



## Metals Impact Tester - Class D 450J - Single Column Charpy and Izod Impact Tester

### Application:

This machine is used for measuring the Charpy impact resistance of metal and other materials

### Standards:

ISO 148, EN10045, ASTM E23, GB/T 229, GB/T 12778, and GOST 9454

### Features

- One-body cast frame design of seat and column provide high stability and rigidity
- Front and rear columns are symmetrical. Pendulum arm is designed of cantilever beam support, with simple structure and high machined precision
- Applies high precision bearing with small friction. Absorbing energy without loading is less than 0.3%
- Double reduction gear system replaces old style drive system with high efficiency and avoiding transmission failure
- Round pendulum head design reduces windage losses to the most
- High rigid pendulum arm prevents axial and transverse vibrations
- Exchangeable pendulum is simple to change to satisfy impact energy of 150J, 300J, 450J
- Electromagnetic release of pendulum hammer and electromagnetic clutch for locking the pendulum and raising it to its initial position. A damper is equipped to prevent strong bump when clutching
- Full-closed enclosure with high safety to prevent broken sample from splitting. Protective screening has interlock door. When the door opens, most operations can't work to avoid any wrong operation
- Apply SIEMENS industrial PLC to control pendulum, and high precision Japanese made NEMICON rotary encoder to measure striker real time position. The whole system is stable, reliable and accurate
- A big touch screen monitor may real-time displays striker angle, impact energy, toughness, and other parameters. User can input specimen data and other information such as company information into this monitor. When connected to a printer, user input information and test results will be printed
- Optional computer with software control is available to realize semiautomatic operation. Operator only need charge specimens. Others can be controlled by software
- Optional specimen feeding system is available. Combined with computer and software, fully automatic operation can be realized
- Optional cooling system is available to satisfy cold specimen test down to -180°C

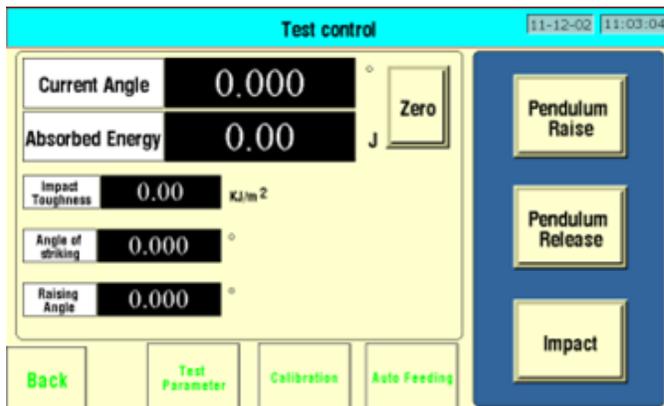


### Specimen Collection and Filtering Device

- Motorized device is used for collecting broken specimens after impact, instead of manual cleaning, which fully prevents striker from getting stuck
- Unique specimen filtering function: automatically judge and transport qualified and unqualified specimens to different collecting box



## Wide View Touch Screen Display



## Professional Test Software

This software is designed specifically for testing metals to Charpy standards. Software provides an easy-to-use method for gathering, calculating and storing impact test results. The test result can be printed and exported to EXCEL for review.

### Display Features

- Status of system limits
- Real-time display of hammer status
- Hammer set up and verification allows for hammer weight input
- Displays potential/impact energy
- Displays theoretical velocity
- Encoder resolution of 0.025°



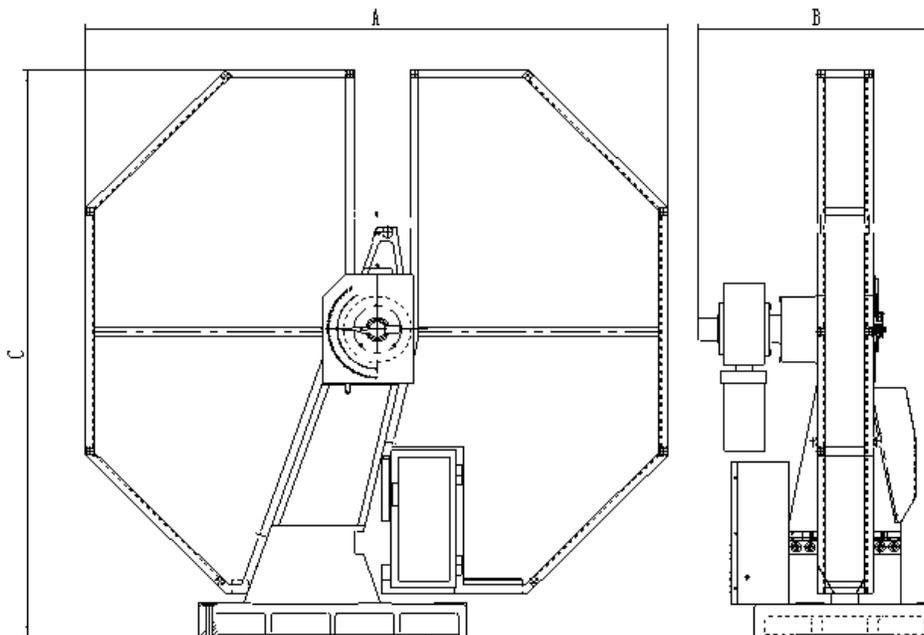
### Test report

- Template can be customized according to requirements
- The report can be exported to EXCEL for review

