

Since 1901

TANAKA
Scientific Limited

TANAKA
AUTOMATIC PETROLEUM TESTERS

**AUTOMATIC
PETROLEUM TESTERS**

Based on 45 years of experience in manufacturing automated flash point testers, innovative 8th generation series has been released. The theme of the 8th generation is "Ergonomic, Versatile and Premium"

- Ergonomically designed display and switches for high visibility for everybody (universal design) and intuitive operation.
- Enhanced versatility including USB port for optional flash memory or key board, password protection and data storage(200 tests)
- All-in-one chassis design: compact, light-weight and premium exterior design.

Further improved Swing Arm assembly for easy setting and cleaning:

After inserting the test cup in the instrument, just lower the swing arm assembly onto the test cup to set all the necessary components for the test, including the ignition source, temperature sensor, flash detector and stirrer(in case of abl-8 and apm-8). After the test, tilt the arm to the complete upright position for easy cleaning.

Abel Closed Cup Flash Point Tester Model *abl-8a/abl-8l*

Model abl-8 is an automated Abel Closed Cup flash point tester to cover flammable and combustible materials for shipping and safety regulations.

Heating/cooling is by energy efficient Peltier modules attached to a metal block bath. Air-cooled model abl-8a and liquid cooled model abl-8l are available for different temperature ranges. (Model abl-8l requires an optional chiller.)

- **Test Method:** ISO 13736, ISO 1516/1523, IP 170
- **Measuring Range:** +10°C to +110°C for abl-8a; -30 °C to +110°C for abl-8l(with an optional chiller)
- **Ignition source:** Gas flame or Electric Coil
- **Temperature Sensor:** PT-100 in stainless steel sheath
- **Flash Detector:** CRC Thermocouple.
- **Power consumption:** 250W
- **Size:** 230 (W)×470 (D) ×385 (H)mm
- **Net Weight:** 16kg



(Shown with optional USB keyboard)

TAG Closed Cup Flash Point Tester Model *atg-8w/atg-8l*

Model atg-8 is an automated Tag Closed Cup flash point tester.

In addition to model atg-8w with conventional water bath, model atg-8l with metal block bath is available for low temperature range. The cooling/heating for model atg-8l is by liquid cooled Peltier modules. (Model atg-8l requires an optional chiller.)

- **Test Method:** ASTM D56, IP 304, JIS K2265-1
- **Measuring Range:** ambient to +95°C for atg-8w, -20°C to +95°C for atg-8l (with an optional chiller)
- **Ignition source:** Gas flame or Electric Coil
- **Temperature Sensor:** PT-100 in stainless steel sheath
- **Flash Detector:** CRC Thermocouple.
- **Operating Environment:** 10°C to 35°C
- **Power consumption:** 500W(atg-8w), 250W(atg-8l)
- **Size:** 230 (W)×470 (D) × 385 (H)mm
- **Net Weight:** 17kg



Pensky-Martens Closed Cup Flash Point Tester Model *apm-8*

Model apm-8 is an automated Pensky-Martens Closed Cup flash point tester.

Three test procedures are built in for varied samples: Procedure-A for homogeneous petroleum liquids such as distillate fuels, Procedure-B for residual fuel oils and some other non-homogeneous liquids, and Procedure-C for biodiesel.

- **Test Method:** ISO 2719, ASTM D93, IP34 JIS K 2265-3
- **Measuring Range:** Ambient to 370°C
- **Ignition source:** Gas flame or Electric Coil
- **Temperature Sensor:** PT-100 in stainless steel sheath
- **Flash Detector:** CRC Thermocouple.
- **Power consumption:** 720W
- **Size:** 230 (W)×470 (D) × 385 (H)mm
- **Net Weight:** 17kg



Cleveland Open Cup Flash Point Tester Model *aco-8/aco-8as*

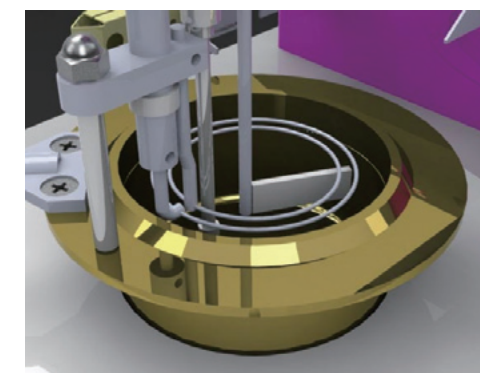
Model aco-8 is an automated Cleveland Open Cup(COC) flash & fire point tester.

Gas test flame is ignited automatically. Fire point is determined automatically when sustaining combustion has been detected for 5 sec.

