



HDT/VICAT Testing Machine – Thermal Analysis for Plastics NG-HDT

Standards: [ISO 2507](#), [ISO 75](#), [ISO 306](#), [ASTM D648](#), [ASTM D1525](#), [GB/T 8802](#), [GB/T 1633](#), [GB/T 1634](#)



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Description

The [HDT/VICAT testing machine](#) offers high precision, reliability, and efficiency for the thermal analysis of thermoplastics and polymers. Engineered with advanced sensors and high-temperature-resistant components, it ensures minimal deformation, fast response, and precise data transmission, delivering consistent and accurate test results. When integrated with a chiller system, testing capacity doubles, significantly enhancing productivity.

The test station, made from a low-expansion coefficient alloy, maintains measurement accuracy up to 200°C without recalibration, complying with international standards. Widely used for HDT and Vicat softening temperature testing, this HDT/VICAT machine is essential for plastic and pipe manufacturers, quality control laboratories, construction engineering, and research institutions. Designed for product development, material testing, and regulatory compliance, it is a crucial tool for manufacturers, quality assurance teams, and research professionals seeking precise and efficient thermal analysis solutions.

HDT/Vicat Testing Machine Features

- Simultaneous HDT and VICAT Testing – Conduct both tests at the same time, improving efficiency and throughput.
- High-Stability Test Station – Minimal deformation under heat, with deflection temperature accuracy up to 200°C without recalibration.
- Automatic Loading & Lifting – Eliminates manual weight handling for easier and more efficient operation.
- Compact & Cost-Effective Design – Tank volume is reduced by over 50%, significantly lowering operational costs compared to traditional designs.
- Precision Displacement Measurement – Swiss-made high-precision micrometer ensures exceptional accuracy and stability.
- Multi-Station Capability – Supports up to six test stations, with up to six deformation transducers and one temperature transducer for precise monitoring.



- Motor-Driven Test Stations – Easily raise stations from the bath at the touch of a button, simplifying specimen placement.
- Fully Automated Testing Process – Once the software is started, the test runs automatically according to user-defined parameters.
- Automatic Bath Cooling – After test completion, the system cools the bath to 280°C, improving equipment utilization for continuous testing.
- User-Friendly Software – Professional testing software with an intuitive interface for easy operation and data management.

Optimized Cooling System for Maximum Efficiency

Equipping the HDT/VICAT testing machine with a chiller system significantly enhances cooling performance, reducing downtime and increasing operational efficiency. Compared to traditional cooling methods, this advanced system offers several key advantages:

- High Initial Cooling Temperature – The system supports an initial cooling temperature of up to 280°C, ensuring rapid heat dissipation.
- Fast Cooling Speed – When used with a chiller, cooling time is reduced to just 45 minutes, dramatically improving equipment utilization and workflow efficiency.
- Optimized Temperature Control – The chiller lowers the oil temperature to below 25°C, minimizing test errors and ensuring compliance with ISO and ASTM standards for initial heating temperatures.
- Water-Saving Design – The water chiller recycles water, significantly reducing water consumption while maintaining effective cooling.

Test Station

- Flexible Test Configurations – Available with 3, 4, or 6 test stations to accommodate different testing needs.
- Precision Loading System – Includes 10N and 50N dead weights for accurate load application.
- Ultra-Accurate Deformation Measurement – Swiss-made high-precision micrometer with 0.001mm resolution and ± 0.005 mm accuracy ensures precise specimen deformation analysis.
- High-Accuracy Temperature Control – Japan-made RKC temperature controller with ± 0.5 °C accuracy guarantees consistent thermal conditions.
- Invar Steel Test Station Assembly – Constructed from low-expansion Invar Steel, minimizing deformation at high temperatures for exceptional test stability and accuracy.



Technical Specifications

Model	NG-HDT300	NH-HDT400	NG-HDT600
Type	A	B	C
Test station	3	4	6
Immersion bath	1	1	1
Heat transfer medium	Methyl Silicon oil, 22 liter Viscosity: 300 cSt, or 300 mm ² /s Silicon oil brand: DON CORNING PMX-200 350 cSt, KF96-300 Or transformer oil, 10#, 22 liter		
Temperature sensor	3	4	6
Temperature range	Ambient (20°C)-300°C		
Temperature accuracy	±0.5°C		
Heating speed	Speed A: 5±0.5°C/6min Speed B: 12±1°C/6min		
Micrometer	3	4	6
Deformation measurement range	0-10mm		
Deformation resolution	0.001mm		
Deformation measurement accuracy	0.003mm		
Vicat loading capacity	GA=10N±0.2N, GB=50N±1N		
Deformation measurement range	0-10mm		
HDT test	Method A: USE FIBRE STRESS 1.80Mpa Method B: USE FIBRE STRESS 0.45Mpa Method C: USE FIBRE STRESS 8.00Mpa		
HDT test span	Outer span: 100mm, ASTM D648		



	Inner span: 64mm, ISO 75		
Maximum heating power	5000W		
Power requirements	220V 50/60Hz 3 Phase		
Dimensions	32" x 24.5" x 28.5"		
Weight	253 lbs	253 lbs	617 lbs
Cooling	Nature cooling or water cooling (less than 150°C)		

Standard Accessories

Model	NG-HDT300	NH-HDT400	NG-HDT600
Type	A	B	C
Main frame	1 set	1 set	1 set
Test stations	3	4	6
Swiss-made micrometers	3 sets	4 sets	6 sets
Platinum resistance temperature sensors	3 sets	4 sets	6 sets
Temperature controllers	3 sets	4 sets	6 sets
Loading nose for HDT	3 sets	4 sets	6 sets
Needle for VICAT	3 sets	4 sets	6 sets
Weight set (10N, 50N)	3 sets	4 sets	6 sets
Test software	1 set	1 set	1 set

* Request a [formal quotation](#) or send an e-mail to sales@nextgentest.com for the most up-to-date pricing and applicable discounts and incentives.