TORONTECH

# BENCH SCALE

# Multi-Function Bench Scale (1g and 0.1g) - ToronAB™ BS Series

Multi-Function Bench Scale uses a 7-inch full-color HD touchscreen to present twenty configurable functions, covering capacities between 5 kg and 30 kg across three resolution tiers: 1g (10, 20, 30 kg), 0.1g (5, 10, 20, 30 kg), and 10 mg at 5 kg. Check weighing, density determination, counting, percentage, and summation functions serve production, logistics, and batching environments. AC/DC dual power and a built-in rechargeable battery extend operation to sites without a mains supply.

The 7-inch touchscreen provides single-tap access to weighing modes, calibration settings, language selection, and data output configuration without physical keypad navigation. RS232 and USB ports connect the scale to PCs, printers, thermal printers, label printers, and bar-code scanners, with data logging and storage directly from the touchscreen. Net/gross weight tracking and summation mode support batch recording across multiple weighing events. Date/time stamping and language settings extend utility for documentation workflows and multi-region deployment.

The 305 × 230 mm stainless steel pan handles oversized containers and batch samples, with the 395 × 320 × 120 mm housing fitting standard production bench clearances. A wide 5–35°C operating temperature range suits production floors, warehouse stations, and distribution centers where ambient temperature control is limited. Both external calibration and optional auto-timed internal calibration are available depending on the model. Corner error, sensitivity drift, repeatability, and linearity are all rated at ±3d, where d equals the displayed readability increment for each model.

## APPLICATIONS

# Multi-Function Bench Scale (1g and 0.1g) - ToronAB™ BS Series Applications

Major workshops

Production workshop

Warehouse Logistics

Ingredients site

The multi-function bench scale serves industrial, logistics, and production environments where check weighing, counting, density, and batch summation are required at capacities above standard laboratory analytical balances.

- **Food Manufacturing and Processing**: batch ingredient weighing, check weighing of filled packs against target and tolerance, and percentage function for recipe proportion control in production and batching environments
- **Warehousing and Logistics**: receiving inspection, outbound check weighing, and summation of multiple shipment items with direct output to label printers and thermal printers
- **Chemical and Industrial Production**: weighing bulk chemical inputs, monitoring batch fills to check-weighing tolerance, and density determination of liquid and solid materials
- **Electronics Manufacturing and Assembly**: counting mode for component verification, check weighing of assembled products against compliance weight, and batch summation across production runs
- **Laboratory and Research**: density determination of solid and liquid samples, percentage weighing for formulation work, and high-resolution mass measurement on the 0.1g and 0.01g models
- **Pharmaceutical Bulk Production**: ingredient check weighing and tablet count verification at 0.1g or 0.01g readability on the higher-precision configurations
- **Batching Sites and Blending Operations**: summation mode tracks cumulative weight across multiple additions to a batch, with data logging and print output for batch record documentation
- **Agriculture and Commodities**: bulk material weighing, lot verification, and net/gross weight tracking for shipment documentation at capacities up to 30 kg