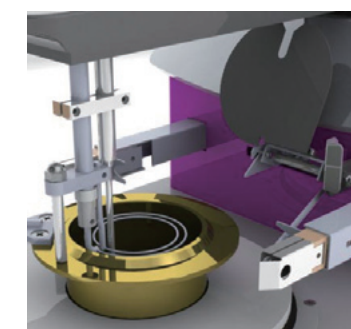
Fire containment by a metallic lid covers the test cup automatically when a sustained fire is detected.

Model aco-8as is for testing bituminous materials.

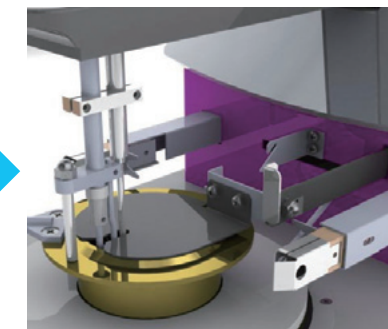
- **Test Method:** ISO 2592, ASTM D92, IP36, JIS K-2265-4
- **Measuring Range:** Ambient to 400°C
- **Ignition source:** Gas flame with 2 pilot electric coils.
- **Temperature Sensor:** PT-100 in stainless steel sheath
- **Flash/Fire Detector:** Double Ionization rings
- **Power consumption:** 1,000W
- **Size:** 230 (W)×470 (D) × 385 (H)mm
- **Net Weight:** 16kg



Model aco-8as for bitumen applications
(Equipped with TFE surface skin remover)



Fire containment lid in open position



Fire Containment lid closed

6 Positions Cleveland Open Cup Flash Point Tester Model ACO-T602

ACO-T602 automatically carries out COC flash point test of up to 6 samples continuously. For large sample numbers, this carousel model reduces the burden on the laboratory personnel.

○ Easy programming: Up to 6 types of sample data can be stored and later recalled for easy programming of routine tests.

○ Electric ignition: Reliable, easy, and safe

- **Related Test Method:** ISO 25921, ASTM D92/IP36, etc.
- **Type:** programmable with 6-position carousel
- **Ignition source:** electric coils x 2
- **Safety:** heater cut-off and fire containment lid
- **Size/weight:** control unit: 230(W) x 455(D) x 110(H) mm / 6kg
test unit: 405(W) x 515(D) x 400(H) mm / 32kg
- **Power consumption:** 1.5kW



Distillation Tester Model AD-6

Tanaka's 6th generation model AD-6 is an eco-friendly automated distillation tester with a built-in Peltier system which can cool and heat the condenser as well as the receiver compartment.

AD-6 has 11 preset programs and allows the operator to add other 15 programs. Just by selecting the program and setting the sample then pressing the start button, AD-6 carries out the distillation test process automatically and prints out the results by the built-in printer.

- **Test Methods:** ISO 3405, IP123, ASTM D86, D850/1078 (with optional accessories)
- **Range:** RT to 300°C/400°C(450°C version optional)

- **Condenser Temp:** 0 to 70°C
- **Receiver Room Temp:** 10 to 70°C
- **Operating Environment:** 10°C to 30°C
- **Power consumption:** 1.5kW
- **Size:** 400 (W)×520 (D)×700 (H)mm
- **Net Weight:** 55kg



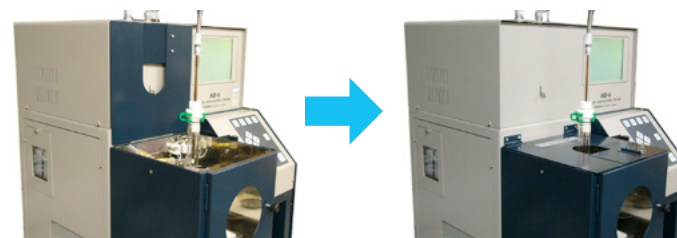
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COMPACT AND FULLY SELF-CONTAINED DESIGN

All the necessary electronics and mechanism are contained in a compact casing for ease of use and high reliability. The small footprint fits on a lab bench easily.

ENHANCED FIRE CONTAINMENT SYSTEM

In addition to an automatic N₂ gas injection system, an automatic mechanical shutter is employed for enhanced safety.



