TANAKA

Petroleum Testing & Beyond

2024-25

AUTOMATED FLASH POINT TESTERS

Pensky-Martens Closed Cup Flash Point Tester

apm-100

Since 1966, TANAKA has been delivering automated flash point testers to laboratories around the world, providing reliable results and high productivity to our valued customers.

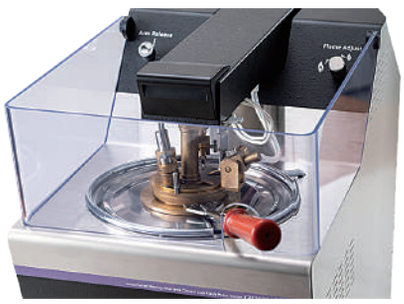
The latest addition to the flash point series is the automatic Pensky-Martens Closed Cup flash point tester model apm-100. This model inherits the SIMPLICITY, RELIABILITY, and ROBUSTNESS of the established apm-8, while enhancing the user friendliness and intuitiveness by introducing a color touch screen interface.

Other key new features include:

- Flexible **CUSTOM** modes to allow free setting of stirring speed, heating rate, ignition source application timing, pre-heating of sample, etc.
- **ONE-TOUCH** arm cover removal for easier igniter replacement and maintenance.
- Additional emergency switch at front panel for increased **SAFETY**.
- Replacement parts such as igniter, temperature sensor, flash detector, and sample cup are all **COMPATIBLE** with apm-8 to accommodate our long term happy users.

Key features inherited from the previous model:

- From the HOME window, **SIMPLY** select a default mode such as ASTM D93 / ISO 2719 Procedures A / B / C or ISO 15267, set the expected flash point, and START.
- Standard equipped with fire containment system.
- Easy **CONVERSION** between gas and electric ignition.



Fire containment system

Product Video

CE UK CA

Test Methods	ASTM D93, ISO 2719, ISO 15267, IP 34, JIS K 2265-3
Measuring Range	Ambient to 370 °C
Temperature Sensor	PT-100 in stainless steel sheath
Flash Detector	CRC thermocouple
Ignition Source	Gas ignition with automatic lighting or electric ignition, interchangeable
Test Modes	Default modes according to test methods. Custom modes also available.
I/O Port	USB x 2 , Ethernet x 1
Size (W x D x H)	240 mm x 480 mm x 400 mm
Weight	18 kg
Power Consumption	AC 100 V to 120 V 50 / 60 Hz 900 VA (max) AC 220 V to 240 V 50 / 60 Hz 900 VA (max)

Cleveland Open Cup Flash Point Tester

aco-100 / aco-100as

The aco-100 is an automated Cleveland Open Cup (COC) flash & fire point tester. Ignition source can be changed from gas to electric or vice versa.
The 'as' model (aco-100as) comes with a skimmer which automatically removes any surface film before applying the ignition source. All models are standard equipped with a fire containment lid.

NEW

Product Video ▶

CE UK CA

Test Methods	ASTM D92, ASTM D8254, ISO 2592, IP 36, JIS K 2265-4, AASHTO T48
Measuring Range	Ambient to 400 ˚C
Test Modes	Default modes according to test methods. Custom modes also available.
Temperature Sensor	PT-100 in stainless steel sheath
Flash Detector	Double ionization rings
Ignition Source	Gas ignition: Test flame automatic ignition Electric ignition: Electric Igniter
I/O Port	USB x 2, Ethernet x 1
Size (W x D x H)	240 mm x 480 mm x 410 mm
Weight	18 kg
Power Consumption	AC 100 V to 120 V 50 / 60 Hz 1500VA, AC 220 V to 240 V 50 / 60 Hz 1500 VA

Tag Closed Cup Flash Point Tester

NEW

atg-100w

atg-100w model is equipped with conventional water bath.
Measuring range of 0 ℃ can be reached with external chiller.
This model is standard equipped with fire containment system.
It can contain fire effectively by flowing quenching gas (N_2 or CO_2) from external connection port.
Ignition method can easily be converted between gas and electric.

