



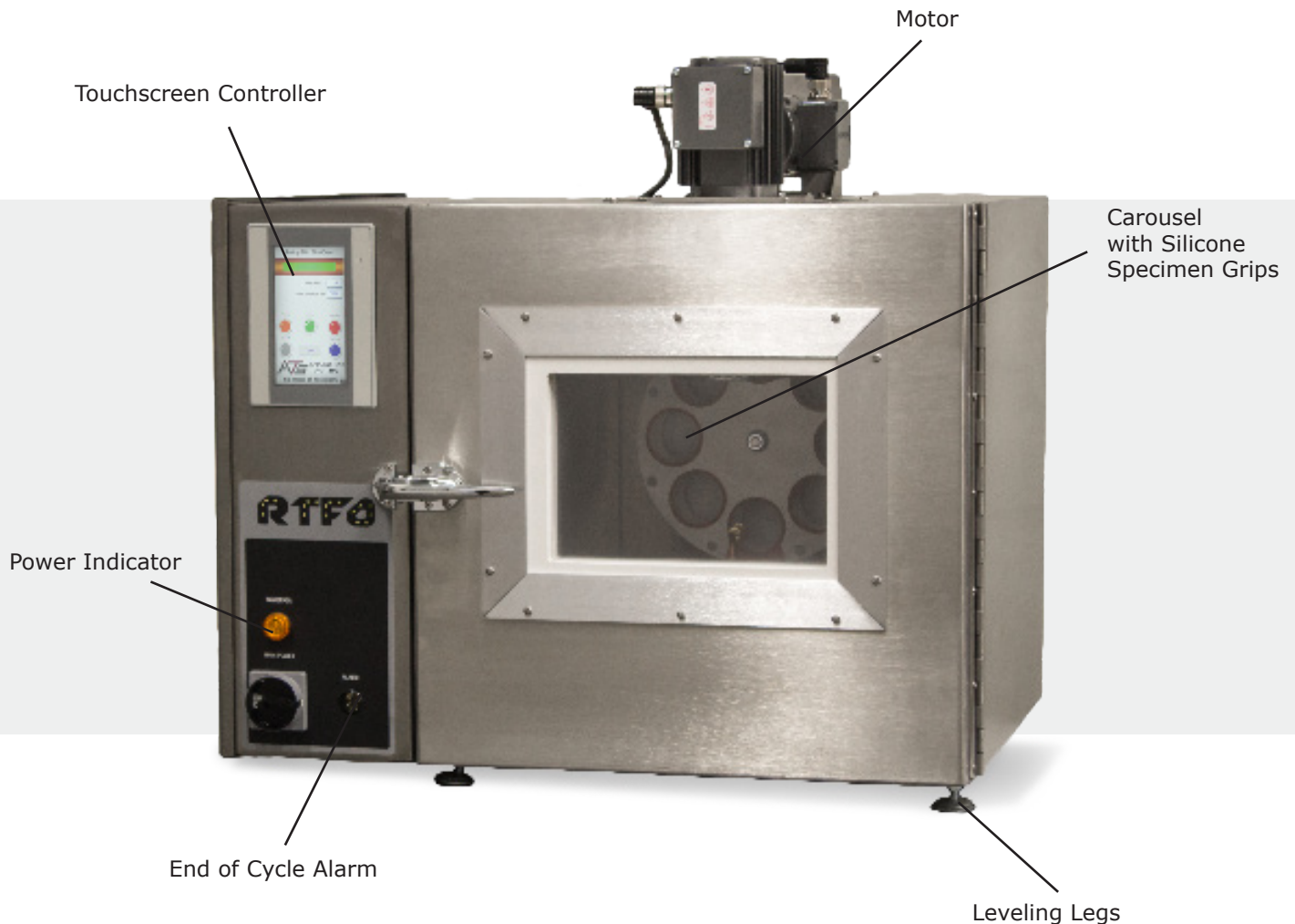
RTFO TOUCH

ROLLING THIN FILM OVEN

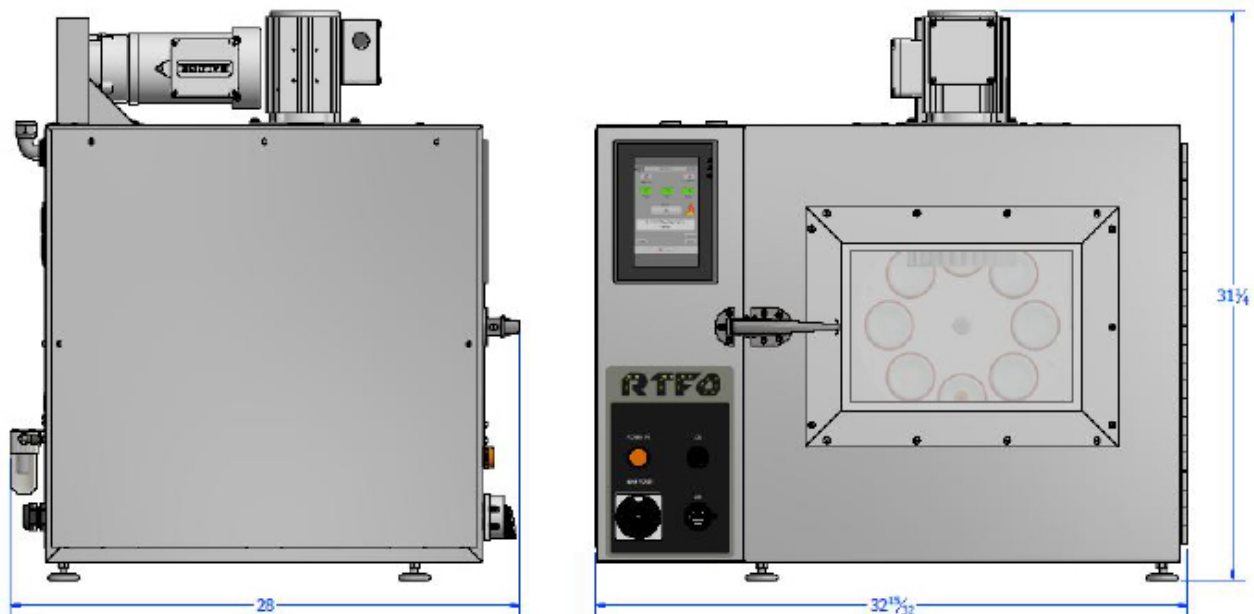
product bulletin

Touch-screen system designed to simulate the short-term aging of asphalt binder and other materials per ASTM D2872, AASHTO T240, EN 12607, and California Test Method 346 test standards.

the new **RTFO Touch**



The ATS Rolling Thin Film Oven (RTFO Touch) was developed utilizing years of process heating and industry knowledge. ATS has been a leading manufacturer of custom furnaces and ovens since 1965, and entered into the asphalt/bitumen testing market in the early 1990's with the introduction of Superpave. With the RTFO Touch we've combined knowledge of both industries to create a durable, efficient piece of equipment. Designed to simulate short-term aging of asphalt binder according to ASTM D2872, AASHTO T240, EN 12607, and California Test