AD-6 DISPLAY SCREEN

< STANDBY 1 >
1 GASOL IN(300)
2 KEROSE IN(300)
3 NAPHTHA(300)
4 KEROSE IN(400)
5 GAS-OIL(400)
6
7
8
9
10
11
12
13

BAROMETER 1002 hPa
INIT TEMP1 250.08
INIT TEMP2 450.08
HEAT/FREEZE 91.5 %
FINAL H. (AUTO)+ 00%
TEMP RANGE 300
RESIDUE 1.0 %
DIST RATE 4.5%/m
SET BATH 00.5 %
SET REC 15.0 %
START TEMP 25.38
BATH TEMP 4.08
REC TEMP 14.78

Standby Screen

< TEST RESULT >
MODE(25) \$5 STD-A
IBP 75.58 555s
5 88.88 80s
10 91.58 4.6%
20 96.38 4.5%
30 101.98 4.4%
40 108.28 4.5%
50 116.08 4.4%
60 126.18 4.3%
70 139.28 4.4%
80 158.18 4.3%
90 183.18 4.3%
95 194.58
97 198.88
99 199.68 235s

DIST VOL 98.9 (%)
DIST TEMP 25.3 (°C)
DIST TIME 300 Sec
HEATER OUT 00 (%)
BATH TEMP 4.0 (°C)
REC TEMP 14.7 (°C)
HEAT TEMP 35.0 (°C)
RE CORR 11.0 (%)
PREV. RESULT OFF

Running Screen

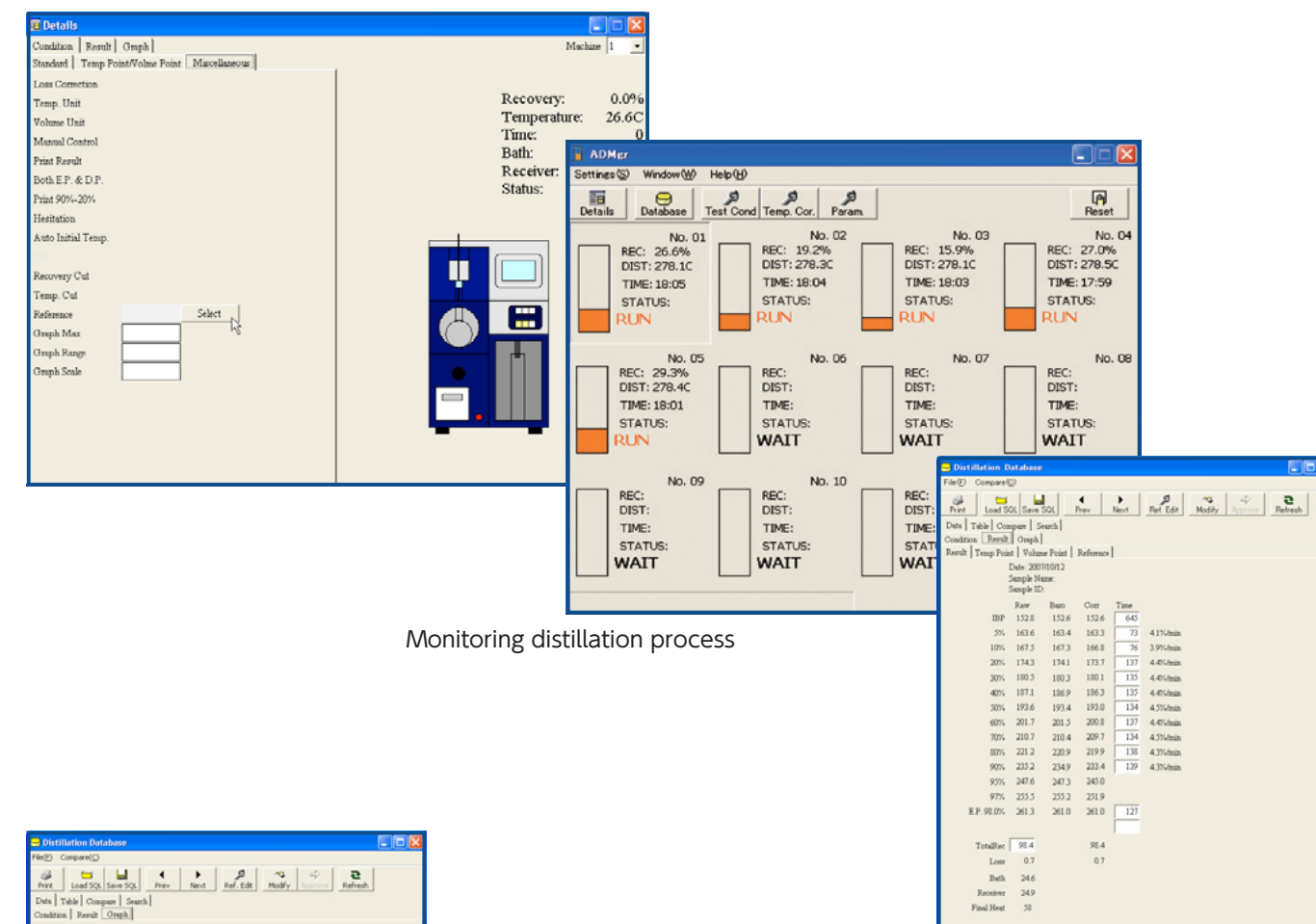
Dist Curve
IBP 75.58
E.P. 199.68
Vertical 20%/Div
Horizontal 10%/Div

