



AUTOMATED CCS COLD CRANKING SIMULATOR - TT-CCS SERIES

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Automated Cold Cranking Simulator | ASTM D5293 & D2602 Engine Oil Viscosity Testing

A cold cranking simulator measures the apparent viscosity of engine oils at subzero temperatures to predict how well a lubricant will flow during a cold engine start. Torontech's TT-CCS Series applies a DC motor-driven rotor-stator system that correlates rotation speed with viscosity, giving quality labs, lubricant blenders, and R&D teams repeatable results down to -35°C. Built to ASTM D2602 and ASTM D5293, the series covers a semi-automatic entry model, a fully automatic single-position unit, and a 16-tube high-throughput system.

Each model shares the same refrigeration core and Windows-based control software, differing mainly in viscosity range, temperature precision, and how much of the test cycle runs unattended. That makes the TT-CCS Series a practical fit whether a lab tests a handful of formulations a week or runs continuous QC on a production line.

Why Choose Torontech for Your Cold Cranking Simulator

Torontech supplies testing and measurement equipment to laboratories and manufacturers across North America and worldwide, backed by responsive technical support and calibration service. The Cold Cranking Simulator range is built for reliable, standards-driven results, so you can standardize on one supplier as your testing needs grow. Our team helps you match the right configuration to your samples, applicable standards, and throughput, then supports you through installation and beyond.

Request a Quote

Tell us your target viscosity range, sample throughput, and automation needs, and we will recommend the right TT-CCS model for your lab. [Contact the Torontech team](#) for pricing and lead times.

APPLICATIONS

Applications

Cold cranking simulators support the oil and lubricant industry wherever a product's low-temperature flow behavior needs to be verified against a start-up standard. The TT-CCS Series is used across formulation, quality control, and third-party verification work.

- **Lubricant Manufacturing & Blending:** runs batch-by-batch QC on multigrade engine oils so each shipment meets SAE J300 cold-start requirements before release.
- **Automotive R&D & OEMs:** validates new and low-viscosity oil formulations to confirm reliable engine startability across specified climate ranges.
- **Petroleum Additive Development:** measures how viscosity index improvers and pour point depressants change an oil's low-temperature fluidity.
- **Commercial & Third-Party Testing:** provides independent verification of engine oil viscosity claims for consumer and commercial fleet protection.

- **Industrial Lubricants:** checks specialty lubricants used in heavy machinery and off-road equipment operating in subzero environments.

TECHNICAL SPECIFICATIONS

TT-CCS Series Range

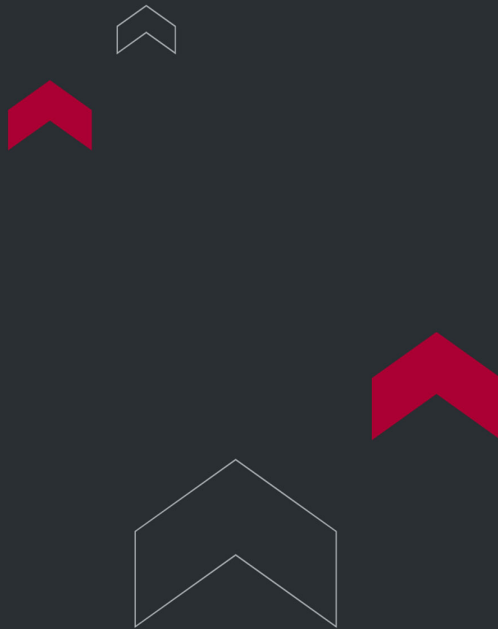
The TT-CCS Series spans three levels of automation and throughput, from manual sample injection to a 16-position autosampler. The table below compares viscosity range, temperature control, and automation across all three models.

Model	Viscosity Range	Temperature Control	Automation	Description
TT-CCS-I	1,500 to 15,000 cP	Ambient to -35°C	Semi-automatic, manual injection	Entry-level bench model for routine viscosity testing, with an LCD readout and automatic calibration against standard oil, storing up to 10 results.
TT-CCS-II	1,500 to 25,000 cP	-5°C to -35°C, controlled to ±0.02°C	Fully automatic injection, cleaning, and testing	Single-position unit with a wider viscosity range and patented automatic cleaning, built for labs running frequent SAE J300 classification tests.
TT-CCS-III	1,500 to 15,000 cP	-5°C to -35°C, optional -40°C, ±0.02°C	Fully automatic, 16-tube autosampler	High-throughput model that processes up to 16 samples unattended, suited to large-scale multigrade oil production QC.

How to Choose the Right Cold Cranking Simulator

- **For occasional testing on a tight budget:** choose the TT-CCS-I for manual-injection viscosity testing within the standard 1,500 to 15,000 cP range.
- **For a wider viscosity range with less operator involvement:** choose the TT-CCS-II, which automates injection, cleaning, and testing up to 25,000 cP.

- **For high-volume production QC:** choose the TT-CCS-III, whose 16-tube autosampler runs multiple batches unattended.
- **For labs testing near -40°C:** choose the TT-CCS-III for its optional extended cooling range.



Torontech Inc.

251 Consumers Road, Suite 1200
Toronto, Ontario, M2J 4R3, Canada 🇨🇦

Phone: +1 416 368 2721 | Fax: +1 416 981 7652
Email: info@torontech.com

Torontech, LLC

601 Brickell Key Drive, Suite 700
Miami, FL 33131, USA 🇺🇸

Toll-Free: 1-866-383-7919
Email: sales@torontech.com

Torontech ME FZE

Meydan Grandstand, 6th Floor,
Meydan Road, Nad Al Sheba,
Dubai-261440, UAE 🇦🇪

Phone: +971 488 19252
Email: me@torontech.com