Method 346 test standards as part of the PG grading according to Superpave, the RTFO Touch features design features and technology exclusive to ATS.



Constructed from a double walled stainless steel oven, the RTFO Touch is capable of maintaining temperatures from 0°C to 200°C ± 0.1°C. A built-in NIST traceable platinum RTD temperature sensor ensures overall oven uniformity, and allows for temperature recovery within six minutes of specimen loading. A jog feature rotates the internal carousel, allowing RTFO specimen bottles to be easily secured within its soft, silicone compression rings. Mass change samples are clearly identified by two orange segments on the carousel, and a removable bottom tray allows for easy clean-up of spills and access to the heating element.



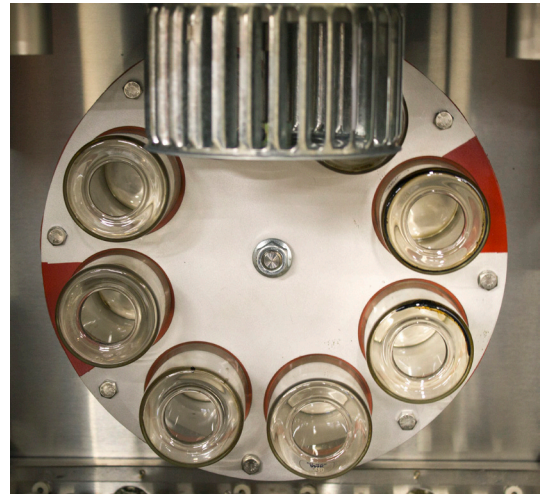
At ATS, we know that great roads are important everywhere in the world.