CE UKCA

Test Methods	ASTM D56, JIS K 2265-1
Measuring Range	0 ℃* to 95 ℃ * External chiller mandatory below room temperature.
Temperature Sensor	PT-100 in stainless steel sheath
Flash Detector	CRC thermocouple
Ignition Source	Gas ignition with automatic lighting or electric ignition. Interchangeable
Heating / Cooling	Plate Heater / Water Cooling
I/O Port	USB x 2, Ethernet x 1
Size (W x D x H)	240 mm x 510 mm x 400 mm
Weight	18 kg
Power Consumption	AC 100 V to 120 V 50 / 60 Hz 600 VA AC 220 V to 240 V 50 / 60 Hz 500 VA

Tag Closed Cup Flash Point Tester

atg-8wfc / atg-8afc / atg-8lfc

atg-8 is an automated Tag Closed Cup flash point tester. Model atg-8wfc is with conventional water bath. Model atg-8afc and atg-8lfc are available for low temperature range. The cooling / heating for these models are done by Peltier modules (Model atg-8lfc requires an external chiller). Furthermore, all models are standard equipped with fire containment system. It can contain fire effectively by flowing quenching gas (N_2 or CO_2) from external connection port. Ignition method can easily be converted between gas and electric.

CE UKCA

Test Methods	ASTM D56, JIS K 2265-1
Measuring Range	Ambient to +95 ℃ for atg-8wfc +5 ℃ to +75 ℃ for atg-8afc -20 ℃ to +95 ℃ for atg-8lfc (External chiller mandatory)
Temperature Sensor	PT-100 in stainless steel sheath
Flash Detector	CRC thermocouple
Ignition Source	Gas flame or electric coil
I/O Port	RS-232C x 1, USB x 1
Size (W x D x H)	240 mm x 480 mm x 390 mm
Weight	19 kg
Power Consumption	atg-8wfc : AC 100 V to 120 V 50 / 60 Hz 500 VA (max) AC 220 V to 240 V 50 / 60 Hz 400 VA (max) atg-8afc / atg-8lfc : AC 100 V to 240 V 50 / 60 Hz 300 VA (max)

Fire containment system

Abel Closed Cup Flash Point Tester

abl-8afc / abl-8lfc

Fire containment system

The abl-8 is an automated Abel Closed Cup flash point tester. Heating / cooling is done by energy efficient Peltier modules attached to a metal block bath.
Air-cooled model abl-8afc and liquid cooled model abl-8lfc are available for different temperature ranges (Model abl-8lfc requires an external chiller). All models are standard equipped with fire containment system. Ignition method can easily be converted between gas and electric.

CE UKCA

Test Methods	ISO 13736, IP 170, ISO 1516, ISO 1523
Measuring Range	+10 ˚C to +110 ˚C for abl-8a -30 ˚C to +110 ˚C for abl-8l (External chiller mandatory)
Temperature Sensor	PT-100 in stainless steel sheath
Flash Detector	CRC thermocouple
Ignition Source	Gas flame or electric coil
I/O Port	RS-232C x 1, USB x 1
Size (W x D x H)	240 mm x 480 mm x 390 mm
Weight	19 kg
Power Consumption	AC 100 V to 240 V 50 / 60 Hz 300 VA (max)

Small Scale Closed Cup Flash Point Tester

asc-8c / asc-8h

The latest addition to Tanaka's flash point series is the automated small scale closed cup flash point tester, asc-8c. Compared to conventional flash point methods, this model requires very small sample volume (2 mL or 4 mL). To accommodate various methods, this model is equipped with Flash / No Flash mode, Ramp mode, CRM mode, and Custom mode. Two models (asc-8c and asc-8h) are available to cover different temperature ranges. Ignition method can easily be converted between gas and electric.

