Pendulum Impact | Charpy | PIT Series Type E | 5000J, 7500J

Maximum impact energy: **5000J**, **7500J**

Standards: ASTM E604, GB/T 5482

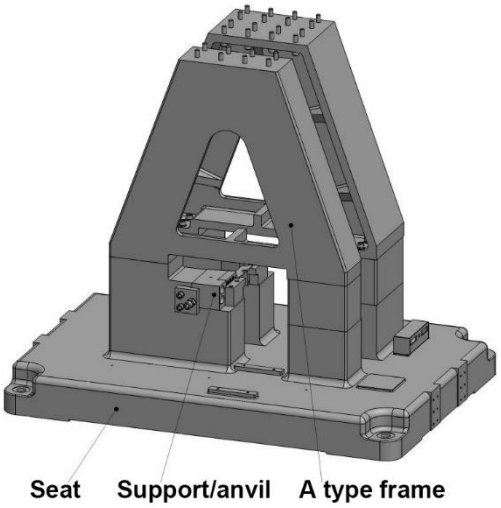
Functions:

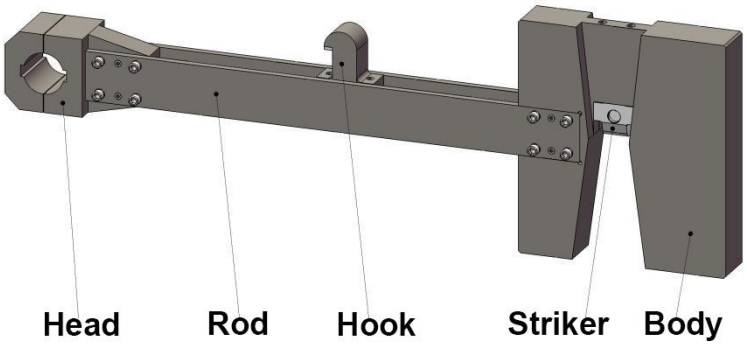
This type of testing machine is specially used for dynamic tear testing (**DT test**) of metallic materials.

Features:

1. Automatic control: specimen feeding, impacting, pendulum raising and specimen collecting can be fully automatically operated.
2. Heavy duty seat and frame ensures stiffness and accuracy, reducing shock after impact. Seat is made of high strength carbon steel, frame is made of H shape 300# steel. Specimen anvil is made of 45# forged steel with quenching and tempering treatment, ensuring high strength and stability.

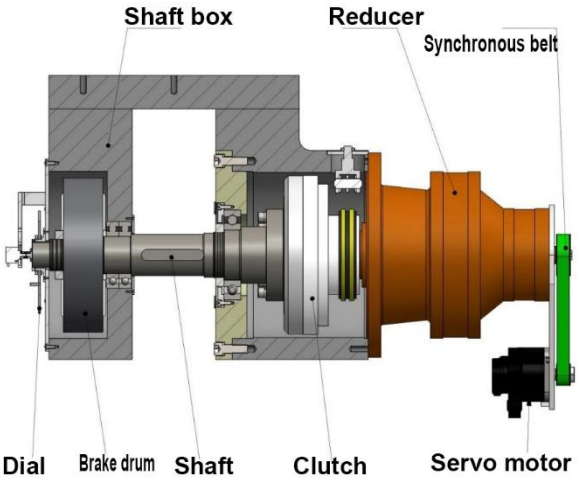
3. High strength pendulum body ensures stiffness in axial and transverse direction. Pendulum consists of pendulum body, arm, hook and striking knife. Arm is made of 45# steel and then machined to H shape. Body and arm is treated with quenching and tempering. Striker knife is made of tool steel with hardening treatment and hardness can reach 62HRC.

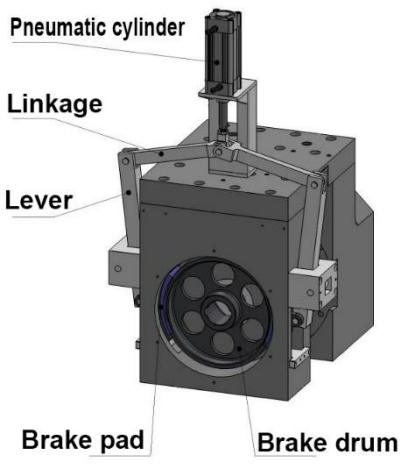




4. Three types of pendulum raising device provides three types of impact energy without changing pendulum.
5. Driving system

   Use serv0 motor to raise pendulum with constant torque output and precise raise. Cycloidal-pin gear speed reducer directly drives clutch with more advantages of simple structure, high speed-reduction ratio, high overload resistance, high efficiency, and small size and easy to maintain.

