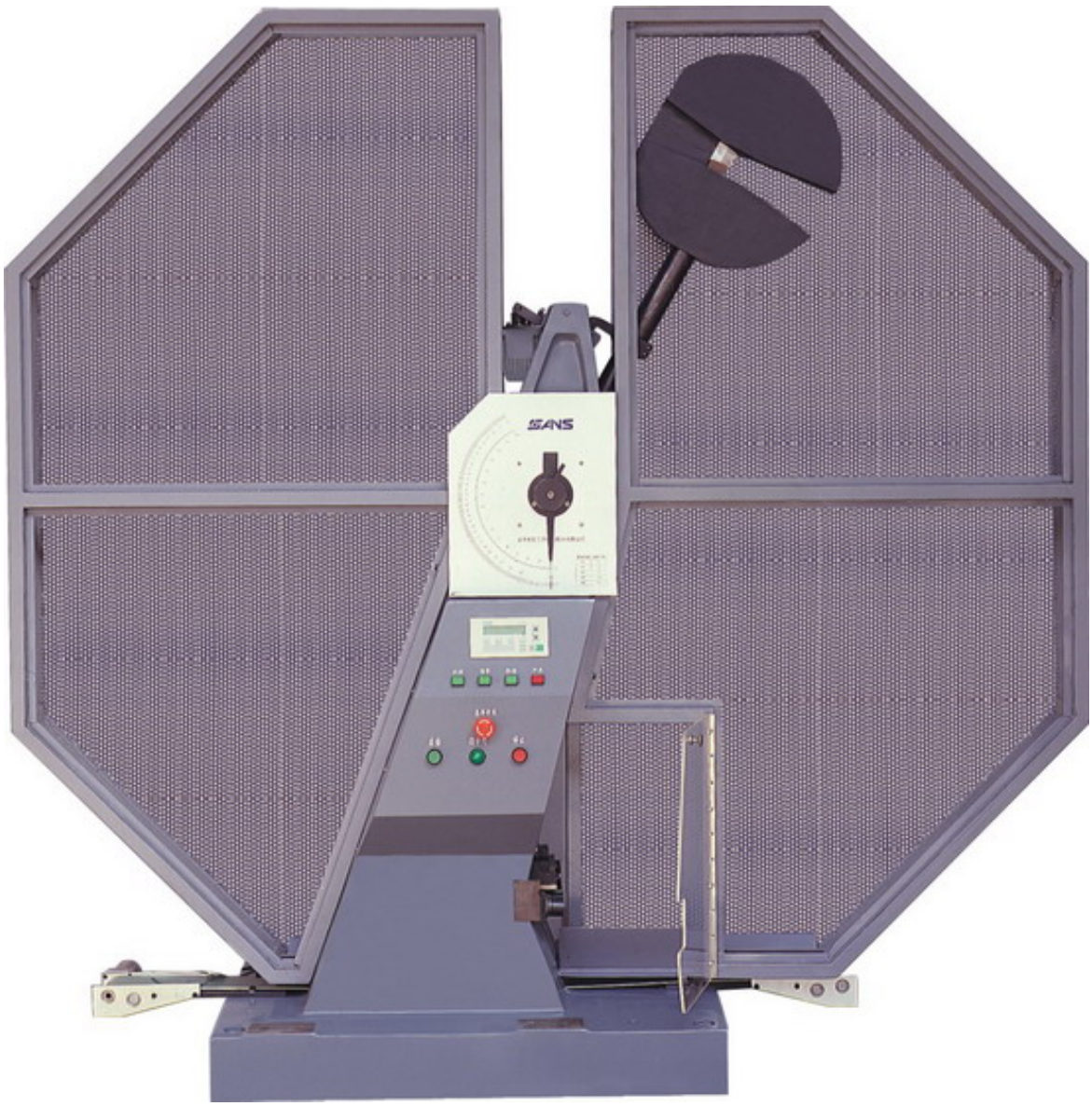
Pendulum Impact Testing Machine for metal Charpy impact

ZBC 2000 Series 150J-750J



ZBC2000 Series

The model ZBC2000 series pendulum impact tester comes from SANS pendulum impact testing machines series family, fashionable design and complete assembly with SANS high technology satisfied with impact resistance tests of metal material under dynamic loading, It is widely applied into the following industries: manufacturer of metal material, quality control of products, institutes and colleges, R&D….