CE UKCA

Test Methods	ASTM D3278, ASTM D3828, ASTM D7236, ISO 3679, ISO 3680, IP 534, JIS K 2265-2
Measuring Range	asc-8c : -20 ˚C to 135 ˚C -30 ˚C to 135 ˚C (External chiller mandatory) asc-8h : Ambient to 300 ˚C
Temperature Sensor	PT-100 in stainless steel sheath
Flash Detector	CRC thermocouple
Ignition Source	Gas flame or electric coil
I/O Port	RC-232C x 1, USB x 1
Size (W x D x H)	240 mm x 480 mm x 390 mm
Weight	asc-8c : 19 kg asc-8h : 18 kg
Power Consumption	AC 100 V to 240 V 50 / 60 Hz asc-8c : 400 VA (max) asc-8h : 250 VA (max)

Automated Distillation Tester

ad-7

Ergonomic, Robust and Versatile

It has been over 50 years since Tanaka started manufacturing automated distillation testers.
Nowadays, we deliver to customers in more than 70 countries.
The ad-7 automatically performs distillation test of petroleum products as well as narrow boiling range samples.
Optional dry point sensor is available for solvents.
A 10.4 inch LCD touch screen has been adopted for easy and intuitive operation.
Peltier system is employed for cooling / heating of the condenser and receiver cylinder compartment.
Robust design with built-in printer offers long time reliable usage and easy on-site review of the data.

User-friendliness

- 10.4 inch (*) Color LCD. * 4 times larger than previous model
- Intuitive operation by touch panel
- Advanced data management software;
  TDAS (Tanaka Data Acquisition System)

Safety

- Fire Containment System: Heater shuts down when ultraviolet sensor detects a fire, and CO_2 gas flows into the heater compartment (if connected to CO_2 source).
- Flask Catcher reduces the risk of breaking vapor tube of flask.
- Overheat protection: Heater shuts down automatically at the upper end of the temperature scale.

Versatility

- 200 test modes
- 5,000 test results
- RS-232C, USB port, Ethernet

Product Video ▶

CE UKCA

Test Methods	ASTM D86, ASTM D850, ASTM D1078, ISO 3405, IP 123, JIS K 2254
Measuring Range	Ambient to 450 ˚C
Display	TFT-LCD 10.4-inch color touch-screen with universal design GUI
Temperature Sensor	PT-100 for Vapor, Condenser, and Receiver room. Thermocouple for Heater.
Heater	24 V 600 W Low mass and low voltage heater, spiral type
Distillation Rate	4.5 %/min at factory (selectable from 2 % to 9 % with 0.5 % increment)
Test Mode	Up to 200 test modes can be recorded
Safety Features	Overheat protection. Fire containment system.
Correction	Loss correction and barometric correction
I/O Port	RS-232C x 2, USB x 2, Ethernet x 1
Size (W x D x H)	440 mm x 530 mm x 720 mm
Weight	57 kg
Power Consumption	AC 100 V to 240 V 50 / 60 Hz 1500 VA (max)

TANAKA

Automated Cold Filter Plugging Point Tester

afp-300

NEW

Simple and Easy Operation

Enhanced simplicity by placing the temperature sensor,detectors, and cables inside the arm.
The arm unit also provides added protection to glass parts.

Custom Function

Both stepwise cooling and linear cooling are available.

Pre-wash Function

Pipette and filter unit can be easily washed by simply swinging the arm.

Eco-Friendly

Equipped with CFC-free cooler achieving low noise,
low vibration and energy-saving.
Sample temperature of -95 ˚C can be reached without external chiller.