Report of Impact Test																	
EE																	
Sample No.	Material			Test Piece				Dip Type	Direction	Temp. index (°C)	Absorbed Energy (J)			Average Energy (J)	Standard weight (J)	Result	
	Lot code	Cylinder type	Specs (mm)	Length (mm)	Width (mm)	Thickness (mm)	Dip depth (mm)				1	2	3				
1				95	10	10	2	U	Vertical	-96	0.09	0.09	0.09	0.09	150		
2				95	10	10	2	V	Vertical	-96	0.09	0.09	0.09	0.09	0		
3	S4	F4	TS	95	10	10	2	None	Horizontal	-96	0.09	0.09	0.09	0.09	150		
4	S4	F4	TS	95	10	10	2	U	Horizontal	-96	0.09	0.09	0.09	0.09	150		
5	S4	F4	TS	95	10	10	2	V	Horizontal	-96	0.09	0.09	0.09	0.09	150		
6	S4	F4	TS	95	10	10	2	V	Horizontal	-96	0.09	0.09	0.09	0.09	150		
Test type										Source of piece							
Testing machine										Date							

## Technical Specifications:

NG-Impact Class D		
<b>Model</b>		NG-452D
<b>Maximum energy</b>		450J
<b>Optional pendulum</b>		150J, 300J
<b>Angle of striking</b>		150°±1°
<b>Angle measurement resolution</b>		0.025°
<b>Distance from the axis of support to the center of percussion</b>		750mm
<b>Velocity of striking</b>		5.24m/s
<b>Support</b>	Support span	40mm
	Radius of curvature of supports	1mm
	Angle of taper of supports	11°±1°
<b>Striking tup Support</b>	Radius of striking edge	2mm
	Angle of striking tip	30°
	Thickness of striker	
	Support span	40mm
<b>Specimen dimension</b>		55×10×10mm 55×10×7.5mm 55×10×5mm
<b>Weight</b>		900kg
<b>Dimension(A x B x C) Including protection shield</b>		2200×800×2050mm
<b>Dimension(A x B x C) equipped with auto feeding system</b>		2200×1450×2050mm
<b>Power requirements</b>		3-phase, 5-line, AC 380V±10% 50Hz 1.5kW
<b>Pendulum moment</b>	150J	80.3848 Nm
	300J	150.7695 Nm
	450J	241.1543 Nm



### Standard Configurations:

Name	Description	Model		
<b>Machine Frame</b>	NG452 Class D	NG452 D-2	NG452 D-3	NG452 D-4
<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
	Full Protection Shield	X	X	X
<b>Software</b>			X	X
<b>Communication cable to PC</b>	RS232		X	X
<b>Accessories</b>	Span block			
	Specimen centering block			
	Centering tongs			
	inside-hexagonal spanner	X	X	X
	Anchor bolts			
	wedge block			
<b>Instrumented impact system</b>	Data sampling card			
	Data Conditioner			X
	Instrumented test software			

### Optional Pendulums:

Name	Specifications	
<b>Charpy pendulum &amp; specimen support (striking tup: R2/R8)</b>	150J	NG452D
	300J	NG452D
	450J	NG452D
<b>Please specify ISO striker or ASTM striker</b>		

### Optional Instrumental Pendulums

Name	Specifications	
<b>Instrumented Charpy pendulum &amp; specimen support (striking tup with 30kN force transducer: R2/R8)</b>	150J	NG452D-4
	300J	NG452D-4
	450J	NG452D-4
<b>Please specify ISO striker or ASTM striker</b>		

## Optional Cooling System

Name		Specifications	
Automatic cooling system with specimen auto-feeding system	NG-LTC601A-2	-60°C~ambient Cooling method: air compressor	Specimen auto-feeding system Low temperature chamber Air compressor
	NG-LTC182B-2	-180°C~ambient Cooling method: liquid nitrogen	Specimen auto-feeding system Low temperature chamber Liquid nitrogen cylinder
Manual cooling system	NG-CDW-60-05	-60°C~ambient Cooling method: air compressor	Low temperature chamber Air compressor
	NG-CDW-80-05	-80°C~ambient Cooling method: air compressor	

## Optional Heating and Feeding System

Name	Model	Description	Accessories
High temperature auto-feeding system	NG-AUF902	12 specimens can be tested at one time continuously, used with high temperature furnace	Furnace Specimen charging system Specimen feeding system Specimen rack Temperature control system Air pump

## Optional Notching and Broaching System

Name	Model
Dual Notching and Broaching System	GenNotch 4000

## Shipping Dimensions

Name	Crated dimension	Crated weight
Main Unit	48x42.5x73-inches 122x108x186 (cm)	1875 lbs / 850 kg
Full-closed protection shield	81x21.60x49.20-inches 206x55x125 (cm)	330 lbs / 150 kg
Main machine with specimen feeding system	67x63x73.20-inches 170x160x186 (cm)	1985 lbs / 900 kg
Nitrogen cylinder	26x26x70.50-inches 66x66x179 (cm)	220 lbs / 100kg

## Accessory Images



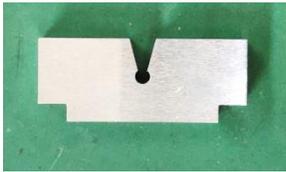
Wedge



Foundation



Pendulum



Span gauge



Specimen centering gauge



Centering tongs



Anvil & support



Allen wrench



R485-RS232Communication