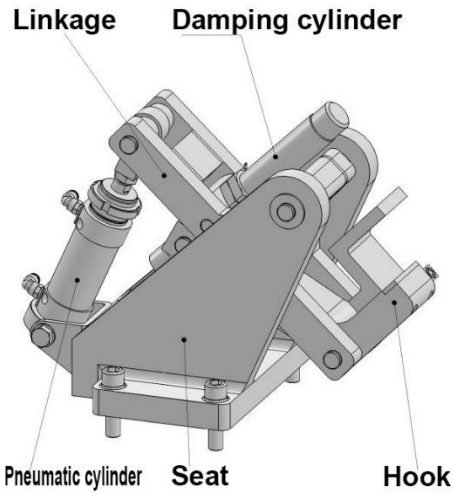




6. Brake system

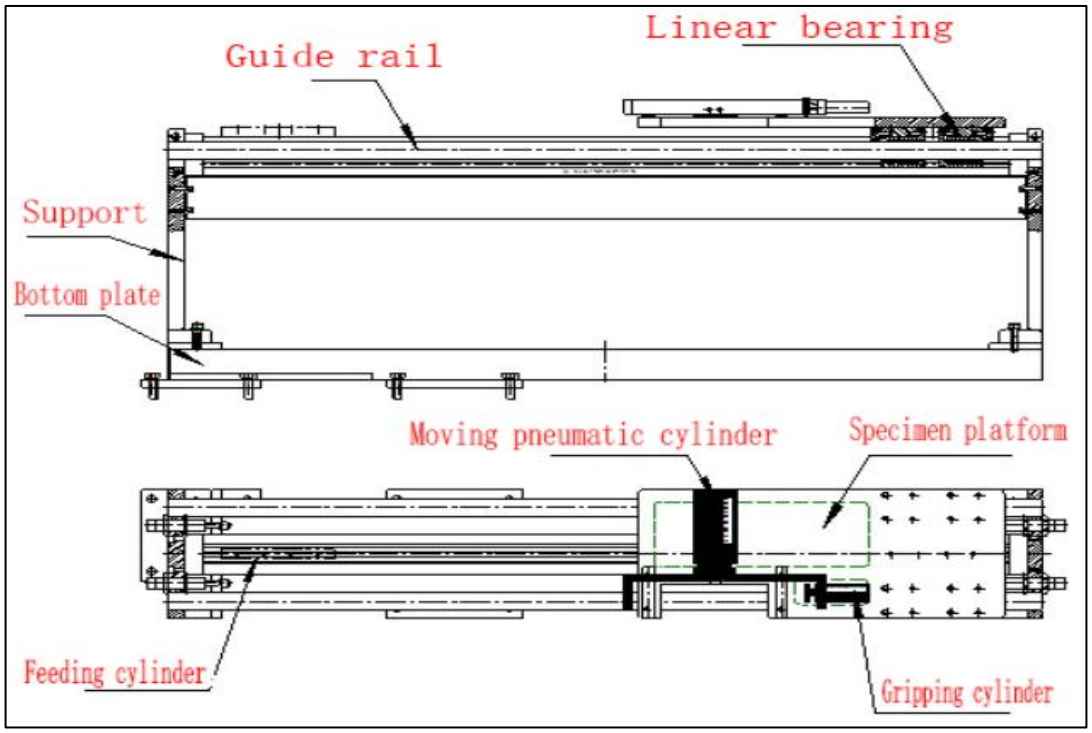
Equipped with pneumatic braking device avoids clutch working at high speed, reduces clutch impact abrasion, and extend its life. Brake system includes brake discs, pads, levers and pneumatic cylinder. It is used to reduce speed and stop the pendulum when raise to top, then clutch closes and drives the pendulum to initial striking position.

7. Pendulum lock system



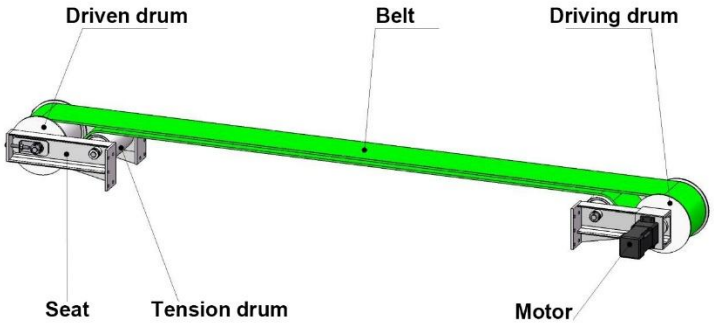
Pneumatic cylinder drives linkage and hook to lock pendulum or release pendulum, damping cylinder is used for damping during pendulum lock.

8. Equipped with specimen feeding and positioning device provides rapid feeding, precise positioning, high efficiency and safety, and reducing labor intensity.
   After placing specimen onto specimen platform, gripping cylinder starts to work and position the specimen in length direction; then moving cylinder carries specimen in front of specimen support; finally feeding cylinder carries specimen onto specimen support, and all cylinder returns to initial position.