Product Video ▶

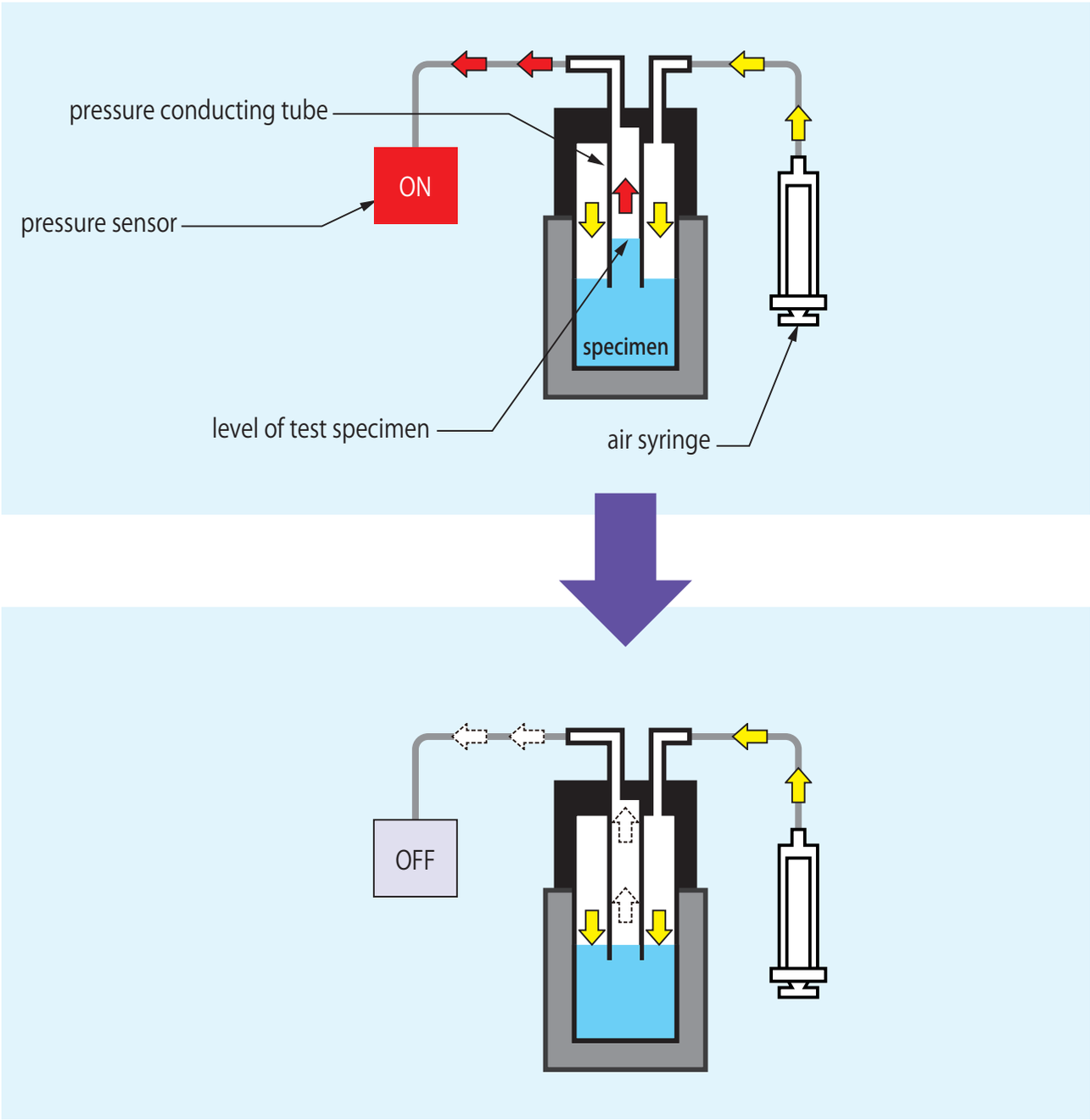
CE UK CA

Test Methods	ASTM D6371, EN 116, EN 16329, IP 309, JIS K 2288
Measurement Mode	①Step Cooling Mode: -34 ˚C, -51 ˚C, -67 ˚C by default. * ②Linear Cooling Mode: Customizable, 0.5 ˚C/min to 10 ˚C/min *It is possible to start test from -51 ˚C or -67 ˚C
Measuring Range	-95 ˚C to +51 ˚C (at room temperature of 25 ˚C)
Bath Temperature Range	-105 ˚C to + 55 ˚C (at room temperature of 25 ˚C)
Tempareture Sensor	Platinum resistance thermometer (100 Ω / 0 ˚C, PT 100)
Cooling	CFC-free Sterling Cooler
I/O Port	USB x 1, Ethernet x 1
Size (W x D x H)	260 mm x 620 mm x 590 mm
Weight	44 kg
Power Consumption	AC 100 V to 240 V　50 / 60 Hz　500 VA

Pour / Cloud Point Tester MPC Series

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.
TANAKA's MPC series have 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.
Pressure sensor “ON” is interpreted as “specimen is still flowing” ; “OFF” as “specimen is not flowing”.

Principle of Pour Point Detection



Automatic Pour / Cloud / Freezing Point Tester

mpc-6

- INNOVATIVE: Tanaka's original mini test methods which require much less sample volume (4.5 mL) and short testing time compared to conventional manual methods.
- SMALLEST FOOTPRINT: allows for most efficient use of bench space.
- 3-in-1: Test pour point, cloud point, and freezing point with just one instrument. Pour and cloud can be run simultaneously in a single run.

