

## AUTOMATED CLEVELAND OPEN CUP FLASH POINT TESTER

*aco-8/aco-8as*



*All New*

Model aco-8 and aco-8 asphalt version are the automated Cleveland Open Cup flash point tester from Tanaka. Based on 45 years experience of manufacturing the automated flash point testers, innovative 8<sup>th</sup> generation series has been released. The theme of 8<sup>th</sup> generation is “Ergonomic, Versatile and Premium”.

- ERGONOMIC COLOR-COORDINATED DISPLAY FOR HIGH VISIBILITY FOR EVERYBODY (UNIVERSAL DESIGN) AND INTUITIVE SWITCH OPERATION.
- ENHANCED VERSATILITY INCLUDING USB PORT FOR OPTIONAL FLASH MEMORY OR KEYBOARD, PASSWORD PROTECTION AND DATA STORAGE.
- ALL-IN-ONE CHASSIS DESIGN: COMPACT, LIGHT-WEIGHT AND PREMIUM EXTERIOR DESIGN.
- CONFORMS TO STANDARD TEST METHOD  
(ISO 2592, ASTM D92, IP36)

## **SINGLE ACTION SETTING**

The flash detector rings and the temperature sensor are permanently mounted on a swing-arm assembly, which allows an easy setting of the specimen

## **EASY OPERATION**

Select a test mode and enter the expected flash point; while the instrument executes the test, you are free to do other lab work. The instrument follows the exact procedures prescribed in the test method, and the completion of the test cycle is signaled by beeps. The test result is brightly shown on the color LCD module.

## **AUTO FIRE POINT DETECTION**

In addition to the flash point, fire point can be determined automatically. The fire point is detected when the double ionization rings detects 5 sec of continuous burning.

## **AUTO FIRE CONTAINMENT**

The fire containment lid activates automatically to help putting out fire when aco-8 detects a fire point or specimen is burning up heavily.

## **DATA HANDLING**

The unit is equipped to store up to 200 test results and export to an optional printer or to a LIMS through an RS-232 port or USB memory.

## **USB PORT**

A USB port allows connecting USB keyboard for easy entering sample name and connecting USB flash memory for data copy to a PC or test conditions/parameters copy to the tester.



## **PASSWORD PROTECTION**

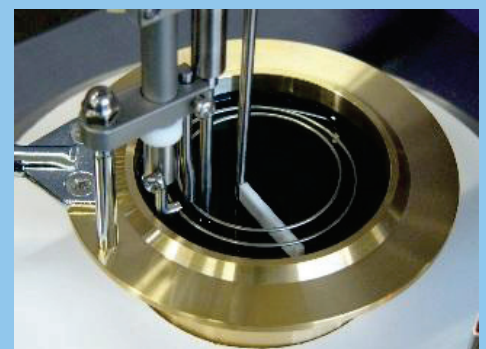
With setting up password by the administrator, the device is protected against inadvertent change of parameters by the operator.

## **ALL-IN ONE DESIGN IN LIGHTWEIGHT**

The all-in-one design is much lighter than old model, ACO-7 by approximately 30%, which is world's smallest class in volume.

## **SKIMMER FOR SURFACE SKIN (Asphalt Version Only)**

For aco-8 asphalt version, a unique skimmer was added to automatically remove the surface skin that forms on the sample when bitumen or some other samples are tested. Surface skin removal has been known to improve the precision and the safety of the COC flash point testing of such samples.



