HAAKE MARS iQ Rheometer Series

More iQ for your QC

A smarter rheometer system for quality control

The Thermo Scientific™ HAAKE™ MARS™ iQ Rheometer Series provides extensive flexibility and ease-of-use for daily quality control requirements.

HAAKE MARS iQ Rheometers enable fast, consistent characterization of a wide range of samples, regardless of user. The software and a user-friendly touch screen offer the possibility to support your employees with standard operating procedures including work instructions with images.

These intuitive, intelligent rheometers help confirm that the correct measuring geometry is selected via "Connect Assist" functionality for failure-free measurements. The robust rheometers employ modularity and a wide range of accessories to provide QC labs with both flexibility and speed. Quick connections allow fast configuration changes for many different analyses.

The HAAKE MARS iQ Rheometer comes in two different rheometer models, ball- or air-bearing. It provides a wide measuring range for a variety of samples and extended testing capabilities including texture analysis, tribology and pressure-dependent tests.

When creating the HAAKE MARS iQ instrument, we merged requirements for a high-precision rheometer with eco-friendly materials, low energy consumption and resource-efficient manufacturing processes.

HAAKE MARS iQ and HAAKE MARS iQ Air Rheometers – intuitive, intelligent and individualized systems that deliver more iQ for your QC.

Intuitive.

A QC rheometer that makes QC even more convenient

- State-of-the-art user interface with multifunctional 7'' touchscreen for instrument operation and Standard Operating Procedure (SOP) execution right at your fingertips
- ''Assist'' functionalities to simplify operation and prevent user mistakes:
  - ''Connect Assist'' quick coupling of measuring geometries and temperature modules with automatic recognition
  - ''Color Assist'' color-coded plugs for temperature modules

Intelligent.

A QC rheometer design that masters daily measurement challenges

- Folded H frame concept for greater stiffness and ultra-precise lift control with a wide travel range
- Durable rheometer frame material selection: high-performance mineral composite casting with high vibrational damping, minimal temperature expansion and high chemical resistance
- Next generation of highly dynamic, powerful EC motor with mechanical or air bearing

Individualized.

A QC rheometer with extraordinary flexibility for tomorrow's testing demands

- Extensive modularity with a broad scope of temperature modules, measuring geometries and application-oriented measuring cells for QC applications
- A sensitive normal force sensor that measures axial forces in both directions bringing a measuring capability to your daily QC process that was previously only available in R&D analysis
- Lateral and bottom access for customized test requirements

The perfect rheometer for quality control, regardless of industry

With its modular design and broad accessory portfolio, the HAAKE MARS iQ Rheometer can be quickly adapted to perform rheological tests of samples ranging from water-like to semisolid.

PETROCHEMICAL

Comprehensive pressure cell portfolio for tests up to 600 bar and 300 °C

Tribology cell based on ball-on-three-plates principle for testing friction, lubrication and wear

PHARMA/COSMETICS

Serrated or sandblasted measuring geometries to eliminate wall slip of complex fluids

Optional 21 CFR part 11 module for HAAKE RheoWin Software to meet FDA requirements
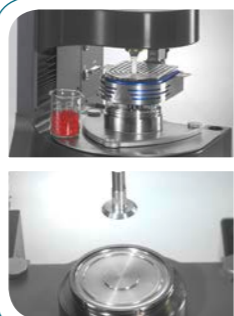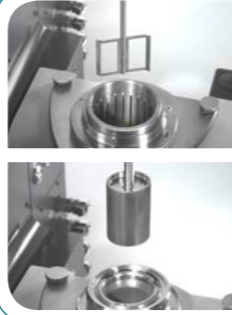
21 CFR Part 11 Module

FOOD

Texture analysis of solid samples with fixtures for bending, breaking or squeezing tests

Universal container holder for measurements in original sample containers

PAINTS/COATINGS

Variety of sample covers including solvent trap to minimize solvent evaporation

Pin or ring rotor for investigation of drying processes

POLYMERS

Electrical temperature module for parallel plates with active upper heater for tests up to 400 °C

Disposable, parallel plate measuring geometries eliminate time-consuming cleaning