Comply with ISO R148, ISO R83, EN10045, ASTM E23

Key Features of ZBC2000

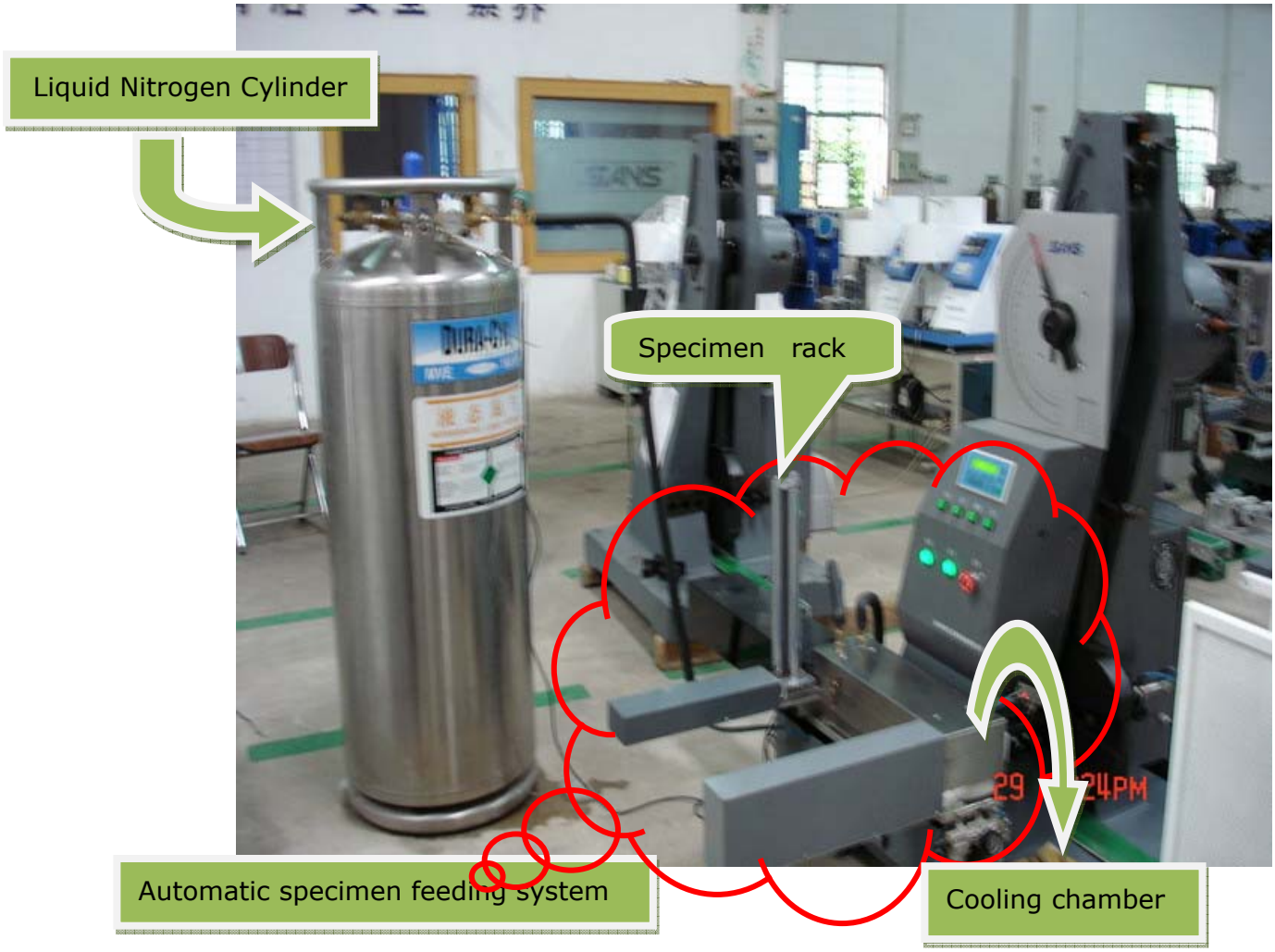
7. One-piece cast frame design of seat and column provide high stability and rigidity.
8. Front and rear columns are symmetrical. Pendulum arm is designed of cantilever beam support, with simple structure and high machined precision.
9. Apply high precision bearing with small friction. Absorbing energy without loading is less than 0.3%.
10. Double reduction gear system replaces old style drive system with high efficiency and avoiding transmission failure.
11. Round pendulum head design reduces windage losses to the most. Striking bit is fixed by bolts and wedge pressing blocks, and easy to change. High rigid pendulum arm prevents axial and transverse vibrations.
12. Exchangeable pendulum is simple to change to satisfy impact energy of 150J, 300J, 450J, 600J, 750J.
13. Electromagnetic release of pendulum hammer.
14. Electromagnetic clutch for braking the pendulum and lifting to it to its initial position. A damper is equipped to prevent strong bump when clutching.
15. Be equipped with full-closed enclosure with nice appearance and high safety.

