-25 | 1/10 |
| 96 C | Brookfield Visc. | -25/-15 | 1/10 |
| 97 C | Brookfield Visc. | -15/-5 | 1/10 |
| 98 C | Rapid Flash High | +100/+300 | 2/1 |
| 99 C | Kinematic Viscosity | -21,4/-18,6 | 1/20 |
| 100 C | Kinematic Viscosity | +78,6/+81,4 | 1/20 |

Viscometer tubes

| CODE | ITEM |
|-------|---|
| 10003 | Cannon Fenske for transparent liquids size 25 |
| 10006 | Cannon Fenske for transparent liquids size 50 |
| 10009 | Cannon Fenske for transparent liquids size 75 |
| 10012 | Cannon Fenske for transparent liquids size 100 |
| 10015 | Cannon Fenske for transparent liquids size 150 |
| 10018 | Cannon Fenske for transparent liquids size 200 |
| 10020 | Cannon Fenske for transparent liquids size 250 |
| 10021 | Cannon Fenske for transparent liquids size 300 |
| 10024 | Cannon Fenske for transparent liquids size 350 |
| 10027 | Cannon Fenske for transparent liquids size 400 |
| 10030 | Cannon Fenske for transparent liquids size 450 |
| 10033 | Cannon Fenske for transparent liquids size 500 |
| 10036 | Cannon Fenske for transparent liquids size 600 |
| 10039 | Cannon Fenske for opaque liquids size 25 |
| 10042 | Cannon Fenske for opaque liquids size 50 |
| 10045 | Cannon Fenske for opaque liquids size 75 |
| 10048 | Cannon Fenske for opaque liquids size 100 |
| 10051 | Cannon Fenske for opaque liquids size 150 |
| 10054 | Cannon Fenske for opaque liquids size 200 |
| 10056 | Cannon Fenske for opaque liquids size 250 |
| 10057 | Cannon Fenske for opaque liquids size 30 |
| 10060 | Cannon Fenske for opaque liquids size 350 |
| 10063 | Cannon Fenske for opaque liquids size 400 |
| 10066 | Cannon Fenske for opaque liquids size 450 |
| 10069 | Cannon Fenske for opaque liquids size 500 |
| 10072 | Cannon Fenske for opaque liquids size 600 |
| 10075 | Ubbelohde size 0 for transparent liquids |
| 10078 | Ubbelohde size 0C for transparent liquids |
| 10081 | Ubbelohde size 0B for transparent liquids |
| 10084 | Ubbelohde size 1 for transparent liquids |
| 10087 | Ubbelohde size 1C for transparent liquids |
| 10090 | Ubbelohde size 1B for transparent liquids |
| 10093 | Ubbelohde size 2 for transparent liquids |
| 10096 | Ubbelohde size 2C for transparent liquids |
| 10099 | Ubbelohde size 2B for transparent liquids |
| 10102 | Ubbelohde size 3 for transparent liquids |
| 10105 | Ubbelohde size 3C for transparent liquids |
| 10108 | Ubbelohde size 3B for transparent liquids |
| 10111 | Ubbelohde size 4 for transparent liquids |
| 10114 | Ubbelohde size 4C for transparent liquids |
| 10117 | Ubbelohde size 4B for transparent liquids |
| 10120 | Ubbelohde size 5 for transparent liquids |
| 10190 | BS/IP/SL (S) suspended level size 1 for transparent liquids |
| 10193 | BS/IP/SL (S) suspended level size 2 for transparent liquids |
| 10196 | BS/IP/SL (S) suspended level size 3 for transparent liquids |
| 10199 | BS/IP/SL (S) suspended level size 4 for transparent liquids |
| 10202 | BS/IP/SL (S) suspended level size 5 for transparent liquids |
| 10205 | BS/IP/SL (S) suspended level size 6 for transparent liquids |
| 10208 | BS/IP/SL (S) suspended level size 7 for transparent liquids |
| 10211 | BS/IP/SL (S) suspended level size 8 for transparent liquids |
| 10214 | BS/IP/SL (S) suspended level size 9 for transparent liquids |
| 10223 | Cannon-Manning semi-micro for transparent liquids size 25 |
| 10226 | Cannon-Manning semi-micro for transparent liquids size 50 |
| 10229 | Cannon-Manning semi-micro for transparent liquids size 75 |
| 10232 | Cannon-Manning semi-micro for transparent liquids size 100 |
| 10235 | Cannon-Manning semi-micro for transparent liquids size 150 |
| 10241 | Cannon-Manning semi-micro for transparent liquids size 300 |
| 10244 | Cannon-Manning semi-micro for transparent liquids size 350 |
| 10247 | Cannon-Manning semi-micro for transparent liquids size 400 |
| 10250 | Cannon-Manning semi-micro for transparent liquids size 450 |

