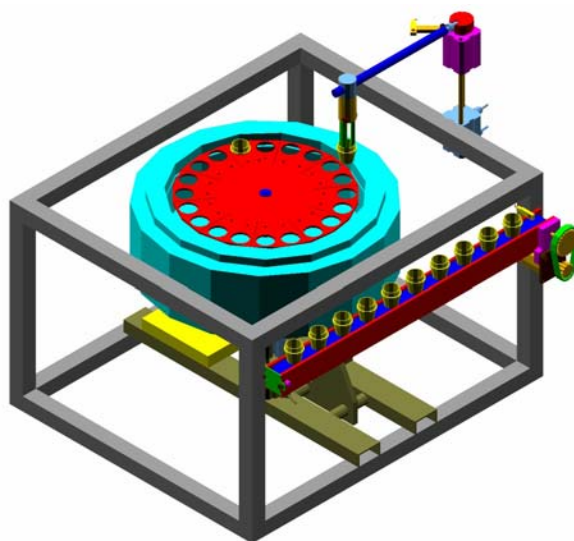


N Announces A **NEW** & Revolutionary Robotic Controlled Moisture - Ash Analyzer for large throughput (**Accurate TGA method**)

Navas Instruments MMS - 2003 Series
For laboratory or production control
 Multiple Matrix - Multiple Sample (19) Moisture-Ash analyzer
 Applications: Food, animal feed, snacks, dough, wheat, flour, calcium carbonate, coal (Ash in 20-25 minutes), cement (LOI in 20-25 minutes) etc ...
 Determination of: Moisture - ash, LOI

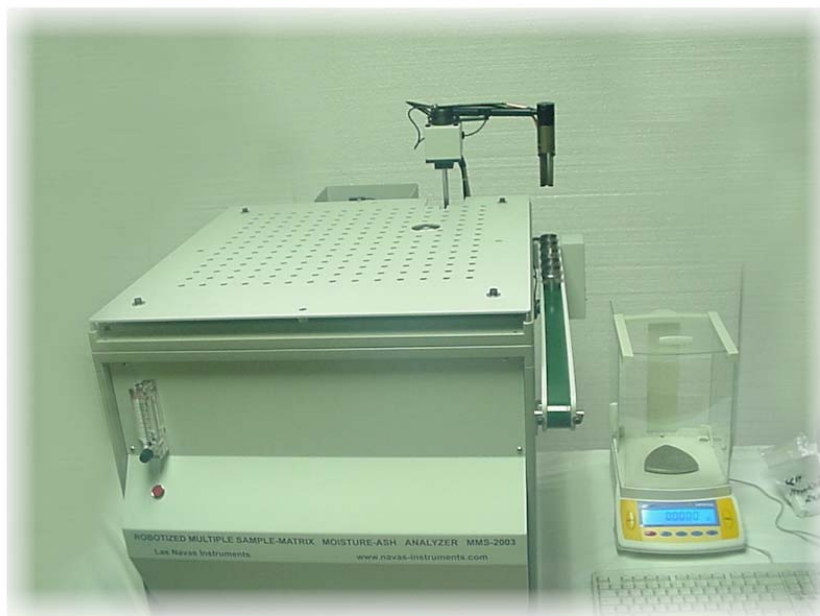


Robotic configuration (Patent Pending)

The robotic configuration allows using the dead analysis times present in conventional TGA.

The instrument converts following dead times into useful analysis time:

- 1 - Obtaining of initial weights of crucibles & samples during analysis time using external balance in Multitasking mode.
- 2 - Dead cooling-down & heating-up times are removed as the furnace is always hot, samples are inserted inside furnace through a hole on top of the furnace lid.
- 3 - Samples that are slow to provide results do not condition the rest of the samples, slow samples will stay in longer and fast samples will be removed sooner automatically by the robot and dropped in bin as soon as results are obtained.



Advantages and costs savings

This instrument has several costs savings:

- 1 - **Purchasing cost savings** (1 MMS TGA has 3-6 times more output capacity than conventional TGA).
- 2 - **Operation cost savings**: Operator involvement is reduced to the minimum possible.
- 3 - **Maintenance cost savings** (3-6 instruments are more expensive to repair and maintain than 1 instrument).
- 4 - **Speed of operation, results will be available in a much shorter time than conventional TGA.**