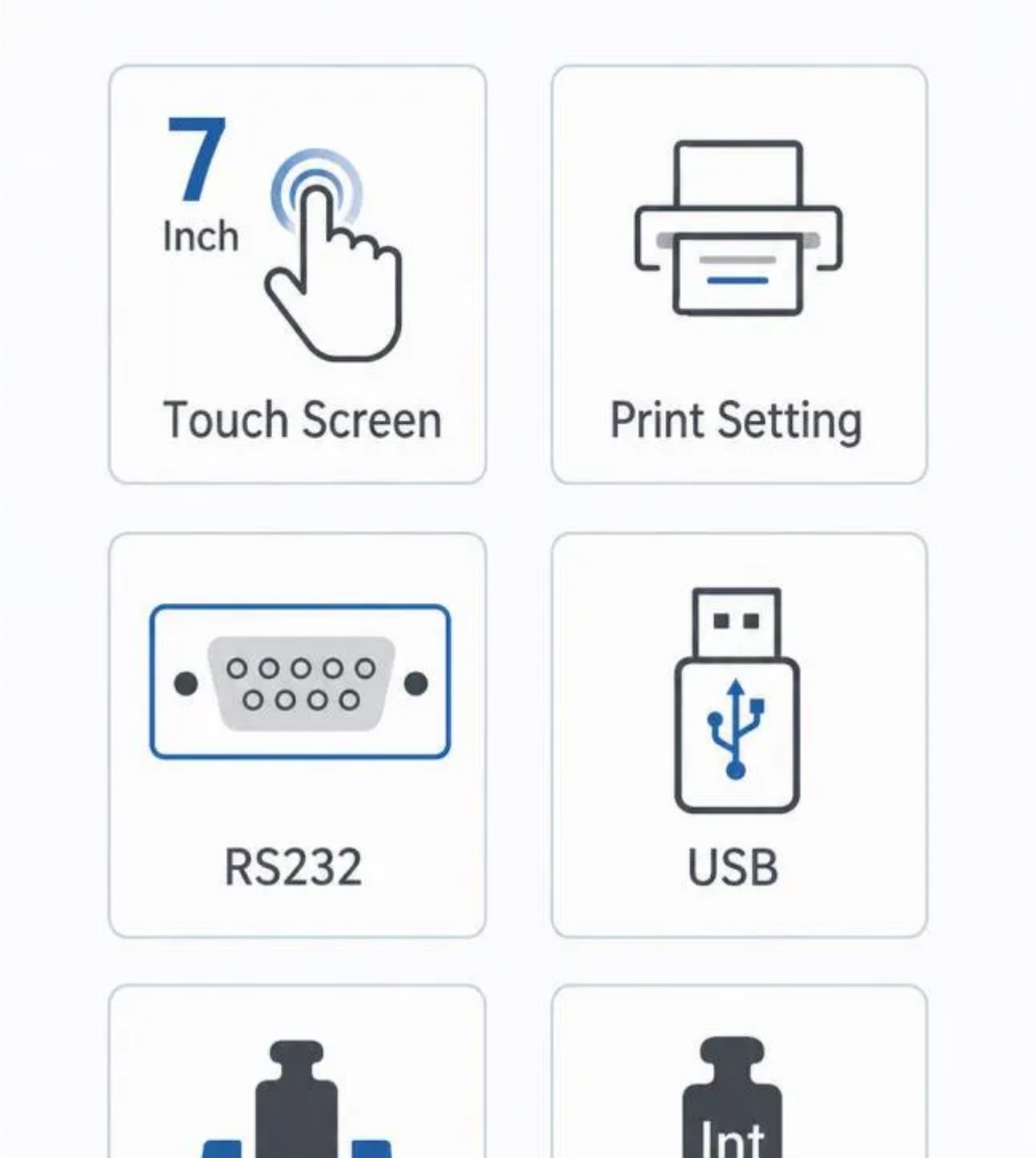
TORONTECH
TorneAB™ BS Series
Multi-Function Bench Scale

## FEATURES

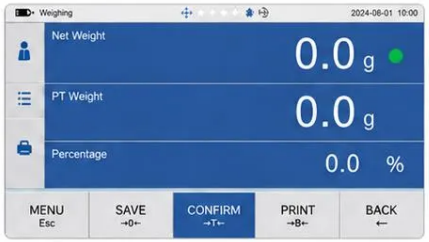
# Multi-Function Bench Scale (1g and 0.1g) - ToronAB™ BS Series Key Features

The multi-function bench scale packs twenty functional settings into a 7-inch touchscreen platform, covering weighing, check weighing, counting, density, and summation for industrial and laboratory use.

- **7-Inch Full-Color HD Touchscreen**: icon-driven interface provides single-tap access to all twenty functional settings, weighing modes, and calibration options without physical keypad sequences
- **Check Weighing Function**: compares each reading against a preset target and upper/lower tolerance, displaying a pass, under, or over verdict for rapid production sorting and compliance checking
- **Density Determination**: Archimedes-principle density mode calculates solid density from in-air and in-liquid mass readings; under-hook weighing supports liquid density measurement using a sinker of known volume
- **Under-Hook Weighing**: rear under-hook port suspends samples below the platform for density determination and for measuring objects that cannot rest on the pan
- **Counting Function**: piece-count mode calculates quantity based on a stored reference piece weight, supporting component counting, lot verification, and receiving inspection
- **Percentage Test Function**: compares each reading against a stored reference to display a percentage value, supporting fill-level control and formula proportion verification
- **Summation Function**: accumulates and records the total weight across multiple weighing events, supporting batch documentation and multi-component blending
- **Net/Gross Weight Mode**: separates net and gross weight readings for shipment documentation and container tare management