MINING

Large dimension building material cell with exchangeable lamella profiles

Coaxial cylinders with helical grooves or serration to avoid sedimentation and wall slip
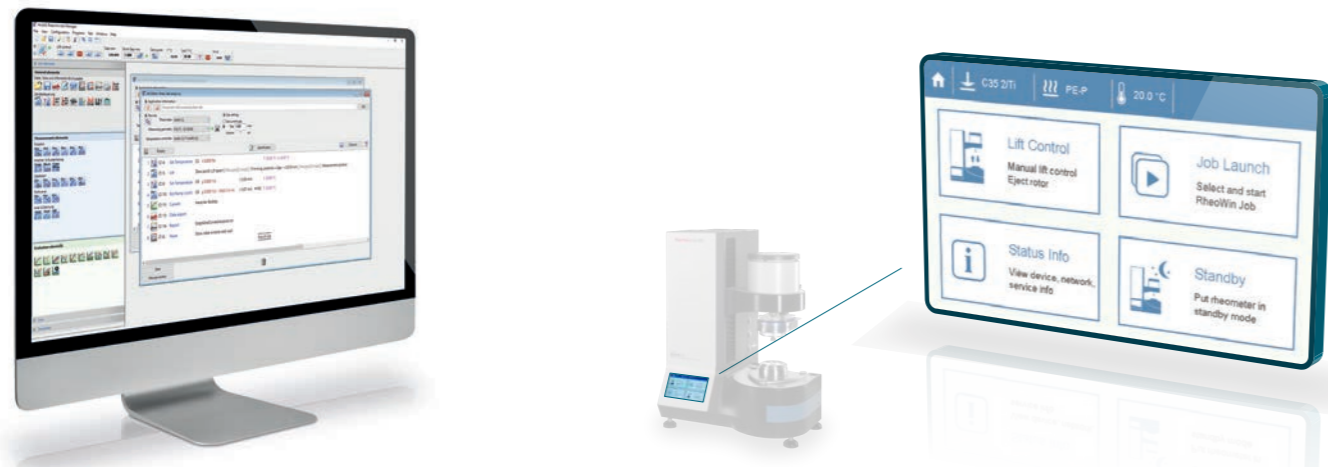
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MARS iQ

Operation with a mouse-click or a finger touch

HAAKE MARS iQ Rheometers are fully software controlled via Thermo Scientific™ HAAKE™ RheoWin™ PC Software which allows operations to be optimized for individual requirements. Alternatively any HAAKE RheoWin Software method can be launched from the instrument touchscreen.

HAAKE RheoWin PC Software for measuring flexibility

- Multilingual user interface (13 languages)
- Creation of automated routines including data analysis, pass/fail evaluation and result documentation
- Loop programming with stop criteria
- Numerous algorithms for data analysis and evaluation
- Free configurable data export (ASCII, Microsoft® Excel®, XML, etc.)
- Automated data transfer to information and laboratory systems (ERP, LIMS, etc.)
- Save all results in a wide variety of formats (pdf, jpg, etc.)
- User management

Instrument touchscreen user interface for more convenience

- Large 7'' color touchscreen (multilingual)
- Manual lift control
- Launch of any HAAKE RheoWin Software method directly from the instrument
- Interaction with HAAKE RheoWin Software methods
- Online display of basic measurement values
- Display of basic data analysis results
- Standby mode for energy savings

Run a complete SOP directly from the instrument touchscreen

Select and launch HAAKE RheoWin method

Interact with visual instructions

Online display of measurement values

Display of basic data analysis results

Specifications

Technical data	Units	HAAKE MARS iQ	HAAKE MARS iQ Air
Bearing type		Ball Bearing	Air Bearing
Measuring modes:			
Rotation (CR[a], CS[b])		✓	✓
Oscillation (CD[c], CS)		✓	✓
Torque range:			
Min. torque rotation	mNm	0.2	0.001
Max. torque rotation	mNm	125	150
Min. torque oscillation	mNm	0.2	0.001
Max. torque oscillation	mNm	125	150
Torque resolution	µNm	2.0	0.007
Velocity ranges:			
Min. angular velocity	rad/s	0.001	0.0001
Max. angular velocity	rad/s	209.4	209.4
Min. rotation speed	rpm	0.01	0.001
Max. rotation speed	rpm	2000	2000
Angular resolution	µrad	0.63	0.63
Frequency range:			
Min. frequency	Hz	0.01	0.0001
Max. frequency	Hz	20	100
Normal force:			
Min. normal force	N	0.01[d]	0.01
Max. normal force	N	50[d]	50
Normal force resolution	N	0.001[d]	0.001
Lift performance:			
Max. lift travel	mm	230	230
Gap accuracy	µm	1	1
Gap resolution	µm	0.05	0.05
Min. lift speed	µm/s	0.05	0.05
Max. lift speed	mm/s	20	20
Temperature modules with automatic recognition:			
For concentric cylinders			
Peltier controlled	°C	-40[e] - 200	-40[e] - 200
Electrical controlled	°C	-40[e,g] - 300[f]	-40[e,g] - 300[f]
Liquid controlled	°C	-40[e] - 180[e]	-40[e] - 180[e]
For plate and cone geometries			
Peltier controlled	°C	-60[e] - 200	-60[e] - 200
Electrical controlled	°C	-40[g] - 400[h]	-40[g] - 400[h]
Liquid controlled	°C	-40[e] - 200[e]	-40[e] - 200[e]
Features and functionalities:			
Color Touch Screen		✓	✓
Connect Assist		✓	✓
Color Assist		✓	✓
Interfaces:			
TCP/IP-Ethernet		For communication with PC	For communication with PC
Dimensions:			
W x D x H	mm	480 x 390 x 670	480 x 390 x 670
Weight	kg	57	57

[a] Controlled Rate, [b] Controlled Stress, [c] Controlled Deformation, [d] Option, [e] Depending on circulator performance, [f] When using suitable measuring geometries, [g] Depending on cooling option, [h] In combination with active hood

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Discover more rheology solutions
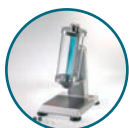
Falling ball viscometer

Handheld viscometer

Viscometer standardized to ISO 2555

Portable rheometer for flexible QC tasks

Rheometer for advanced QC and applied R&D

Extensional rheometer

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