Distillation Curve Screen

Optional Windows-based software ADMgr

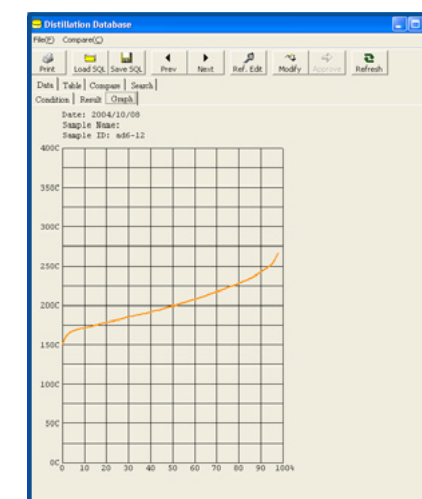
ADMgr allows operator to manage up to 12 sets of AD-6. The functions include: monitoring each distillation tester, receiving and saving data at PC, and setting and exporting distillation parameters to each AD-6. ADMgr can run on either Windows XP, VISTA or 7 platform.

ADMgr Display Screens



Monitoring distillation process

Test Results



Distillation Curve

Distillation Database

Condition	Result	Graph
IBP	150.9	148.5
5%	161.2	160.5
10%	164.6	166.0
20%	175.0	175.0
30%	184.4	184.5
40%	196.4	196.5
50%	208.6	208.0
60%	222.0	221.5
70%	233.9	234.0
80%	246.7	245.0
90%	263.0	261.0
95%	274.1	272.5
97%		
99%		
E.P.	278.2	279.5

Comparison with Saved Data

Distillation Database

Date	Sample	Target 1	Target 2	Target 3	Target 4	Target 5	Target 6	Target 7	Target 8	Target 9	Target 10	Target 11	Target 12
1471 16 PM	3010006	3010006	3010006	3010006	3010006	3010006	3010006	3010006	3010006	3010006	3010006	3010006	3010006
Machine No.	5	4	3	2	1	0	0	0	0	0	0	0	0
Sample Name	6331	6331	6331	6331	6331	6331	6331	6331	6331	6331	6331	6331	6331
IBP	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5	148.5
5%	160.5	160.5	160.5	160.5	160.5	160.5	160.5	160.5	160.5	160.5	160.5	160.5	160.5
10%	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0	166.0
20%	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0
30%	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
40%	196.5	196.5	196.5	196.5	196.5	196.5	196.5	196.5	196.5	196.5	196.5	196.5	196.5
50%	208.6	208.6	208.6	208.6	208.6	208.6	208.6	208.6	208.6	208.6	208.6	208.6	208.6
60%	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0
70%	233.9	233.9	233.9	233.9	233.9	233.9	233.9	233.9	233.9	233.9	233.9	233.9	233.9
80%	246.7	246.7	246.7	246.7	246.7	246.7	246.7	246.7	246.7	246.7	246.7	246.7	246.7
90%	263.0	263.0	263.0	263.0	263.0	263.0	263.0	263.0	263.0	263.0	263.0	263.0	263.0
95%	274.1	274.1	274.1	274.1	274.1	274.1	274.1	274.1	274.1	274.1	274.1	274.1	274.1
97%													
99%													
E.P.	278.2	278.2	278.2	278.2	278.2	278.2	278.2	278.2	278.2	278.2	278.2	278.2	278.2
Total Rec	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0

Saved test results

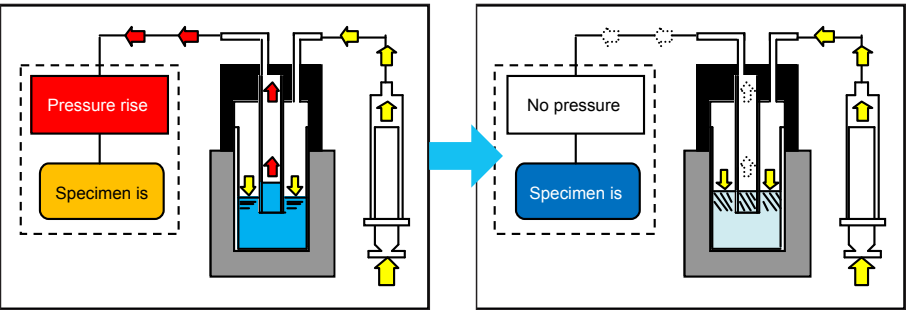
For the cold behavior tester series, unique and efficient cooling systems that do not require either large capacity chiller or methanol have been adopted. As a result, the maintenance cost as well as environmental burden have been greatly reduced.