## SPECIFICATIONS

<b>TYPE</b>	All –in one, microprocessor controlled
<b>TEST STANDARDS</b>	ISO 2592, ASTM D92, IP36
<b>MEASURING RANGE</b>	Ambient to 400°C
<b>MEASUREMENT MODES</b>	ISO CRM, ISO Normal, ISO SPE, ISO Flash & Fire, ISO Skim*, ASTM Normal, ASTM SPE, ASTM Flash & Fire, ASTM Skim*, and User custom       *: asphalt version only
<b>HEATER</b>	Nichrome Coil heater: 800W@100V or 800W@220V
<b>COOLING DEVICE</b>	Forced air cooling by sirocco fan
<b>DISPLAY</b>	5.7 inch (117 x 88mm) color LCD with LED back light
<b>SKIMMING MECHANISM (asphalt version only)</b>	Teflon Paddle rotates to skim the surface film off specimen. Skimming start temperature and interval are programmable. When not in use, the paddle can be removed.
<b>TEMPERATURE SENSOR</b>	PT-100 in stainless steel sheath
<b>FLASH DETECTOR</b>	Double Ionization Rings
<b>IGNITION SOURCE</b>	Gas ignition with automatic lighting
<b>BAROMETRIC CORRECTION</b>	Automatic correction by built-in barometric pressure sensor
<b>I/O PORT</b>	RS-232C = 1 channel (for PC or Optional Printer) USB=1 channel (for USB keyboard or USB Flash Memory)
<b>SAFETY SHUTDOWN</b>	Automatically shuts off and the problem is reported by buzzer and display, in case: (a) EFP+30 °C or 400 °C is reached, (b) temperature sensor is found defective, (c) flash detector is found defective, (d) thermofuse is blown (also fire containment lid activates), (e) built-in battery is found drained out, (f) arm is not set in place, (g)control computer runs away (no display)
<b>GAS SUPPLY</b>	LP gas or natural gas (Max. pressure:10kPa)
<b>POWER SUPPLY</b>	100/120VAC or 220/240 VAC, 50/60Hz
<b>POWER CONSUMPTION</b>	1000W MAX.
<b>ELECTRICITY CONSUMPTION</b>	160Wh for 1 test (about 20 min), 60.48gCO <sub>2</sub> (@ 0.378kgCO <sub>2</sub> /1kWh)
<b>AMBIENT TEMP. RANGE</b>	10°C to 35°C
<b>DIMENSIONS &amp; WEIGHT</b>	230mm (W) × 470mm (D) × 390mm (H)     16kg

## APPARATUS

CODE	PART NAME	REMARKS
ACO-00-023	<b>aco-8</b>	Cleveland open Cup Flash Point Tester
ACO-00-024	<b>aco-8as</b>	Cleveland open Cup Flash Point Tester, asphalt version

## STANDARD ACCESSORIES

CODE	PART NAME	Qty	REMARKS
ACO-02-001	Test Cup Assembly	1	
320-00-035	Thermofuse	1	Pack of 5, with Insulating Tube.
----	Gas Hose $\phi 9 \times \phi 16$ , 1.5m with Hose bands	1	
ACO-04-401	Heating Plate, Upper	1	
ACO-02-441	Skimmer Paddle	3	asphalt version only
MPC-02-032	AC Power Cord	1	3.0m, For 100 to 120V
MPC-02-033			2.5m, For 220 to 240V
—	aco-8 Manuals	1	Manuals for aco-8 and aco-8as.

## OPTIONAL ACCESSORIES

CODE	PART NAME	REMARKS
070-00-068	Printer, BS2-80TS	Prints out test data and instrument settings.
070-00-281	Mini USB Keyboard	Sample ID entering
ACO-05-016	Mercury Thermometer Holder	For Calibration

## SUGGESTED SPARES for 2 YEARS

CODE	PART NAME	Qty	CODE	PART NAME	Qty
ACO-02-001	Test Cup Assembly	1	ACO-02-402	Inner Detector Ring	1
320-00-035	Thermofuse	1	ACO-02-403	Outer Detector Ring	1
ACO-05-021	Igniter Top for aco-8	2	190-00-216	Insulating Collar for aco-8	2
ACO-05-011	Temperature Sensor for aco-8	1	ACO-02-441	Skimmer Paddle (for aco-8as only)	5
100-00-001	Heater Coil, 100/120V 800W (for 100/120V model)	1	100-00-011	Heater Coil, 220/240V 800W (for 220/240V model)	1

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