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WIDE RANGE PORTABLE KINEMATICS VISCOMETER

Wide Range Portable Kinematics Viscometer – ToronPKV™ 2200

A Portable Kinematics Viscometer helps maintenance and oil analysis teams check kinematic viscosity on-site, without waiting for full laboratory turnaround. Wide Range Portable Kinematics Viscometer – ToronPKV™ 2200 is based on a split-cell capillary design that can test transparent oils, dark oils, and heavily contaminated samples without pretreatment, while keeping the sample at a controlled temperature during measurement.

Wide Range Portable Kinematics Viscometer – ToronPKV™ 2200 is a portable field instrument for measuring kinematic viscosity with a small sample volume and a solvent-free workflow. The ToronPKV™ 2200 platform as a high-precision, multi-functional portable viscosity instrument that complies with ASTM D8092 and uses an open-close capillary sample cell for easier cleaning and maintenance. It is intended for industrial use where fast, repeatable viscosity checks are needed outside a fixed laboratory setting.

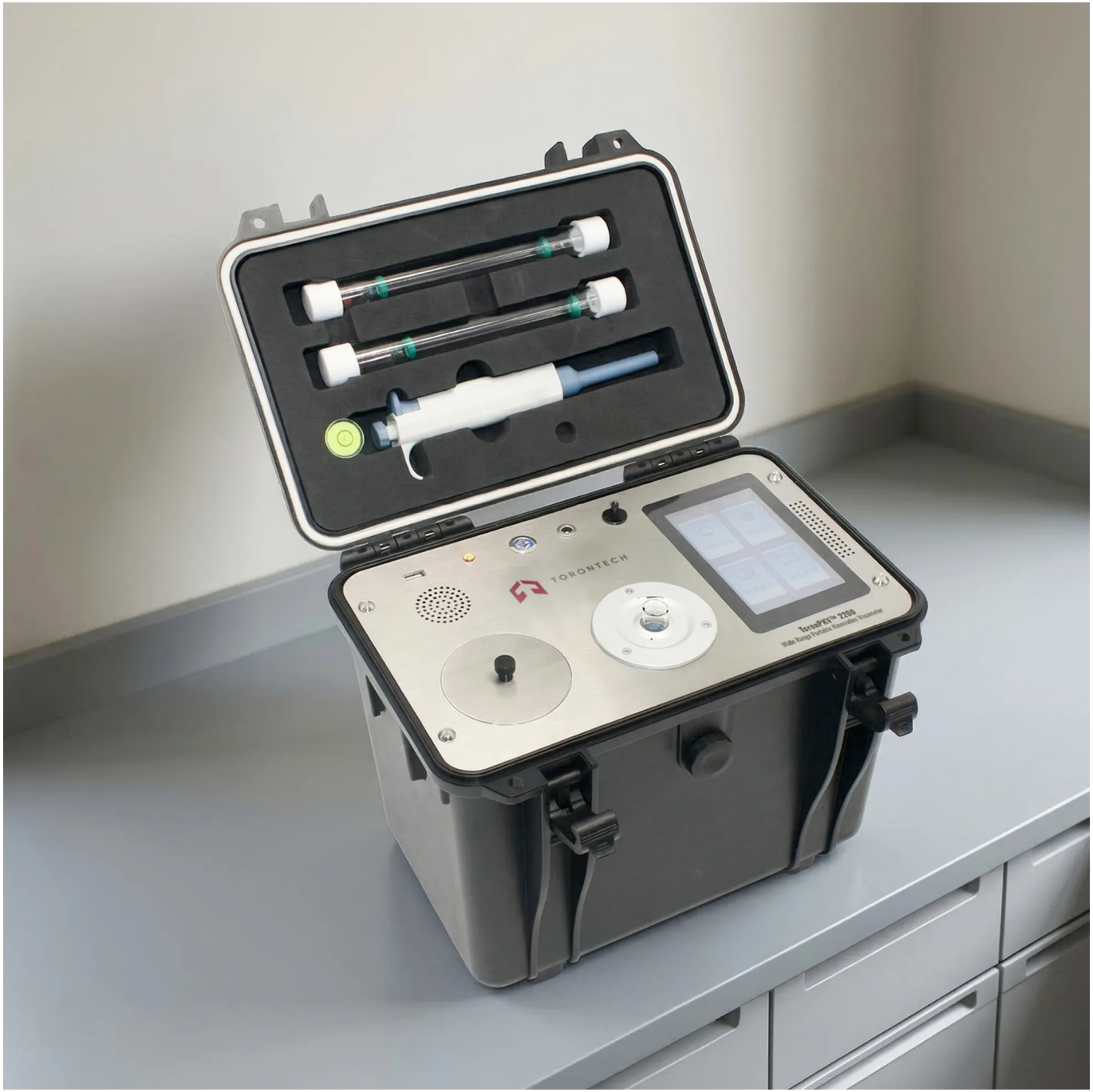
The design also supports practical field testing because oil color and cleanliness are stated not to affect the viscosity result. Test time depends on the sample viscosity, so low-viscosity fluids can be measured in seconds while heavier oils may take longer.