Pour/Cloud Point Tester MPC Series

TANAKA’s MPCseries has been designed for automatic determination of POUR POINT (PP) and CLOUD POINT (CP) with small specimen size and shorter test cycle time while securing better test precision than the conventional manual methods. PP measurement is by “AIR PRESSURE METHOD” (ASTM D6749), and CP measurement is by “SMALL TEST JAR METHOD” (ASTM D7683). The epoch-making automatic PP test method yields 1°C test resolution, while the new CP method yields 0.1°C resolution.

- Test Standards: PP: ASTM D6749, ASTM D97, ISO 3016
CP: ASTM D7683, ASTM D2500, ISO 3015

PRINCIPLE OF POUR POINT DETECTION



Pour/Cloud Point Tester Model MPC-102S

ULTRA LOW TEMP WITHOUT LIQUID CHILLER

With a cryo block bath, model CB-80C manufactured by SCINICS®, MPC-102S works without an external liquid chiller.

COMPACT DESIGN & ENERGY EFFICIENT

A compact and energy efficient cryo block bath model CB-80C is capable of cooling the samples to -65°C without a liquid chiller. Electricity consumption is only 20% comparing to MPC-102L with external liquid chiller.

Model MPC-102S	
Type	Bench top, 1 position with a cryo block bath
Measuring range	+51°C to -65°C
Display	VFD
Ext. port	RS-232C
Size	300Wx460Dx320H, 222Wx407Dx238H(CB-80C)
Weight	11kg + 13kg(CB-80C)
Power cons.	50W + 150W (CB-80C)



(Shown with optional printer)

Pour/Cloud Point Tester Model MPC-102A/MPC-102L

	Model: MPC-102A	Model: MPC-102L
Type	Bench top, 1 position, with air cooled Peltier cooler	Bench top, 1 position, with liquid cooled Peltier cooler
Measuring range	+51 to -25°C in 25°C ambient	+51 to -65°C when used with 1 set of TCU-40B chiller(opt)
Display	VFD module	VFD module
Ext. port	RS-232C	RS-232C
Size	230(W)×480(D)×385(H) mm	230(W)×480(D)×385(H) mm
Weight	19kg	19kg
Power cons.	500W	500W



Pour/Cloud Point Tester Model MPC-302/MPC-602

	Model: MPC-302	Model: MPC-602
Type	Bench top, 3 positions, with liquid cooled Peltier cooler	Bench top, 6 positions, with liquid cooled Peltier cooler
Measuring range	+51 to -65°C when used with 2 sets of TCU-40B chiller(opt)	+51 to -65°C when used with 3 sets of TCU-40B chiller(opt)
Display	VFD modules(×3)	VFD modules(×6)
Ext. port	RS-232C	RS-232C
Size	800(W)×500(D)×800(H) mm	800(W)×550(D)×850(H) mm
Weight	75kg	100kg
Power cons.	1.0kW	1.5kW



※Note: Inquire delivery time.

CFPP Tester Model AFP-102/AFP-202

	Model: AFP-102	Model: AFP-202
Type	Bench top, 1 position, with liquid cooled Peltier cooler	Bench top, 2 positions, with liquid cooled Peltier cooler
Measuring range	Ambient to -60°C when used with 1 set of TCU-40B chiller(opt)	Ambient to -60°C when used with 1 set of TCU-40B chiller(opt)
Display	VFD modules	VFD modules(×2)
Ext. port	RS-232C	RS-232C
Size	350(W)×550(D)×480(H) mm	550(W)×600(D)×670(H) mm
Weight	27kg	50kg
Power cons.	500W	1kW



Test Standards: ASTM D6371, IP 309, etc.
※Note: Inquire delivery time.

Chiller Unit Model TCU-40B

- Temp range: -40°C to ambient
- Power consumption: 700W
- Cooling capacity: 349W at 20°C
- Size: 320(W)× 590(D)× 725(H) mm
- Dry weight: 60kg



Kinematic Viscosity Measuring System AKV-202

Model AKV-202 has been designed for automatic determination of Kinematic Viscosity.

Once sample is set, the series of process including timing, cleaning/drying, and reporting are fully automated. AKV-202 is an economical bench top system which saves not only the technicians' time but also valuable laboratory floor space.

