

## AUTO-PROBE Q2000

Automated Method 2 Testing System

### AUTO-PROBE Q2000 Testing

Testing up to 48 Method 1 points results in more accurate flow measurement.

Both leak and calibration checks are easily accomplished at the beginning of the test and at the end of the final test run.

Automatically calculates sampling points, then stores them in the computer for easy recall each time the stack or duct is tested – speed of data collection reduces testing time.

Automatically performs Test Methods 2, 2G, 2H and CTM-041; records differential pressure, and all other measurements.

Complete automation provides all necessary online calculations and data storage on the hard drive – virtually eliminates error.

### Conventional Manual Testing

Typically only 12 or 16 Method 1 points are tested.

The likelihood of leaks and Pitot tube damage are increased due to the continuous handling of the test equipment during each run.

Sampling points must be manually calculated and the probe measured and marked each time the stack is tested.

To perform Test Method 2G, the Pitot tube is physically turned as testers check and visually average manometer readings.

Manual data logging in the field and data recording and transcription back at the office increases the opportunities for errors.

*Call today to find out about direct test pricing or equipment lease options.*

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TESTING, INC.**

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# AUTO-PROBE Q2000

Automated Method 2 Testing System  
Direct Testing/Equipment Lease Options



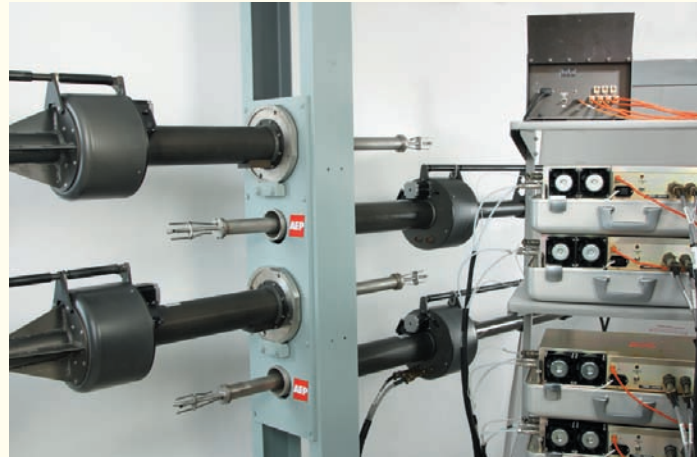
▶ **AUTO-PROBE Q2000**  
*automatically  
and accurately  
performs stack  
and duct flow  
testing procedures  
with a high degree  
of repeatability*



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**CALL TODAY FOR PRICING**

# AUTO-PROBE Q2000 Automated Method 2 Testing System



**Automated flow RATA testing improves accuracy of emissions data and can reduce environmental compliance costs**

**AUTO-PROBE Q2000 automatically and accurately performs stack and duct flow testing procedures with a high degree of repeatability**

▶ **Manual testing procedures are labor intensive**

The manual approach to U.S. EPA test Method 2 testing is labor-intensive. Two or more persons are needed to set up the apparatus, insert the "probe" to the determined traverse points in the stack or duct, and take readings.

▶ **Fully automated testing procedures**

USTI developed the first (and only) fully automated probe system for U.S. EPA Test Methods 1 and 2 that automatically perform all

necessary calculations. This patented system easily performs both leak and calibration checks, positions the Pitot tubes automatically to the appropriate sampling points and records the pressure, temperature, and other data as required by the test procedure.

▶ **Automates data collection and calculations**

The AUTO-PROBE Q2000 system is menu-driven via a laptop PC and prompts for all information needed for Test Method 1 and Test Method 2. The software was developed so the operator can easily input information and perform applicable testing procedures.

Once the application data has been entered (or an existing file for that site recalled) and the QA checks completed, the test team mounts the AUTO-PROBE Q2000 system onto the test ports. The laptop PC then automatically moves the probes to the designated sampling (traverse) points and records data. These readings

include differential pressure, temperature, barometric pressure, static pressure, and if applicable, flow yaw.

