



## Class D Single-Column Charpy Impact Tester – High-Precision Pendulum Testing Machine

**Standards:** [ISO 148](#), [EN 10045](#), [ASTM E23](#), [ASTM E1820](#), [ASTM E2298](#), [ASTM E74 \(Class AA\)](#)



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### Description

The [Class D Single-Column Charpy Impact Tester](#) is a high-precision pendulum impact testing machine developed to perform Charpy impact testing on metals in strict compliance with international standards, including ASTM E23, ISO 148, and EN100 45. This floor-standing system is available in two primary models with maximum impact energy capacities of 450 J (332 ft-lbs) and 750 J (553 ft-lbs), covering a wide range of test requirements.

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Each unit supports interchangeable pendulums rated at 150 J, 300 J, 450 J, and 600 J, offering flexibility for various energy levels. The 450 J model is commonly used in educational institutions, research laboratories, and government testing centers. The 750 J model is suited for demanding industrial applications, including aerospace, steel production, and heat treatment operations.

The system includes a fully enclosed safety frame and offers optional automation features, such as a PC-controlled specimen feeding mechanism and an integrated cooling system for testing at temperatures as low as -180°C. As a reliable and adaptable Charpy impact tester,



the Class D system is ideal for laboratories and production facilities seeking to meet rigorous testing standards while enhancing efficiency and operator safety.

## **Metals Impact Tester – Class D – Single-Column Charpy Impact Tester (Up to 750 J)**

The Class D system supports impact energy levels of **150 J (111 ft-lbs), 300 J (221 ft-lbs), 450 J (332 ft-lbs), 600 J (442 ft-lbs), and 750 J (553 ft-lbs)**. It features both analog and digital displays for precise readings and includes an optional PC connection for advanced data processing through dedicated software.

This high-energy solution is built for long-term use, with the flexibility to incorporate automation or low-temperature testing enhancements as needed.

Learn more in our blog post on how [pendulum impact testers](#) support accurate and compliant material testing.



## Watch Video



Watch the Class D Single-Column Charpy Impact Tester – High-Precision Pendulum Testing Machine product video.

[WATCH ON YOUTUBE](#)



## Single-Column Charpy Impact Tester Main Features

The Class D Single-Column Charpy Impact Tester is equipped with a comprehensive set of standard and optional features

### Key features include:

- Heavy cast iron base engineered to eliminate vibrations during testing.
- Rigid single-column frame (front and rear) for enhanced structural stability in high-energy tests.
- Standard PLC-based touchscreen control system for streamlined operation.
- Digital and analog display options, with optional PC connectivity for software-based data analysis.
- Motorized pendulum lifting system with automatic return after impact.
- The electromagnetic pendulum locking mechanism ensures test security and repeatability.
- Fully enclosed impact chamber for operator protection during testing.
- Precisely calculated pendulum height and mass to ensure optimal test accuracy.
- Tool-free striker replacement system to comply with ISO and ASTM specifications.
- High-precision bearings to reduce friction and improve measurement consistency.
- Aerodynamically rounded pendulum edges to minimize wind resistance and external interference.
- Optional computer control with semi-automatic operation (manual specimen change only).
- When combined with software control, an optional automated specimen feeding system enables complete automation.
- Optional environmental cooling system for testing at temperatures as low as  $-180^{\circ}\text{C}$ .



## High-Precision Pendulum Testing Machine Charpy Technical Specifications

NG-Impact Class D		
Model	NG452 Class D	NG752 Class D
Maximum Impact Energy	450 J	750 J (553 ft/lbs)
Optional Pendulum	150 J (111 ft/lbs), 300 J (221 ft/lbs)	300 J (221 ft/lbs), 450 J (332 ft/lbs), 600 J (442 ft/lbs)
Angle Resolution	0.025°	
Angle of Striking	150° ±1°	
Velocity of Striker	5.24 m/s	
Support Span	40 mm	
Radius of Curvature of Supports	1 mm	
Angle of Slope of Supports	0°	
Angle of Taper of Supports	11° ± 1°	
Radius of Striking Edge	2 mm	
Angle of Striking Tip	30°	
Width of Striking Edge	16 mm	
Specimen Dimensions	55 × 10 × 10 mm, 55 × 10 × 7.5 mm, 55 × 10 × 5 mm	
Overall Dimensions	84.6 × 33.5 × 82.7 in / 215 × 85 × 210 cm	

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NG-Impact Class D	
Weight	1875 lbs / 900 kg
Power Consumption	1.5 kW

## Model-Specific Configurations and Included Components

Name	Description	Model					
		NG452 D-2	NG752 D-2	NG452 D-3	NG752 D-3	NG452 D-4	NG752 D-4
<b>Machine Frame</b>	NG452/752 Class D						
<b>Framework</b>	Frame	X		X		X	
	Pendulum Lock/Release System	X		X		X	
	Driving System	X		X		X	
	Angle Measurement	X		X		X	
	PLC	X		X		X	
	Dial Gauge Display	X		X		X	
	Touch Screen	X		X		X	
<b>Motor</b>		X		X		X	
<b>Software</b>				X		X	
<b>Accessories</b>	Span Block Specimen Centering Block Centering Tongs Standard Tools Anchor Bolts Wedge Block	X		X		X	



Name	Description	Model		
PC Connection	RS232		X	X
Instrumented Impact System	Force transducer in a pendulum for quick plotting of the force-time graph Access to more testing parameters on the GenTest software			X

## High-Precision Pendulum Testing Machine – Specimen Collection and Filtering Device

A motorized collection device is available to automate the removal of broken specimens following impact testing. This system prevents potential obstructions that could interfere with the striker mechanism by removing the need for manual cleaning. The unit also includes an advanced filtering function that automatically differentiates between qualified and unqualified specimens, directing them to separate collection bins for efficient post-test sorting.

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