- Test stds:** ISO 3104, ASTM D445, IP71, etc.
- Type:** bench top automatic KV measuring system with 2 viscometers in 1 bath
- Range:** 1 to 10,000mm²/s
- Viscometers:** modified Lanz-Zeitfuchs type
- Bath temp:** preset at 25, 40, 50, 80 and 100°C (+1 temp point available as option between 20-100°C)
- Size/dry weight:** 530(W) x 560(D) x 930(H) mm / 75kg
- Power consumption:** 2.2kW



Kinematic Viscosity Bath Model KV-6

Model KV-6 has been designed for manual determination of kinematic viscosity.

Microprocessor and built-in platinum resistance probe allows wide control range (20 to 150°C), one-touch temperature selection and on-screen temperature display.

- Test stds:** ISO 3104, ASTM D445, IP71, etc.
- Applicable viscometers:** Cannon-Fenske or Ubbelohde type (with Optional holder) x 7
- Bath temp:** preset at 25, 40, 50, 80, 100 and 135°C. Preset temperature can be changed at the factory between 20 and 150°C (option)
- Precision:** +/-0.01°C at 20°C to 100°C
- Size/dry weight:** 400(W) x 380(D) x 662(H) mm / 33kg
- Power consumption:** 1.8kW

For 20°C to 30°C, connect the built-in cooling pipe to tap water or a recirculating water chiller.



Optional 6-ch Quartz Timer, Model DSWV-6



Aniline Point Tester Model AAP-5

Model AAP-5 automatically determines aniline point for wide range of samples. The use of special infrared detector gives the instrument it's ability to see through dark/opaque samples such as power generation fuels and marine diesel oils. The measuring cell can be easily removed and placed on an analytical balance for weighing viscous samples which are solid at ambient temperature. The measuring cell can be cleaned without disassembling, which makes the cleaning easier and safer.

- Test stds:** ISO 2977, ASTM D611, etc.
- Samples:** transparent or opaque/dark (<8.0 on ASTM color scale) petroleum products
- Range:** ambient to 170°C (338°F), below RT with optional jacketed cell and external chiller.
- Sample cell:** modified U-tube
- Detection:** by photo-electric detector
- Size/weight:** 230(W) x 455(D) x 685(H) mm / 15kg
- Power consumption:** 100W



Colorimeter for Petroleum Products Model ACL-2

Model ACL-2 automatically determines Saybolt, ASTM and other colors utilizing the Tri-Stimulus method prescribed in ASTM D6045, which generates equivalent test results with the conventional manual methods' with up to ten times better precision, in typically 10 seconds. Since no subjective judgment needs to be called, a perfect traceability is achieved.

- Test stds:** ASTM D6045, JIS K2580
- Type:** Tri-stimulus filter colorimeter
- Color scales:** Saybolt, ASTM, Gardner and Platinum-Cobalt scales
- Sample cells:** glass cells or optional flow cells
- Size/weight:** 400(W) x 400(D) x 190(H) mm / 12.2kg
- Power consumption:** 130W



Micro Carbon Residue Tester Model ACR-M3

ACR-M3 automates the vaporizing/coking process of Micro carbon residue test, the result of which has been found well correlated with conventional Conradson method's. Furthermore, due to its more consistent process, it yields better precision. This second generation model has been further improved for its ease of use and test throughput.

- Test stds:** ISO 10370, ASTM D4530, etc.
- Range:** Up to 500°C
- N₂ gas flow rate:** automatically regulated, and displayed on the front panel
- Size/weight:** 350(W) x 390(D) x 460(H) mm / 21kg
- Power consumption:** 1.6kW
- Model ACR-M3 requires N₂ gas supply.**



Carbon Residue Tester Model ACR-6

ACR-6 automates the cracking/coking process of Conradson carbon residue test. The microprocessor controlled oven requires less experience to conduct the tedious process and therefore yields more consistent test result.

○Easy operation: Optimum heater output for prescribed burning process is programmed with ease prior to a test. Once a test starts, no further adjustment needs to be done.

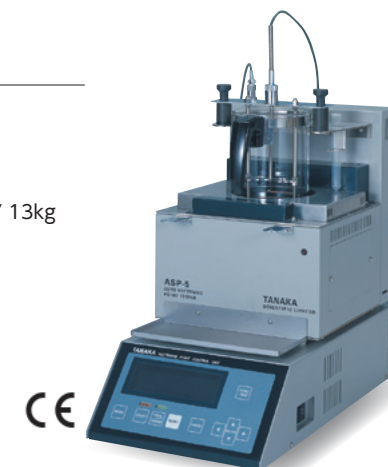
- Test stds:** ISO 6615, ASTM D189, IP 13, etc.
- Process control:** by microprocessor
- Ignition detection:** by sheathed thermocouple
- Size/weight:**
Control unit: 250(W) x 360(D) x 190(H) mm / 7.5kg
Oven: 190(W) x 260(D) x 440(H) / 5.5kg
- Power consumption:** 2.2kW



Softening Point Tester Model ASP-5

Model ASP-5 automates softening point test of bitumen and other materials by utilizing photo-electric device with a wide light beam, which assures reliable detection. Generation of harmful vapor from overheated glycerin is prevented by the safety shutdown. Furthermore, ASP-5 is small enough to be installed in a fume hood.