▶ **Reduces testing time and manpower**

Although mounting the AUTO-PROBE Q2000 system is typically a two person operation, a single technician can run the test. The AUTO-PROBE Q2000 also offers position repeatability and accuracy of +/- 0.020 inches and +/- 0.3 degrees. Actual testing time is significantly reduced since probes are positioned automatically and the data is read at each sampling point by the AUTO-PROBE Q2000 laptop PC. Four ports are typically tested simultaneously; however, up to eight ports can be tested simultaneously if the testing involves a rectangular stack or duct.

▶ **Virtually eliminates operator error**

The computerized calculations and collection of data dramatically reduces any

possible human error. The AUTO-PROBE Q2000 completely eliminates manual logging and data recording and transcription – two opportunities

for error. Test data that is collected on the hard drive of the AUTO-PROBE laptop PC can be easily recorded in concise, easy-to-read documentation.

▶ **Stored stack data guarantees rapid and accurate repeatability**

Once a stack's traverse points are determined by the AUTO-PROBE, and other operational parameters selected, they are permanently stored on the computer's hard drive for that particular test location. Each time the stack or duct is retested, the traverse points and all associated testing parameters are easily recalled for a quick, reliable and repeatable test.

▶ **Rugged mounting fixture secures AUTO-PROBE safely to the stack**

A rugged 4-inch 150# SS Flange is used to secure the AUTO-PROBE Q2000 to the stack's or duct's test ports. A 4-inch schedule 40 test port is standard. An optional adapter for 6-inch test ports is also available.

## AUTO-PROBE Q2000 Automated Method 2 Testing System

Improves accuracy and lowers flow measurement biases

Eliminates tester error

Reduces testing time

Reduces manpower

Automates data collection and calculations

Stores set-up data for test repeatability

Automated Test Method 2G for yaw correction

Automated Test Method 2H for wall effects correction

Automated Test Method CTM-041 for rectangular duct WAF

Pre- and post-leak and calibration checks are automated

▶ **AUTO-PROBE system automatically determines yaw (U.S. EPA Test Method 2G)**

When conducting flow measurements per U.S. EPA Test Method 2G, the Pitot tubes are automatically rotated to find the flow yaw angle at each traverse point. Once the yaw angle is measured, the AUTO-PROBE software records the yaw angle and corrects the flow readings for the true vertical component.

▶ **AUTO-PROBE system automatically determines wall effects (U.S. EPA Test Method 2H)**

When conducting flow measurements per U.S. EPA Test Method 2H, the AUTO-PROBE is programmed to measure and calculate a stack-specific wall effects ratio at each tested operating load. The site-specific ratio is typically better than the EPA's default value, thereby providing greater accuracy and added value to each test.

▶ **Laptop PC speeds testing; collects, calculates, and stores data**

A laptop PC is supplied with menu-driven software to perform testing using U.S. EPA Test Methods 1, 2, 2G, 2H and/or CTM-041. The software prompts for geometric data then calculates the traverse point locations. When the probe assemblies are in place and connected to the interface, automatic testing begins after both leak and calibration checks are performed. The software also prompts for gas concentrations and molecular weight so that the flow can be calculated.

The probe moves to the traverse points and collects data at each point automatically. The only manual portions of the testing are physically mounting the probes on the test ports and conducting leak checks. The use of a computer greatly speeds testing and provides significant changes in the way the data is handled. USTI's

computerized testing and data recording system makes recalling archived data and verifying or repeating tests for a given stack or duct a matter of a few simple keystrokes. Retesting a given stack or duct in a repeatable manner is assured.

▶ **Digitally driven positioning assembly for easy repeatability of position and angle**

The AUTO-PROBE Q2000 probes are rotated and moved into the stack or duct by precision stepper motors that are commanded digitally from the laptop PC. Linear position is verified by a rotary encoder. Probe position and angle are repeatable to +/- 0.020 inches and +/- 0.3 degrees, respectively.