1. Apply industrial PLC to control pendulum, and high precision rotary encoder to measure striker real time position. The whole system is stable, reliable and accurate.
2. A mini LCD 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.
3. Traditional analogue round display inclusive of drag-pointer and scales for immediate display of the used impact energy in Joule.
4. Optional computer with software control is available to realize semiautomatic operation. Operator only need charge specimens. Others can be controlled by software.
5. Optional specimen feeding system is available. Combined with computer and software, fully automatic operation can be realized.
6. Optional cooling chamber is available to satisfy cold specimen test down to -100℃.

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.

Optional specimen feeding system and cooling chamber



Features

- Specimen rack can accommodate 40 pieces specimen
- Cooling chamber can accommodate 40 pieces specimen
- The modular system makes an economical adaptation to specific customer requirements possible
- Pneumatic actuation provides high positioning accuracy of the automatic specimen feeding, eliminating human influences
- Reproducibility of the testing requirements even over a long operating time, no influences through different operators
- Smoothly connected to impact tester, fully automatic, laborsaving, high productivity and safety

Customized model ZBC2503 for metal DT test

- Only used for dynamic tear testing (DT test) of metallic materials, impact energy is 5000J.
- Fully automatic control allows program input only by pressing the buttons. Easy to operation and high efficient.
- Automatically brake after impact then raise the pendulum and lock.
- Compatible control panel and display can satisfy customer's requirements. It can display impact absorbing energy, pendulum raising angle, energy loss and continuous impact frequency.
- High impact energy is suitable for black metal test with more impact ductility, such as steel and alloy.
- It fully complies with ASTM E604 <Standard Test Method for Dynamic Tear Testing of Metallic Materials>

Note:
DT test is to determine absorbed energy by dynamic tear specimens in Charpy impact test in accordance with relative standards (I.e. dynamic tear energy means the dynamic tear resistance of specific thickness metallic material), and to determine fiber fracture surface ratio.

Technical Specifications of ZBC2000 series

Model No.	ZBC2152	ZBC2302	ZBC2452	ZBC2602	ZBC2752	ZBC2503
Max impact energy(J)	150J	300J	450J	600J	750J	5000J
Pendulum moment (Nm)	80.3848	160.7695	241.1543	321.5390	401.9238	2928.932
Distance from striking center to support center	750mm					1380
Raising angle	150°					135°
Angle resolution	0.1°					0.1°
Impact speed	5.24m/s					6.797m/s
Anvil span	40mm					165±0.8mm
Radius of anvils	1-1.5mm					12.7±0.8mm
Angle of taper of anvil	11°±1°					11°
Radius of striker edge	2-2.5mm					12.7±0.8mm
Angle at tip of striker	30°±1°					30°±1°
Width of striker	16mm					37mm
Specimen dimensions	10mm /7.5mm/5mm X 10mm X 55mm					(181±2mm)x(40.6 ±1mm)x5~16±1m
Dimension (LXWXH)	960mm X 735mm X 1500mm					3760mmx2735mmx 3660mm
Weight(Net)	900kg					6500kg
Power supply	Three-phase, 380V±10%, 2A					Three-phase, 380V±10%

Standard Accessories

- Main frame, one set (including one piece photoelectric encoder)
- LCD monitor, one set
- Dial display: one set
- Charpy pendulum, one piece
- Charpy support and anvil: one set
- Base adjusting device, one set
- Safety shield, one set.
- Motorized , one set
- printer, one set
- Tool kit, one set

Optional Accessories

- Automatic specimen feeding system
- Specimen collection and filtering device
- Computer and software
- Cold chamber

Technical Specifications of cold chamber

Model Number	ZDW1102	ZDW2601
Cooling method	liquid nitrogen (LN_2)	compressor
Temperature range	Ambient~-100℃	Ambient~ -60℃
Cooling speed	20 minutes From ambient to -100℃	80 minutes from ambient to -60℃
LN_2 cylinder capacity	15L/160L (customer order)	----------
Weight	200Kg	80Kg
Power supply	Single-phase, 220V2A 50Hz	Single-phase, 220V8A 50Hz
Space for specimen	120mmX120mmX80mm (LXWXH)	
Specimen accommodation	120 pieces Charpy specimen	
Temperature gradient	≤0.5℃	
Temperature vibration	≤±1℃	
Temperature accuracy	0.3℃	
Temperature resolution	0.1℃	
Cooling medium	Liquid nitrogen	anhydrous alcohol (99.7%)

Note: For ZDW1102, Specimen placement space can be made according to customer's requirements to meet DT, NDT and DWTT test.

Software

The ZBC Test software provides real-time display pendulum raising angles, impact energy and other parameters. All operations can be completed in the software, like pendulum raising, releasing, impacting, and returning. Test results can be saved automatically to Access database, or easily exported to Excel. The software is simple and easy to operate.