- Test stds:** ASTM D36, etc.
- Type:** ring and ball, 2 tests
- Range:** ambient to 200°C (392°F)
- Detection:** by a photo transmitter/receiver
- Size/weight:** 240(W) x 455(D) x 380(H) mm / 13kg
- Power consumption:** 1.5kW



Reid Method Vapor Pressure Tester Model AVP-30D

Model AVP-30D automatically measures Reid vapor pressure(RVP)utilizing a miniaturized bomb. While ease of operation and smaller instrument size are achieved with the smaller size bombs, test result precisely agrees with that of the regular size Reid bomb.

○Compact size: Width is merely 400mm.
○Reliable/efficient see-saw shaking mechanism.

- Related test stds:** ISO 3007, ASTM D323, IP69, etc.
- Type:** bench-top with 2, 3, or 4 Demi-size bombs
- Range:** 0 to 196kPa (2kgf/cm²)
- Bomb:** stainless steel bomb with approx. 60% in length and 30% in volume of regular Reid bomb
- Size/dry weight:** 400(W) x 600(D) x 740(H) mm / 45kg
- Power consumption:** 2kW
- Option:** manometer, air compressor
- AVP-30D comes with either 2, 3, Or 4 bombs. When inquiring, specify the number of bombs.**



EDXRF Sulfur Analyzer *fxe-400s*

Model *fxe-400s* is Tanaka's latest EDXRF sulfur analyzer equipped with an optimized X-ray pass and a high precision preamplifier developed through collaboration with Japan Atomic Energy Agency (JAEA). JAEA's simulation technology and high speed/high precision electronics have been utilized.

- High Precision: LOD=5mg/kg, Conforming to ASTM D4294-10
- X-Ray Pass Optimization yields significant reduction in background noise^(※)
- User friendly software embedded in PC for more power and reliability while improving user interface
- Triplex Paper Cell minimizes the risk of oil leak and contamination with minimum effort

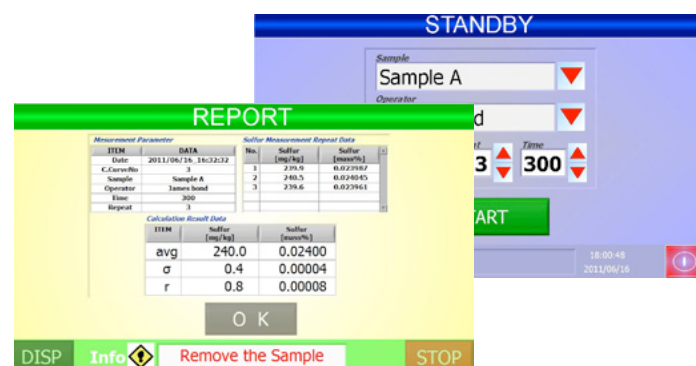
- **Standard:** ASTM D4294-10, ISO 8754 / 20847, JIS K2541-4
- **Measuring Range:** 15mg/kg to 6 mass% (when He purge)
- **Sample Volume:** 5ml
- **Sample Cell:** Disposable Paper Cell (Triplex)
- **X-Ray Source:** Air Cooled X-Ray Tube (rated 1W)
- **X-Ray Detector:** Gas Filled SPC (Sealed Proportional Counter)

- **Calibration Curve:** Upto10 Points, Linear, Quadratic curve or Broken Line. 10 x Calibration Curve can be stored
 - **Correction:** C/H Correction, Temperature Correction
 - **X-Ray Pass:** He Gas (>99.9%) or N2 Gas (>99.9%)
 - **Dimension and Weight:** 360(W) x 410(D) x 135(H) mm, 12.5kg
 - **Power Consumption:** 22W
- fxe-400s* requires either He or N₂



EASY OPERATION

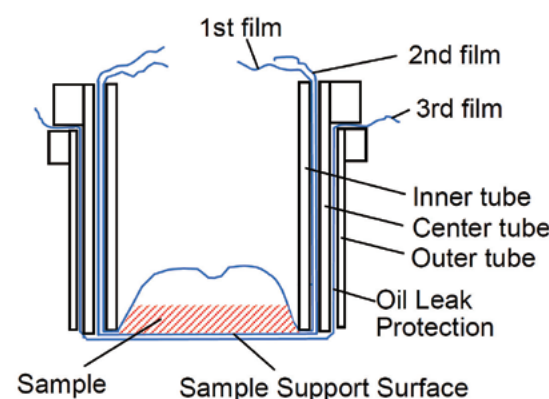
Interactive computer program and wide color LCD screen help an intuitive operation, thus accurate results can be obtained without any special training. Ergonomically color-coordinated display enhances visibility.