Intuitive 7-inch Touch-Screen Operation

Simplicity ensures smooth operation.

Extremely Simple

Set sample cup, input expected points and then press START. Pre-heat and cooling sequence are run automatically. Pour and cloud point results can be obtained in a single run.

Search Mode for Unknown Samples

The new SPE mode will test pour point with different pressures so that parameter optimization can be easily done.

Data Connectivity and Management

Data can be exported to LIMS or optional printer via Ethernet. Data storage for up to 50 data can be secured with password.

Eco-friendly

Equipped with CFC-free cooler achieving low noise, low vibration, and energy-saving. Sample temperature of -90 ˚C can be reached without external chiller.

Product Video ▶

CE UKCA

Compliant Methods	PP : ASTM D6749 CP : ASTM D7683 FZ : ASTM D8615
Reference Methods	PP : ASTM D97, ISO 3016, JIS K 2269 CP : ASTM D2500, ISO 3015, JIS K 2269 FZ : ASTM D2386, ISO 3013, JIS K 2276
Measuring Range	-90 ˚C to +51 ˚C (at room temperature of 25 ˚C)
Temperature Range	-100 ˚C to +70 ˚C or expected pour point +10 ˚C (at room temperature of 25 ˚C)
Measurement Modes	PP / CP, PP, CP, FZ PP Pressure : L, H, VH, UH, SPE, Custom PP Intervals : 1.0 ℃, 2.5 ℃, 3.0 ℃, Custom CP Intervals : 0.1 ℃, 1.0 ℃ FZ Intervals : 0.1 ℃, 0.5 ℃
Size (W x D x H)	160 mm x 600 mm x 620 mm
Weight	27 kg
Power Consumption	AC 100 V to 240 V 50 / 60 Hz 200 VA (max)

Automatic Aniline Point Tester aap-6

The aap-6 automatically determines aniline point of wide range of samples. The use of special infrared detector gives the instrument the ability to "see" through dark/opaque samples such as residual fuels and marine fuels. The measuring cell can be easily removed and placed on an analytical balance for weighing highly viscous samples. The measuring cell can be cleaned without disassembling, which makes the cleaning easier and safer.

Product Video ▶

CE UKCA

Test Methods	ASTM D611, ISO 2977, ISO 21493, JIS K 2256 etc.
Samples	Transparent or opaque / dark (≦ 8.0 on ASTM color scale) petroleum products
Measuring Range	Ambient to 170 ˚C below RT with optional jacketed cell and external chiller
Sample Cell	Modified U-tube
Detection	Photo-electric detector
I/O Port	RS-232C x1, USB x1, Ethernet x 1
Size (W x D x H)	240 mm x 470 mm x 490 mm
Weight	14 kg
Power Consumption	AC 100 V to 240 V 50 / 60 Hz 200 VA (max)

Automatic Cloud Point Tester for Surfactants aap-6cp

The model aap-6cp automatically determines the cloud point of non-ionic surfactants. Based on the established aap-6 hardware, a new software has been developed to accommodate surfactants testing. The instrument replaces manual handling and subjective determination of the cloud point with automatic, repeatable, and reliable results.

CE UKCA

Test Methods	ASTM D2024
Samples	Nonionic surfactants
Measuring Range	Ambient +20 ˚C to 90 ˚C For below ambient + 20 ˚C, use the optional water jacketed measuring cell and a cryostat.
Sample Cell	Modified U-tube
Detection	Photo-electric detector
I/O Port	RS-232C x 1, USB x 1, Ethernet x 1
Size (W x D x H)	240 mm x 470 mm x 490 mm
Weight	14 kg
Power Consumption	AC 100 V to 240 V 50 / 60 Hz 200 VA (max)

Automated Softening Point Tester asp-6

The asp-6 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-6 is small enough to be installed in a fume hood.