That's why our RTFO Touch software comes with pre-loaded language options in English, German, Spanish, French, Italian, Russian, Chinese, and Arabic.

system features

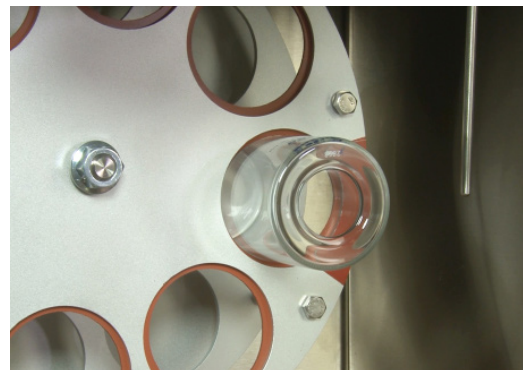
Key System Features

- Bench-top design with leveling legs for easy adjustments
- Six inch full-color touchscreen display
- Automatically saves test data for later viewing
- Built-in timer to accumulate out-of-range time
- Programmable temperatures from 0°C - 200°C
- Programmable aging duration from 0 to 999 hours
- Data acquisition: time, temperature, and air flow
- Data downloadable as a .CSV file via USB port on the front of the RTFO
- Network-ready Ethernet connection enables remote control using devices and PCs
- Optional battery backup system prevents interruption or data loss due to power failure or line voltage fluctuations.



Enhanced Specimen Support

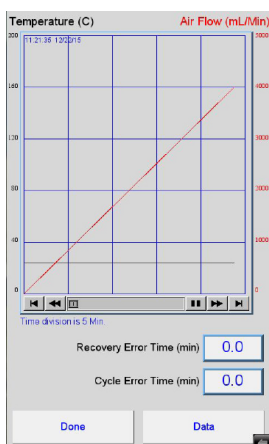
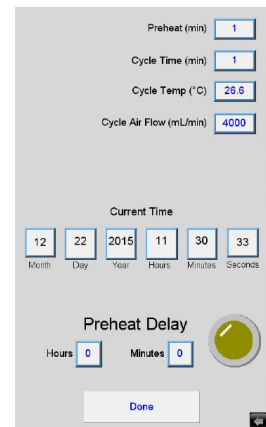
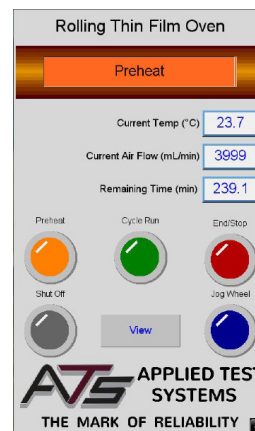
RTFO specimen bottles often fall victim to harsh, outdated spring clamp systems. These systems can stiffen over time, damaging specimens and proving difficult for operators. The ATS RTFO Touch features soft, secure silicone rings designed with our customers time and convenience in mind.



The ATS RTFO Touch features enhanced software components for user friendly testing and accurate results.

Programmable Test Parameters

The ATS RTFO Touch features a user friendly touchscreen display, giving the operator full access to the user interface. Operators can enter unique settings for airflow, temperature, and duration of the aging process. Users also have the ability to set the RTFO Touch to preheat at a specific date and time. This saves a significant amount of lab time, allowing operators to set the preheating time before their arrival and have their equipment ready for testing when they enter the laboratory.



Time	Temperature	Air Flow
11:28:09	23.9	4000
11:28:08	23.9	3999
11:28:07	23.9	3999
11:28:06	23.9	3999
11:28:05	23.9	3999
11:28:04	23.9	3999
11:28:03	23.9	4000
11:28:02	23.9	3999
11:28:01	23.9	4000
11:28:00	23.9	4000
11:25:59	23.9	4000
11:25:58	23.9	3999
11:25:57	23.9	3999
11:25:56	23.9	4000
11:25:55	23.9	4000
11:25:54	23.9	4000
11:25:53	23.9	3999
11:25:52	23.9	3999
11:25:51	23.9	4000
11:25:50	24.0	4000
11:25:49	24.0	3999
11:25:48	24.0	3999
11:25:47	24.0	3999
11:25:46	24.0	3999
11:25:45	24.0	3999
11:25:44	24.0	3999
11:25:43	24.0	3999
11:25:42	24.0	3999
11:25:41	24.0	3999
11:25:40	24.0	3999
11:25:39	24.0	3999
11:25:38	24.0	3999
11:25:37	24.0	4000
11:25:36	24.0	4000

