Drop Weight Impact Testing Machine for NDT & DWTT

ZCJ2000 series

The ZCJ2000 series Drop Weight Impact Testing Machine is suitable for performing DWTT or NDT test. The test method is to raise the striker to a specific height then release, free drop striker impacts the specimen and realize dynamic loading. It consists of the model ZCJ2303 and the model ZCJ2304.

The model **ZCJ2303** (Fig1) is specially designed to determine Nil-Ductility transition (NDT) temperature of ferritic steels. NDT temperature is the highest temperature at which the specimen fractures. It means the highest temperature at which the steel material with small cracks fractures under dynamic yield stress. This test method is that raise the striker to a specific height then release, free drop striker impacts the specimen and realize dynamic loading. After impact, evaluate the specimen and adjust cooling temperature, conduct many times test to get NDT temperature.

Conform to ASTM E208 (Standard test method of conducting drop-weight test to determine Nil-Ductility transition temperature of ferric steels

Fig1. ZCJ2303 (NDT test)

ZCJ2304 is mainly used for drop weight tear test (DWTT) of Ferritic Steels, to observe specimen fracture surface after impact within the temperature that fracture type is converted from non-ductility to ductility. This test method is that striker with some weights is raised to some height then released. Free drop striker impacts and tears the specimen. After impact, observe shape and features of fracture surface.

Special features:

- ✧ Upper and lower separate four-column configuration, superior reliability and stability
- ✧ Lifting up the hammer via servomotor ensure high accuracy control
- ✧

Conform to ASTM E604 <Standard Test Method For Dynamic Tear Testing of Metallic Materials>

Key Features of ZCJ2000

- Adopting Siemens CPU224 controller with noted brand EVIEW MT506L type touch screen brings the advantage of high reliability, strong interference resistance performance, ideal adaptability, large scope expansibility, and wider versatility
- Automatic hammer positioned, and automatic rise up the hammer to pre-set height, The impact energy is changeable by replacing hammers or adjusting the crosshead height.
- Easy to operate control panel for precision manual control.
- Automatically feeding testing samples
- With motor drive system; Chains driven reduces abrasion.
- Automatic check the cover to close.
- The enclosure is fully interlocked so that the machine can not run unless all the guards are ready.
- Special protective enclosure keep the operator from flying scraps.
- Automatic avoiding second-time impact fixture.
- The self-hold fixture guarantees high reliable safety.

Fig2. ZCJ2304 (DWTT test)

Technical Specifications

Model	ZCJ2303	ZCJ2304
Maximum impact energy(J)	3000J	30000J
Minimum impact energy(J)	800J	\
Maximum impact height(mm)	4000mm	2800mm
raising Height accuracy	±5mm	±5mm
Striker weight (kg)	80Kg	Max.1100kg
Striker weight accuracy	0.5%	0.5%
Striker raising speed	9.6m/min	4.2 m/min
Maximum impact speed	\	7.4 m/min
Specimen alignment accuracy	±1mm	±1mm
Impact alignment accuracy	±1mm	±1mm
Dimension(mm)	1280X1300X5100	1580X1380X5300
dimension of specimen(mm)	P1 type: 360±1 X 90±2 X 25±2.5	300±5 X 75±1.5 X (5-40)
	P2 type: 130±1 X 50±2 X 20±1	
	P3 type: 130±1 X 50±2 X 16±0.5	
weight(kg)	Appox.1500kg	Appox.6500kg
Power	Three-phase, 380V±10%,10A	Three-phases 380V±10%,10A

Standard Accessories

1、Load frame, one set

2、Electric control system, one set

3、LCD controller, one set

4、Japanese OMRON switch, one set

5、Japanese displacement transducer , one piece

6、Advanced timing motor, two sets