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| 10253 | Cannon-Manning semi-micro for transparent liquids size 500 |
| 10256 | Cannon-Manning semi-micro for transparent liquids size 600 |
| 20000 | BS/IP/RF U-tube for transparent liquids size A |
| 20001 | BS/IP/RF U-tube for transparent liquids size B |
| 20002 | BS/IP/RF U-tube for transparent liquids size C |
| 20003 | BS/IP/RF U-tube for transparent liquids size D |
| 20004 | BS/IP/RF U-tube for transparent liquids size E |
| 20005 | BS/IP/RF U-tube for transparent liquids size F |
| 20006 | BS/IP/RF U-tube for transparent liquids size G |
| 20007 | BS/IP/RF U-tube for transparent liquids size H |
| 10259 | BS/IP/RF U-tube for opaque liquids size 1 |
| 10262 | BS/IP/RF U-tube for opaque liquids size 2 |
| 10265 | BS/IP/RF U-tube for opaque liquids size 3 |
| 10268 | BS/IP/RF U-tube for opaque liquids size 4 |
| 10271 | BS/IP/RF U-tube for opaque liquids size 5 |
| 10274 | BS/IP/RF U-tube for opaque liquids size 6 |
| 10277 | BS/IP/RF U-tube for opaque liquids size 7 |
| 10280 | BS/IP/RF U-tube for opaque liquids size 8 |
| 10283 | BS/IP/RF U-tube for opaque liquids size 9 |
| 10286 | BS/IP/RF U-tube for opaque liquids size 10 |
| 10289 | BS/IP/RF U-tube for opaque liquids size 11 |

Hydrometers - ASTM E 100 HYDR. test method

Calibrated at + 15°C – Shot weighed - 0,0005 Div. - DIN 1298 **W/O THERMOMETER** Length mm 335 approx.

| Item | Scale |
|---------|------------------|
| 600 699 | 0.600/0.650 311H |
| 600 700 | 0.650/0.700 312H |
| 600 701 | 0.700/0.750 313H |
| 600 702 | 0.750/0.800 314H |
| 600 703 | 0.800/0.850 315H |
| 600 704 | 0.850/0.900 316H |
| 600 705 | 0.900/0.950 317H |
| 600 706 | 0.950/1.000 318H |
| 600 707 | 1.000/1.050 319H |
| 600 708 | 1.050/1.100 320H |

Hydrometers - ASTM E 100 HYDR. test method

Calibrated at + 15°C – Shot weighed - 0,0005 Div. - DIN 1298 **WITH THERMOMETER** Length mm 380 approx.

| Item | Scale |
|---------|------------------|
| 601 711 | 0.600/0.650 300H |
| 600 711 | 0.650/0.700 301H |
| 600 712 | 0.700/0.750 302H |
| 600 713 | 0.750/0.800 303H |
| 600 714 | 0.800/0.850 304H |
| 600 715 | 0.850/0.900 305H |
| 600 716 | 0.900/0.950 306H |
| 600 717 | 0.950/1.000 307H |
| 601 717 | 1.000/1.050 308H |
| 602 717 | 1.050/1.100 309H |