CE UKCA

Test Methods	ASTM D36, ASTM E28, ASTM D6493, EN 1427, IP 58, JIS K 2207, JIS K 2425
Type	Ring and ball , 2 tests
Measuring Range	Ambient to 200 ˚C
Detection	LED / Photo-diode
Stirring	Magnetic stirring (80 rpm to 300 rpm)
I/O Port	RS-232C x 1, USB x 1, Ethernet x 1
Size (W x D x H)	240 mm x 470 mm x 440 mm
Weight	15 kg
Power Consumption	AC 100 V to 120 V 50 / 60 Hz 1500 VA (max) AC 220 V to 240 V 50 / 60 Hz 1300 VA (max)

Micro Carbon Residue Tester acr-m3 mk2

The acr-m3mk2 automates the vaporizing / coking process of Micro Carbon Residue test, the result of which has been found to be well correlated with the conventional Conradson method. 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.

CE UKCA

Test Methods	ASTM D4530, ISO 10370, JIS K 2270-2 etc.
Measuring Range	Ambient to 600 ˚C
N_2 Gas Flow Rate	Automatically regulated, and displayed on the front panel
Size (W x D x H)	360 mm x 360 mm x 390 mm
Weight	20 kg
Power Consumption	AC 100 V to 120 V 50 / 60 Hz 1500 VA (max) AC 220 V to 240 V 50 / 60 Hz 1500 VA (max)

Reid Vapor Pressure Tester avp-6

The avp-6 automatically measures Reid Vapor Pressure (RVP) utilizing a miniaturized cylinder. While ease of operation and smaller instrument size are achieved with the smaller size cylinders, test result precisely agrees with that of the regular size Reid cylinder. The new feature of avp-6 is that while maintaining the test accuracy of the conventional AVP-30D, a touch screen has been adopted to achieve smooth operation.

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

CE UKCA

Test Methods	ASTM D323, ISO 3007, IP 69, JIS K 2258-1 etc.
Type	Bench-top with 2, 3, or 4 demi-size cylinders
Measuring Range	0 kPa to 196 kPa (2 kgf/cm^2)
Display	7 inch TFT color LCD Touch Panel
Cylinder	Stainless steel cylinder with approx. 60 % in length and 30 % in volume of regular reid cylinder
I/O Port	RS-232C x 1
Size (W x D x H)	410 mm x 600 mm x 730 mm
Dry Weight	42 kg
Power Consumption	AC 100 V to 120 V 50 / 60 Hz 1700 VA (max) AC 220 V to 240 V 50 / 60 Hz 1400 VA (max)
Option	Digital Manometer, Handy Air Pump

*avp-6 comes with either 2, 3, or 4 cylinders. When inquiring, specify the number of cylinders.

Automatic Colorimeter for Petroleum Products acl-3

Areas where TANAKA CANNOT sell:
Korea, Thailand, Malaysia, Singapore, Indonesia

The acl-3 automatically determines 4 kinds of Colors - Saybolt, ASTM, Pt-Co/Hazen, and Gardner. It utilizes the Tri-Stimulus values from spectroscopy method prescribed in ASTM D6045, which generates equivalent test results with conventional manual methods in about 5 seconds. Since no subjective judgement is involved, extremely high precision and repeatability can be achieved. CE

Test Methods	ASTM Color : ASTM D1500, D6045, ISO 2049, JIS K 2580 Saybolt Color : ASTM D156, D6045 Pt-Co / Hazen Color : ASTM D1209, D5386, ISO 6271 Gardner Color : ASTM D1544, ISO 4630
Measurement Method	Tri-Stimulus values from spectroscopy method
Photodetector	CMOS Linear image sensor
Measuring Wavelength	400 nm to 700 nm, 10 nm interval
Light Source Lamp	White LED (Lifetime: approx. 20,000 h)
Display Panel	5.7 inch TFT color LCD Touch Panel
Interface	USB port (for communication with PC) USB memory (for file system: FAT32) Parallel port (for printer)
Size (W x D x H)	540 mm x 383 mm x 255 mm
Weight	15.5 kg
Power Consumption	AC 100 V to 240 V 50 / 60 Hz 40 VA (max)

■ Standard Liquid Examples

ASTM Standard Liquid

Saybolt Standard Liquid

EDXRF Sulfur Analyzer rx-460SH

NEW

The rx-460SH is a single position portable version of energy dispersive X-ray fluorescence (EDXRF) sulfur meter. Due to its small size, it is best fit for on-site inspection or placement in small bench space. As with previous models, the C/H correction is embedded into the pre-set calibration curves. The display is a 5-inch color touch screen, which is much easier to operate, and is equipped with a handle for convenient carrying. Power can be supplied directly via an AC adapter or from a DC12 V battery.