Data Acquisition

Temperature, air flow, and time data are collected throughout the aging process. Users can view this information in real time on the touchscreen display in the form of raw data or graphs. Once the aging process is complete, a .CSV file is created and saved to the hard drive. This file can then be downloaded using the USB port on the front of the RTFO, and easily charted using Microsoft Excel® or another spreadsheet program.

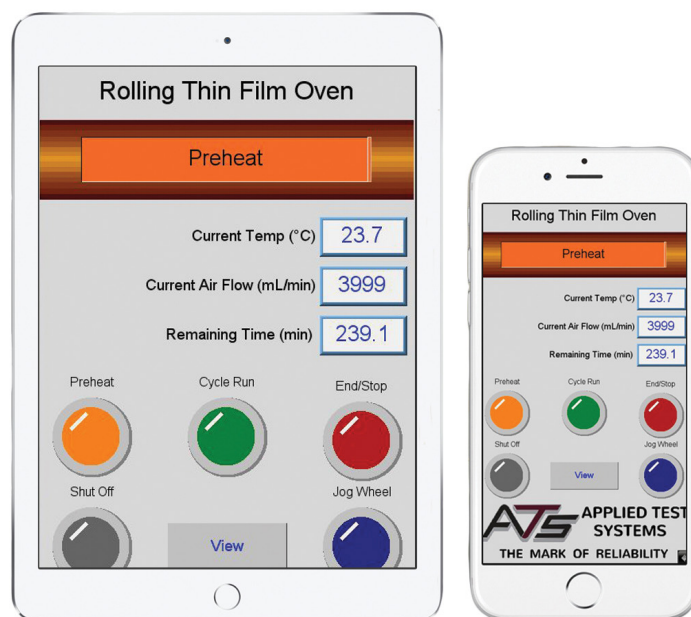
remote communication


Ethernet connection is built into every RTFO Touch, allowing users to connect to their equipment remotely.

Once the RTFO Touch has been connected to a network, users have the ability to access their equipment using a mobile phone, tablet, or PC. Users can connect, monitor, and operate their RTFO Touch from a remote location. Each RTFO Touch can be programmed with a unique IP address, allowing for a limitless number of machines on the same network.

Operators can utilize the RTFO Touch's network connection to download and install the latest software updates.

A USB port on the front of the unit allows for user friendly software updates. Operators can also use this USB port to download data onto a flashdrive.



Unit Properties	Bench-top, stainless steel oven design with leveling legs
Specimen Capacity	8 high temperature glass bottles
Front Panel Display	6 inch full-color touchscreen controller
Battery Backup System (optional)	4 hours minimum backup at full load, 60 day advance notification of end of useful battery
Operating Airflow	0 to 5,000 mL/m
Accuracy of Flow Meter	$\pm 0.8\%$ of reading + 0.2% of full scale NIST Traceable
Temperature Range	0°C to 200°C $\pm 0.5^\circ\text{C}$
Temperature Control	Microprocessor-based with Platinum RTD, NIST Traceable
Temperature Control Resolution	$\pm 0.1^\circ\text{C}$ from 0°C to 200°C
Test Temperature Uniformity	$\pm 1^\circ\text{C}$
Time to Set-Point	20 minutes
Return to Set-Point	5 minutes after loading of specimens
Over-Temperature Protection	Thermal shut-down switch (250°C)
Air Inlet	1/4in. male NPT
Data Acquisition	Sample rate of 1 per second. Time, temperature, and airflow.
Power Requirements	240 VAC 50/60 Hz, single phase 20 amps 3500 watts
Air Requirements	A source of clean, dry air with 60-150 psi
Electrical Outlet Requirements For Provided Plug	NEMA 6-20 

*Specifications subject to change without notice

ATS APPLIED TEST
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THE MARK OF RELIABILITY



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