TRIPLEX PAPER CELL

Newly-developed triplex paper cell minimizes the risk of oil leak during a measurement and contamination of the detector.

Once oil leaked from sample support film, the edge of the paper cell absorbs leaked oil, and an extra film protects the detector from contamination. Operator can easily notice oil leak by the discolored paper cell.

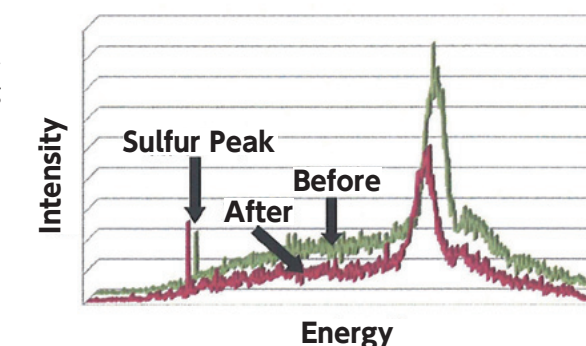


※About X-Ray Pass Optimization:

Through a collaboration program with Japan Atomic Energy Agency, X-ray propagation from X-ray tube to the detector has been simulated. By comparing simulation result and experimental result, geometries have been optimized.

- The parameters for X-ray pass optimization are:
- X-Ray Source (Power, Spectrum, Radiation Angle)
 - Materials used for X-Ray Pass
 - Shape/Composition of Sample and Film
 - X-Ray Pass Geometry (Length, Angle, Filter, etc.)
 - Structure of Detector

Performance of an XRF analyzer attributes to the interaction of each parameter. The graph illustrates a typical example of the simulation that has been made. The background at low energy region is reduced and Sulfur peak is increased. Thus measurement resolution was improved.



WDXRF Sulfur Analyze Model FX-700

Model FX-700 determines total sulfur in ultra low sulfur(ULS) fuels using wavelength dispersive X-ray fluorescence(WDXRF) method. Which is a quick, easy and economical technique. Thanks to its dedicated design for ULS, the operation has been simplified to the extreme. The standalone design does not require a PC, and the compact housing allows bench-top installation. Test results are displayed on LCD screen and printed out by a built-in printer.

- **Test stds:** ISO 20884, ASTM D2622-05, etc.
 - **Range:** 5 to 990 mg/kg
 - **Calibration curves:** 8 curves, linear or quadratic
 - **X-ray tube:** air cooled small X-ray tube, 40W
 - **Crystal:** germanium (111)
 - **Detector:** gas filled proportional counter
 - **Size/weight:** 600(W) x 500(D) x 520(H) mm / 66kg
 - **Power consumption:** 300W
- FX-700 requires Helium gas for purging



EDXRF Sulfur Meter (12 positions) Model RX-620SA

Model RX-620SA determines total sulfur in petroleum products using energy-dispersive X-ray fluorescence(EDXRF) method. Which is a quick, non-destructive, economical but yet accurate method. Once a sample is set, the total sulfur is determined automatically in 300sec (typical). RX-620SA is equipped with a 12-position carousel, for higher productivity.

- **Test stds:** ISO 8754, ASTM D4294-03, etc.
 - **Carousel:** 12 positions
 - **Range:** 0.003 to 6.00mass%
 - **Repeatability:** 10 mg/kg(as per ASTM D4294 designation)* at 0.008mass%
 - **Size/weight:** 560(W) x 515(D) x 245(H)mm/29kg
 - **Power consumption:** 200W
- *ASTM D4294 designates the repeatability in the range(r). In terms of standard deviation, 5ppm.



EDXRF Sulfur Meter Model RX-360SH

Model RX-360SH is a single test version of X-ray sulfur meter taking the same measuring principle as that of RX-620SA. Compact housing with a carrying handle and 2-way power source (100-240VAC or 12VDC battery) allows such applications as spot-checking in the field. The only consumable are small pieces of Mylar film and printing paper, making the running cost at minimal.

- **Test stds:** ISO 8754, ASTM D4294-03, etc.
 - **Range:** 0.003 to 6.00mass%
 - **Repeatability:** 10 mg/kg(as per ASTM D4294 designation)* at 0.008mass%
 - **Size/weight:** 420(W) x 350(D) x 140(H)mm/12.5kg
 - **Power consumption:** 100W
- *Refer to the note for RX-620SA