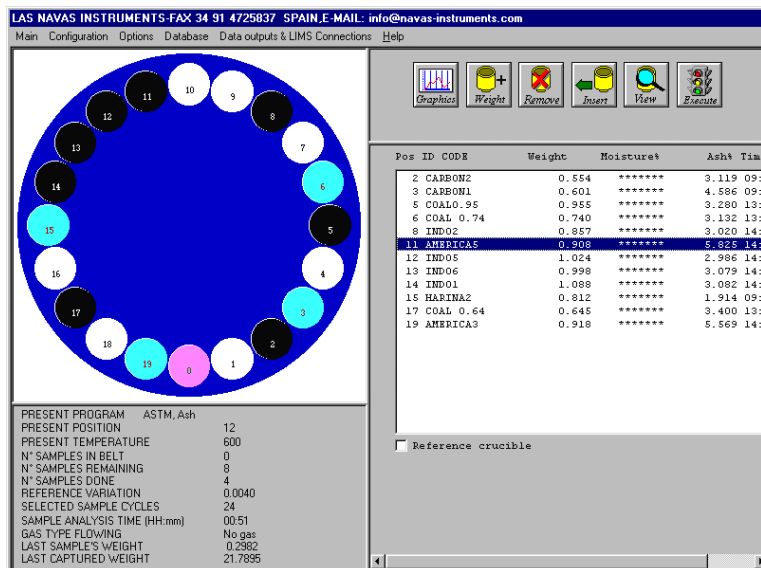
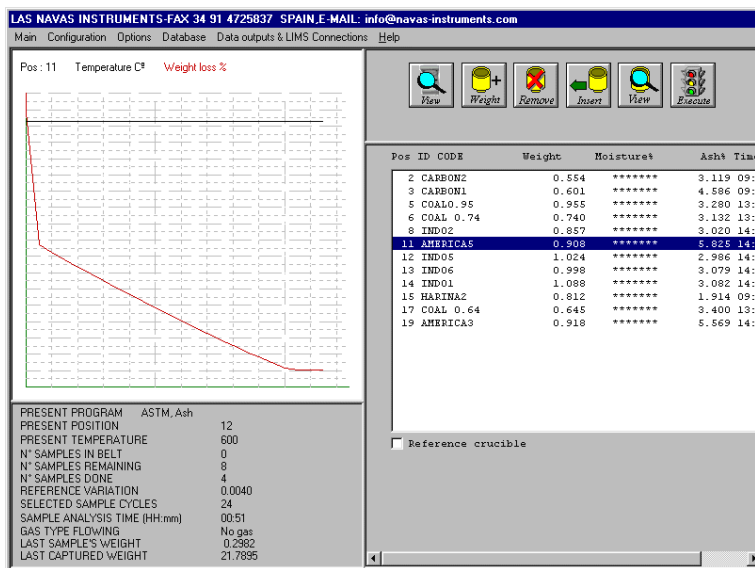
The carousel, pedestal and crucibles are made of refractory stainless steel alloy.

The carousel does not bend nor warp under temperature stress, metal is unbreakable unlike ceramics.

Ceramics charges with static electricity and may produce unstable balance readings.

Standard components

Navas Instruments buys complete brand name balances and temperature controllers from recognized manufacturers. The balances have display FOR EASY service. The temperature controller has 2 displays: 1 for the set point and other for the present temperature. The balance as well as the temperature controller are programmable using the buttons in the devices. These devices are manufactured by the experts in the business. All the electric and pneumatic parts in the TGA can be acquired in the market: Magnetic switches, relays, pneumatic valves, pistons, fans etc... With no dependency on Navas Instruments. Other TGA manufacturers use special electronics that can only be repaired and purchased from the manufacturer at higher cost. All the sensors are magnetic not affected by dust. Very few proprietary electronics (Only 2 boards), that fits inside 2 slots of the PC. ACCESS FOR SERVICE from back, sides, front and underneath.



MMS TGA application

The **Windows software** allows easy instrument operation. Integration with **Microsoft Office**, results are stored in Microsoft Access Data base automatically, data can be exported automatically and manually in TXT, CSV and XLS formats to Microsoft Excel or several Laboratory Information Management Systems (**LIMS**). Configurable parameters for all slopes up to 8 sets of settings: Final temperatures, plateau deviations, gases, etc... The process variables are displayed dynamically during analysis (Samples in conveyor, samples in carousel, present temperature, present carousel position, reference crucible variation, last samples weight etc...) The user is allowed to view the state of the furnace carousel dynamically, this provides a visual indication of the amount of samples inside furnace. **EASY TO USE DIAGNOSTICS SCREEN.**

Navas Instruments MMS - 2003 Series

Multiple Matrix - Multiple Sample Moisture-Ash analyzer

Brief technical specifications ...

Temp. range: 50 ~ 1000 ° C ± 1 ° C
Sample size: 0.1 ~ 10 grams.
Standard deviation of ± 0.0002 g
Weight Loss/Gain range: 0 ~ 100 %
etc ...



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