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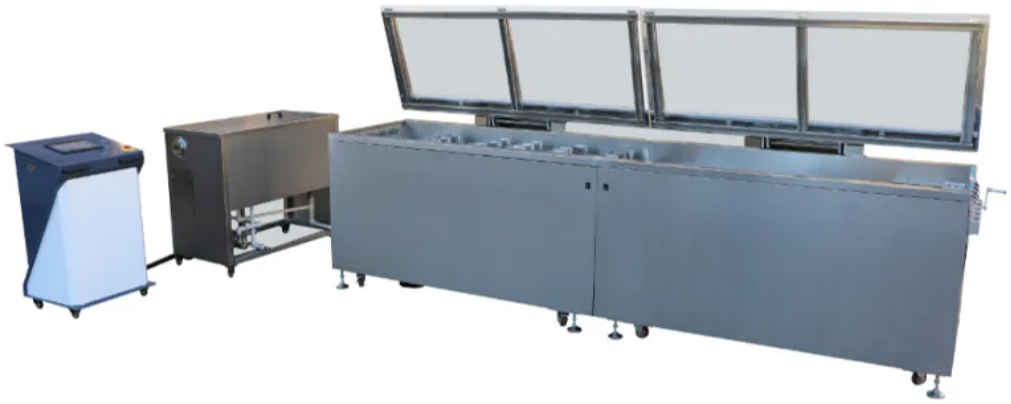

DRIP IRRIGATION EMITTER TESTING BENCH - TORONDRIPBENCH™

ISO 9260, ISO 9261

ToronDripBench™ is designed to perform a range of critical tests on drip irrigation emitters. These include hydrostatic pressure resistance at both ambient and elevated temperatures, flow uniformity, pressure-flow characteristics, burst testing, leak detection, and both pressure increase and decrease evaluations.

It is also suitable for burst and hydrostatic pressure testing of low-pressure PE soft tubing used in irrigation systems. The system features user-friendly operation with fully automated control throughout the testing process.

APPLICATIONS

Software instructions

- The system integrates a PLC programmable controller with a coordinating upper-level PC, enabling fast response times and precise data collection. It also supports remote maintenance and feature updates.
- Pressure is controlled using a high-precision pressure transmitter combined with a 12-bit PID adaptive regulation method, maintaining a pressure control gradient of less than 1 kPa.
- The software analyzes collected test data to calculate the average flow rate of emitters, the coefficient of variation, standard deviation, deviation from rated flow, flow coefficient, and flow state index. It also generates flow-pressure curves and automatically saves results to produce detailed test reports.
- The system includes real-time alerts, warnings, and safeguards for abnormal conditions.
- All test procedures can be initiated with one click. Upon completion, data is automatically calculated, a report is generated, and key curves—such as the process curve, real-time pressure curve, and flow-pressure relationship—are displayed and recorded. The km value is calculated and fitted automatically.
- Test reports can be printed directly or exported as PDF or Excel files.

FEATURES

Main Features

- The system uses weighing sensors and a Modbus-RTU digital communication module for highly accurate flow measurement with excellent resistance to interference.
- The test bench operates effectively without requiring specific water quality conditions.
- It supports testing of a wide range of drippers and drip irrigation pipes (tapes) with spacing options from 100mm to 500mm.
- The equipment offers two water circulation modes—loop and closed systems—which can be switched with a single click, making it easy for testing teams to compare and verify results.

TECHNICAL SPECIFICATIONS

Parameter	Specification
Test station number	5 stations (totally 25 drippers), each station measures 5 drippers & equipped with 5 high-precision wireless weighing modules
Weight measurement	0 - 2L ≤ 2000g), accuracy: ≤ 0.5% FS, resolution: 0.1g;
Timing accuracy	±0.1s
Applicable flow range of drip irrigation pipe (belt)	0.2 l/h ~ 7.50 l/h
Settable pressure	0 ~ 1000 kPa
Pressure resolution	1 kPa
Pressure fluctuation	±2% of displayed value

Parameter	Specification
Maximum working pressure of applicable drip irrigation pipe	≤500 kPa
Drip hole spacing range	100mm ~ 300mm (500mm available)
Drip irrigation pipe diameters	Φ12mm, Φ16mm, Φ18mm, Φ20mm, Φ25mm
Dimensions	2880 × 1290 × 1260 mm

Drip Irrigation Emitter Testing Bench

Drip Irrigation Emitter Testing Bench

High-temperature test chamber (optional part)

The high-temperature test chamber is designed to perform pressure resistance and other tests that require elevated temperatures. It provides a stable, controlled environment for testing and ensures safety during burst tests.

Parameter	Specification
High temperature chamber dimension	3300 × 602 × 1020 mm
Temperature Range	RT□ 70℃
Temperature Accuracy	±1°C
Heating Power	9 kW

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