APPLICATIONS

Wide Range Portable Kinematics Viscometer – ToronPKV™ 2200 Application

- Petrochemical industry: Portable viscosity checks help operators verify product consistency and monitor lubricant condition during storage, transfer, and service. A fast field result can help identify viscosity shifts linked to contamination, oxidation, dilution, or fluid mix-up before sending samples for deeper lab review.

- Mining and quarrying: Mining equipment often runs under dusty, high-load conditions that stress lubricants and hydraulic fluids. A portable kinematic viscosity check helps maintenance teams spot oil condition changes that may point to degradation, contamination, or incorrect fluid selection.
- Laboratories: Labs can use this instrument for fast screening, incoming checks, or field-to-lab comparison work. Since ASTM D8092 is a field method for kinematic viscosity and ISO 3104 / ASTM D445 are established laboratory capillary methods, this type of instrument fits well as a complementary screening tool in broader viscosity programs.
- Marine and shipbuilding industry: Marine teams often need fast viscosity information onboard, where solvent handling and waste disposal can be inconvenient. Its low sample requirement plus portable format make it suitable for shipboard lubricant condition checks.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Standards

- ASTM D445: Standard Test Method for Kinematic Viscosity
- ASTM D7279: Standard Test Method for Kinematic Viscosity by Automated Houillon Viscometer

FEATURES

Wide Range Portable Kinematics Viscometer – ToronPKV™ 2200 Key Features

- Portable Kinematics Viscometer design for field use with a compact housing, rechargeable battery module, and DC24V adapter support.
- Split-cell capillary chamber that opens for cleaning, which helps reduce maintenance time between samples.
- Works with transparent, black, and heavily contaminated oils without pretreatment, which expands usefulness in real field conditions.
- Only 60 µL sample volume required, helping reduce oil consumption during routine condition monitoring.
- Constant-temperature testing at 40°C or 100°C for more stable and comparable viscosity readings.
- Photoelectric sensing system using a through-beam sensor for flow detection in the capillary sample path.
- Built-in memory for up to 1000 data sets with USB export in tabular format for reporting and trend analysis.
- Minimal consumables and no waste solvent workflow, which makes the instrument more suitable for on-site testing programs.
- Oil color and cleanliness do not affect the reported viscosity result

THEORY & METHOD

Theory and Method

Portable Kinematics Viscometer – ToronPKV™ 2200 uses a split-cell capillary sample chamber and photoelectric sensing to determine viscosity from liquid flow behavior at controlled temperature. The sample cell is an open-close capillary design, the sensor is a through-beam photoelectric sensor, and the instrument measures at 40°C or 100°C with temperature control. Only 60 µL of oil is required, and the instrument can test dark or contaminated oil without pretreatment.

This general approach aligns with the broader capillary-flow principle used in ISO 3104 and ASTM D445, where kinematic viscosity is determined from the time a volume of liquid flows through a calibrated capillary under controlled conditions. The portable ASTM D8092 method is designed for field determination, while ISO 3104 and ASTM D445 are commonly used as laboratory reference methods.

TECHNICAL SPECIFICATIONS

Wide Range Portable Kinematics Viscometer – ToronPKV™ 2200 Technical Specification

Specification	Wide Range Portable Kinematics Viscometer – ToronPKV™ 2200
Viscosity range	10–350 cSt @ 40°C
Accuracy	≤ ±3% of measured value
Repeatability	RSD ≤ ±3%, typical
Measurement temperatures	40°C / 100°C for kinematic viscosity; ±0.1% temperature control
Sample volume	60 µL
Sample cell	Open-close capillary sample cell

Specification	Wide Range Portable Kinematics Viscometer – ToronPKV™ 2200
Sensor	Through-beam photoelectric sensor
Display	2.8-inch LED, 320 × 240 pixels
Input	4-wire resistive touch screen
Interface	USB
Software	Embedded software
Data storage	Up to 1000 sets
Data export	External USB export, tabular format
Battery module	24V, 2600 mA, rechargeable
Power adapter	DC24V
Dimensions	201 × 119 × 155 mm
Weight	1.5 kg

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