

AUTOMATED COLD CRANKING SIMULATOR TT-CCS-I



Automated Cold Cranking Simulator TT-CCS-I is designed to measure the apparent viscosity of engine oils at low temperatures (-35°C to -5°C). It features a DC motor-driven rotor closely matched to a stator, with samples filling the gap between the two. The advanced thermoelectric temperature control system ensures precise regulation, while the motor speed is calibrated using standard oil to guarantee accurate viscosity measurements.

With improved temperature control, reduced preheating time, and enhanced measurement accuracy, the TT-CCS-I offers reliable performance for automotive and industrial applications. Its compact design ensures easy installation and operation, making it a practical solution for viscosity testing needs.

APPLICATIONS

- **Engine Oil Performance Testing** - Measures apparent viscosity of engine oils at low temperatures to ensure reliable cold-start performance in compliance with ASTM D2602 and ASTM D5293 standards.
- **Lubricant Quality Control** - Provides accurate and repeatable viscosity testing during oil production and formulation, helping manufacturers maintain product consistency and performance.
- **Research & Development** - Supports development of advanced lubricants by simulating low-temperature engine start conditions, enabling optimization for fuel efficiency and durability.
- **Automotive Industry** - Used by vehicle manufacturers and testing laboratories to validate lubricant performance and guarantee reliable engine operation in extreme cold climates.
- **Industrial Lubricants** - Evaluates the viscosity stability of specialty lubricants used in heavy machinery, equipment, and off-road vehicles operating in subzero environments.

- **Regulatory & Compliance Testing** - Ensures lubricants meet international standards and industry specifications before release to global markets.

FEATURES

Accurate Performance and Advanced Control

The TT-CCS-I delivers high-accuracy performance with its motor, capable of automatically detecting rotation speed, controlling current, and minimizing errors. Its rotary encoder ensures precise rotation speed measurement, while the microcomputer control system, operating on a Windows OS, provides a complete English interface for intuitive control.

Efficient Temperature Management

Equipped with a semiconductor refrigeration system and an integrated low-temperature cooling device, the TT-CCS-I ensures precise and reliable temperature control. The system automatically recommends and maintains the optimal refrigeration temperature throughout testing, reducing operator workload and ensuring consistency.

Wide Measuring Range and High Repeatability

With a measurement range of 1500 to 15000 cP, the TT-CCS-I is versatile for various applications. Its upgraded rotor provides low torque test status and ensures excellent repeatability, guaranteeing reliable results for every test.

Comprehensive Data Handling

The instrument simplifies data handling with its LCD display, which provides real-time working status updates. Results are automatically calculated after calibration with standard oil, and the device supports editing and storing up to 10 standard oil results. Additionally, a printer can be connected for convenient output of results.

Enhanced Test Automation

The TT-CCS-I automates all test procedures, including generating calibration curves and displaying viscosity measurements. Post-test, the system automatically stops and adjusts the temperature as needed, streamlining the entire process and ensuring efficiency.

TECHNICAL SPECIFICATIONS

NO.	SPECIFICATION	DETAILS
1	Reference standard	ASTM D2602, ASTM D5293
2	Refrigeration method	Semi-conductor
3	Circulation method	Multifunctional plastic steel pump
4	Temp. controlling method	Digital PID temperature controller
5	Detection method	Automatic test
6	Data processing	Automatic store and print
7	Temp. controlling range	Ambient ~ -35°C

NO.	SPECIFICATION	DETAILS
8	Voltage	AC220 V 50Hz (110V also available upon request)

NO.	NAME	QUANTITY	UNIT
1	Main Unit	1	Set
2	Circulating water bath	1	Set
3	Data communication cable	1	Root
4	Injection syringe	5	PC
5	Waste liquid collector	1	PC
6	Software CD	1	PC
7	Injection plug	2	PC
8	Fuse	4	PC
9	Standard oil (50ML)	9	Bottle
10	Software USB key	1	PC
11	Cooling circulation pipe	2	Root



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