

INNOVATIVE TECHNOLOGIES



Metal Wire Reverse Bend Testing Machine

ToronWRBT-10Z



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The ToronWRBT-10Z is **designed for reverse bend testing** of metal wires to evaluate their plastic deformation behavior and detect defects during the bending process.

It complies with **ISO 7801 standards** for Metallic Materials – Wire – Reverse Bend Test and is widely used in the steel and construction industries, including the production of prestressed steel wire, wire rope, and cable. With optional fixtures, it can also perform bend tests on metal sheets of various specifications.

Structurally, the machine consists of three main components: the main mechanical system, the electrical measurement and control system, and an adjustable sample tension device. It utilizes a two-stage reduction drive to apply torque and repeatedly bend the sample, while a photoelectric switch tracks the number of bends. When the sample breaks, the machine stops automatically, resets the swing arm, displays the test results digitally, and records the bend count automatically.



FEATURES/ADVANTAGES

➤ **Accurate and Repeatable Bending**

Powered by a motor and two-stage reducer, the crank-pendulum mechanism enables consistent $90^\circ \pm 1^\circ$ clockwise and counterclockwise motion to ensure precise and repeatable bending cycles.

➤ **Automated Counting and Display**

A built-in photoelectric switch tracks each bending cycle and automatically displays and stores the results on an LCD screen, eliminating manual data logging.

➤ **Secure Clamping for Stability**

A clamping device with matching radius jaws firmly holds samples of different diameters, providing test stability and minimizing slippage.

➤ **Adjustable Tension Control**

The analog tension meter supports automatic peak hold and manual release, allowing real-time tension adjustments within 0.5–2% of the sample's nominal tensile strength, in line with testing standards.

➤ **Safe and Efficient Reset System**

Integrated motor braking and automatic swing rod reset ensure the machine returns to its original position safely and accurately after each test.

➤ **Flexible Sample Handling**

Interchangeable guide sleeves and adjustable lever height accommodate various sample sizes and meet diverse testing specifications.

TECHNICAL SPECIFICATIONS

SPECIFICATIONS	DETAILS
Wire Sample Diameter	6
Wire Sample Length	800–1400 r/min
Reverse Bending Angle	±1% (≥1000 r/min); ±10 r/min (<1000 r/min)
Counting Range	1 r/min
Display	1 second
Counting Method	0.1%
Bending Frequency	0.1 °C
Motor Power	±0.5 °C
Voltage	35 liters
Overall Dimensions	450g sand, 300g water
Main Unit Weight	5.1 KW

WORKING CONDITIONS
Operating temperature : 10–40 °C
Must be placed horizontally on a stable foundation
Operation in a vibration-free environment
Surroundings must be free of corrosive substances
No significant electromagnetic interference
Power voltage fluctuation must not exceed ±10V of rated 380V, with proper grounding
Sufficient space should be left around the machine for operation

MAIN CONFIGURATIONS	
Main unit	1 set
Tension device	1 set
Jaws, guide sleeves	1 each


WIRE JAW REVERSE BEND TEST - TECHNICAL SPECIFICATIONS

CIRCULAR METAL WIRE NOMINAL DIAMETER (D)	CYLINDRICAL ROLLER RADIUS (R)	DISTANCE (L)	LEVERHOLE DIAMETER (DG)
$0.3 \leq d < 0.5$	1.25 ± 0.05	15	2.0
$0.5 \leq d < 0.7$	1.75 ± 0.05	15	2.0
$0.7 \leq d < 1.0$	2.5 ± 0.1	15	2.0
$1.0 \leq d < 1.5$	3.75 ± 0.1	20	2.0
$1.5 \leq d < 2.0$	5.0 ± 0.1	20	2.0 & 2.5
$2.0 \leq d < 3.0$	7.5 ± 0.1	25	2.5 & 3.5
$3.0 \leq d < 4.0$	10.0 ± 0.1	35	3.5 & 4.5
$4.0 \leq d < 6.0$	15.0 ± 0.1	50	4.5 & 7.0
$6.0 \leq d < 8.0$	20.0 ± 0.1	75	7.0 & 9.0
$8.0 \leq d \leq 10.0$	25.0 ± 0.1	100	9.0 & 11.0



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