CE

Test Methods	ASTM D4294-03, ISO 8754, JIS K 2541-4, etc.
Measuring Range	15 mg/kg (LOD) to 6.00 wt%
Size (W x D x H)	430 mm x 410 mm x 180 mm
Weight	16.2 kg
Power Consumption	AC 100 V to 240 V 50 / 60 Hz 100 VA (max)

EDXRF Sulfur Analyzer rx-630SA

The rx-630SA determines total sulfur in petroleum products using energy-dispersive X-ray fluorescence (EDXRF) method, which is a quick, non-destructive, and economical method. rx-630SA does not need helium gas and vacuum pump (Only AC power is needed). The C/H correction calibration curve has been set at the factory, and operator does not need to make a calibration curve for every product type. Once a sample is set, the total sulfur is determined automatically in 300 sec (typical). rx-630-SA is equipped with a 12-position turntable for higher productivity, and color touch screen for intuitive operation.

CE

Test Methods	ASTM D4294-03, ISO 8754, JIS K 2541-4, etc.
Type	12 positions
Measuring Range	15 mg/kg (LOD) to 6.00 wt%
Size (W x D x H)	560 mm x 560 mm x 270 mm
Weight	27 kg
Power Consumption	AC 100 V to 240 V 50 / 60 Hz 200 VA (max)

Full-Automatic Asphaltene Analyzer APD-600A

Asphaltene Analyzer APD-600A uses a dual wavelength spectrophotometric method conforming to JPI-5S-45-95 method.Measured results can be correlated to IP and ASTM Methods.
Measurement is done in about one minute, except the time for sample pretreatment, with much less variation of measured data.
The measurement values are automatically calculated as the values of ASTM D3279 methods, which has less data variation compared with the values of ASTM D6560 (or IP 143).

Very Rapid

Measurement is made in about 1 minute
except pretreatment of samples.

No Specific Skill

Anyone can make measurements by simple
pretreatment of samples.

Wide Variety of Oils

Measurement is applicable to crude oil, heavy oil,
cracked residue, asphalt, etc.

High Accuracy

This analyzer has excellent repeatability without
dependence on operators.

Automatic Generation of Working Curve

No complicated calculation is required to make
a working curve.

All-in-one Type

Measuring section and sample changer turntable are
integrated into one unit.

Areas where TANAKA CANNOT sell:

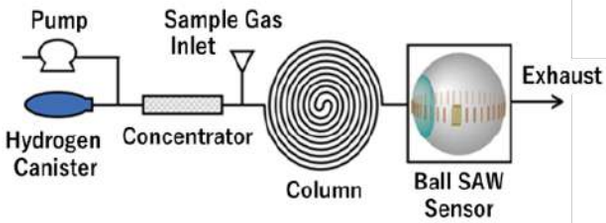
South Africa, Iraq, Kingdom of Saudi Arabia, Qatar, Kuwait, Oman, Egypt, United Arab Emirates, France, Italy, Portugal, Russia, Spain, India, Indonesia, Korea, Singapore, Malaysia, Taiwan, Thailand, Turkey, Vietnam, Argentina, Brazil, Mexico, Peru, Venezuela

※APD-600 is manufactured by Cosmo Trade & Service Co., Ltd in Japan.