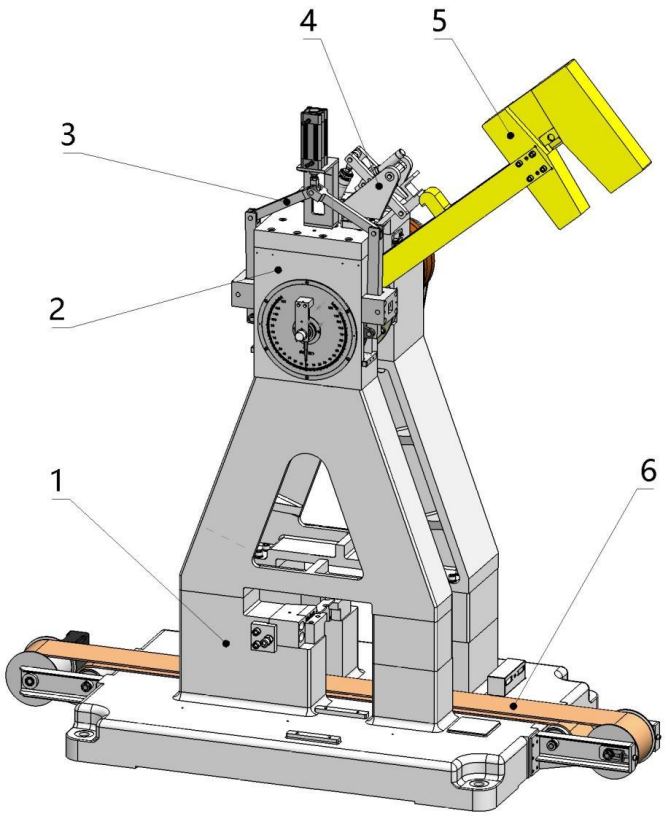
9. Equipped with multiple energy display device showing test results at the same time.

10. Equipped with specimen collecting device, bring the tested specimen out of the machine. It allows operator to collect specimen without going inside, greatly improving efficiency and working safety.



11. Specimen support consists support and anvil. Anvil is made of CrMn steel with hardening treatment, reaching 58~62HRC hardness.
12. Full-closed safety shield prevents splitting of cracked specimen. Limit switch on the door ensures operator's safety.
13. Apply German Siemens S7-200 series PLC as controller. Full-automatic operation reduces labor intensity, and improves working efficiency and safety.

Structure:



1	Frame
2	Shaft box
3	Brake system
4	Lock system
5	Pendulum
6	Specimen collection system

Parameters:

Model	PIT503E	PIT753E
Maximum impact energy	5000J	7500J
Angle of striking	135°	135°
Angle resolution	0.1°	0.1°
Distance from the axis of support to the center of percussion	1380mm	1500mm
Velocity of striking	6.797m/s	7.087m/s
Support span	165±0.8mm	165±0.8,406±1.5,500±1.5, 600±1.5mm(adjustable)
Radius of curvature of supports	12.7±0.8mm	12.7±0.8mm,35±0.5mm
Angle of taper of supports	11°±1°	11°±1°
Radius of striking edge	12.7±0.8mm	12.7±0.8mm,38±0.5mm
Angle of striking tip	30°±1°	30°±1°
Thickness of striking tip	37mm	37mm
Specimen dimension	(180±2) x (40±1) x (5~16) mm	Standard specimen:180x40x5~16mm Non-standard specimen:460x120x25, 550x160x32, 650x200x40mm
Weight	6500kg	10000kg
Dimension:	3700×2350×3800 mm	3800 x 2905 x 3880 mm
Power requirements	3-phase, 5-line, AC 380V±10% 50Hz 850W	3-phase, 5-line, AC 380V±10% 50Hz 5Kw

Standard accessories:

Name	Quantity
Main frame	1 set
Pendulum	1 set
Specimen feeding system	1 set
Pendulum lock/release system	1 set
Specimen support	1 set
Digital display	1 set
Specimen collection device	1 set
Protection shield	1 set
Control electronics (German Siemens S7-200)	1 set
Maintenance tools	1 set
Anchor bolt	1 set

Optional low temperature chamber

Model	CDW-80T-20
Temperature range	30 ~ -80℃
Temperature control accuracy	±0.5℃
Temperature uniformity	±1℃
Cooling speed	Cooling from ambient to -80℃, less than 120 minutes
Inside dimension	350×200×150 mm
DT Specimen size (L×W×H)	180×40×16mm
Specimen capacity	22 pieces (for DT specimen)
Cooling medium	Absolute ethyl alcohol (purity≥99.7%)
Timing	1~99 minutes, resolution 1 minute
Ethyl alcohol needed	Around 60 liter (prepared by user)
Working temperature	≤25℃
Outside dimension	750×650×840mm
Power supply	1-phase, 220V～240V, 50HZ
Rated power consumption	3.5kW
Weight	150kg