Test Methods	JPI-5S-45-95
Related Methods	ASTM D3279, ASTM D6560, IP 143
Measuring Objects	Crude oil, heavy oil, cracked residue (normal pressure or reduced pressure), asphalt, various types of cracked oils, shale oil and oil sand: However, measurement by the APD-600A is not available for the samples containing Toluene insoluble components such as sludge, the samples containing a large amount of wax with a pour point of 50 ˚C or higher, and blown asphalt.
Measuring Methods	Absorption spectroscopy (Wavelength λ = 750 nm & 800 nm) a) Light source: LED lamps b) Photo sensor: Silicon photocells
Measuring Range	0.5 wt% to 15 wt%
Reproducibility	[Absorbency accuracy of soluble matter] ±2 % (in the vicinity of Abs. 2.5, when converted to 10 mm cell)
Measuring Time	Approx. 1 minute per sample (for absorbency measurement only)
External Output	Printer port x 1, Serial port x 1
Power Supply	100 V to 240 V AC +/-10 %, 50 / 60 Hz
Weight	Approx. 20 kg
Dimensions	W 520 mm x D 428 mm x H 350 mm (excluding drain and rinsing liquid tanks)

Palm-sized Gas Chromatograph Sylph

A gas chromatograph is an analyzer for measuring the species and concentration of a mixed gas of multiple species.
The basic principle used in Sylph is that the sample gas is directly sucked in by a pump, and is condensed by a built-in compact condenser. The carrier gas is provided by a hydrogen canister filled with a hydrogen absorbing alloy, and the mixed gas is injected into the column by a high-speed heater in the condenser. The various gas components separated by the column are detected by the ball SAW sensor based on the different retention times.



Column Temperature	40 ˚C to 200 ˚C
Column Hearing Rate	MAX. 20 ˚C/min, programmable
Detector	Ball SAW sensor
Carrier Gas	Hydrogen ※Carrier gas can be hanged by a cylinder adapter (optional).
PC	Surface Pro 8, Windows 11
Power Requirements	DC 24 V (port 5.5 x 2.1 mm) ※AC adaptor 100 to 240 VAC, 50 / 60 Hz included.
Weight	1.9 kg
Size	W 133 mm x H 88 mm x D 174 mm (Protrusions not included)

Trace Moisture Analyzer Falcon Trace

The "FalconTrace" trace moisture analyzer is a device that quantitatively measures the water molecules contained in ultra-small quantities of industrial gases and natural gas using a ball SAW sensor.
It has an extremely fast response, is able to monitor changes in the amount of moisture in real time, and can also be used for two-component measurement of moisture quantity with background gas composition analysis. The moisture concentration in the gas can be measured accurately down to the 1 ppb (part per billion) level. Since the response speed is extremely fast and changes in moisture levels can be monitored in seconds, this is useful for stabilizing the yield and quality of products in semiconductor and rechargeable battery manufacturing processes.
Since the sensor material is a quartz crystal ball, it offers the advantages of corrosion resistance and being lightweight and easy to carry around.

Model Number	FT-700WT Mk- II	FT-450WT	FT-400WT
Measurement Range (Dew Point)	- 110 ˚C to - 42 ˚C	- 100 ˚C to - 42 ˚C	- 90 ˚C to 4 ˚C
Measurement Range (Concentration)	1 ppbv to 100 ppmv (LDL: 0.01 ppbv)	10 ppbv to 100 ppmv (LDL: 1 ppbv)	0.1 ppmv to 8000 ppmv
Reaction Rate	Within 30 seconds	Within 1 second	Within 1 second
Gas Pressure Range	Atmospheric pressure (Contact TANAKA for 100 - 300 kPa)	100 - 300 kPa	Atmospheric pressure (Contact TANAKA for reduced pressure)
Corresponding Gas (13 Types)	Air, N_2, O_2, Ar, He, H_2, CO, CO_2, CH_4, C_2H_4, C_2H_6, C_3H_6, C_3H_8, Contact TANAKA for other gases.		
Gas Pressure Flow Rate Range	0 to 1 L/min	0 to 1 L/min	0 to 1 L/min
Interface	4 - 20 mA, Ethernet, WiFi, USB	HDMI, WiFi, USB x 2	4 - 20 mA, WiFi, USB
Power Supply	100 - 240 VAC, 50 / 60 Hz	100 - 240 VAC, 50 / 60 Hz	100 - 240 VAC, 50 / 60 Hz
Size (Width x Depth x Height)	449 x 376 x 222 mm (Excluding protrusions)	Sensor: 63 x 63 x 173 mm 186.5 x 228 x 106.5 mm (Excluding protrusions)	355 x 315 x 132 mm (Excluding protrusions)
Weight	About 17 kg	Sensor: about 2 kg Main Unit: about 2.5 kg	About 9.5 kg

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