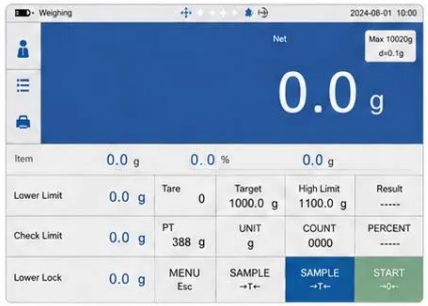

7
Inch
Touch Screen
Print Setting
RS232
USB
Int

- **Auto Timed Internal Calibration (Selected Models)**: built-in calibration weight deploys automatically when the scale detects temperature drift, available as an option on selected 10 kg models
- **External Calibration**: all models support external calibration using a user-supplied reference weight to maintain traceability at user-defined intervals
- **Calibration Point Setting**: the operator sets calibration reference points through the touchscreen to optimize accuracy for the operating load range




## Percentage Function

Easy Access to Formulation Data




## Check Weighing

For finished product check-weighing

## Data information

Data Logging & Storage

| No. | Date | Time | Net Weight (g) | PT Weight (g) | Percentage (%) | Tare (g) | User Name |
|---|---|---|---|---|---|---|---|
| 1 | 2024-08-01 | 09:15:23 | 1000.0 | 1000.0 | 100.00% | 0.0 | USER01 |
| 2 | | 09:16:10 | 995.2 | 1000.0 | 99.52% | 0.0 | USER01 |
| 3 | | 09:16:55 | 1010.3 | 1000.0 | 101.03% | 0.0 | USER01 |
| 4 | | 09:17:32 | 998.7 | 1000.0 | 99.87% | 0.0 | USER01 |
| 5 | | 09:18:08 | 1001.1 | 1000.0 | 100.11% | 0.0 | USER01 |
| ... | | ... | ... | ... | ... | ... | ... |

All (Data) All (Formula) SPC (All) All (Counting) All (Cycle)

## Density Kit

Test density of Solid & Liquid (Optional: Capacity ≤10kg)

- **Capacity and Resolution Setting**: capacity and displayed resolution are adjustable through the touchscreen to match the weighing task without hardware changes
- **AC/DC Dual Power with Rechargeable Battery**: Input: 100–240 V, 50/60 Hz; built-in 6V/4AH rechargeable battery supports operation at sites without a mains connection
- **RS232 and USB Connectivity**: dual interface supports simultaneous connection to PCs, printers, thermal printers, label printers, and bar-code scanners for data logging and label output
- **Large Stainless Steel Square Pan (305 × 230 mm)**: oversized platform accommodates large containers, bulk samples, and industrial packaging that exceed standard round pan dimensions
- **Unit Conversion (g / ct / oz)**: reading switches between grams, carats, and ounces through the touchscreen without hardware adjustment
- **Date/Time Setting**: onboard clock stamps each result with date and time for documentation, audit trail, and batch record requirements
- **Language Setting**: multi-language display support enables deployment across different regional operating environments
- **Stability Setting and Speed Setting**: adjustable response characteristics balance readout speed against settling stability for the sample type and environment
- **Overload Alarm**: visual and audible alert for tare or sample load approaching the capacity limit, protecting the load cell from overload damage

## THEORY & METHOD

# Theory and Method

Multi-function bench scales convert applied force to a digital reading through a load-sensing cell mounted beneath the platform. The platform transmits sample weight to the cell; bonded strain gauges change electrical resistance in proportion to the cell's deflection, and a bridge circuit converts this to a proportional voltage. The processor digitizes, linearizes, and

displays the signal at the selected readability increment within two seconds. Temperature compensation corrects for ambient thermal effects across the 5–35°C operating range.

Check weighing mode compares each reading against a user-defined target and tolerance window, generating a pass, under, or over verdict. The processor displays this verdict alongside the mass reading, letting the operator sort or reject items without manual comparison. Density determination applies Archimedes' principle: the scale weighs the sample in air, then again suspended below the pan in a liquid of known density, and calculates solid density automatically. Under-hook weighing supports both solid and liquid density determination with the optional density kit.

## TECHNICAL SPECIFICATIONS

# Multi-Function Bench Scale (1g and 0.1g) - ToronAB™ BS Series Technical Specifications

### Series A: 1g Readability

| Parameter | ToronAB™ BS10A | ToronAB™ BS20A | ToronAB™ BS30A |
|---|---|---|---|
| Capacity | 10 kg | 20 kg | 30 kg |
| Readability | 1 g | 1 g | 1 g |
| Min Weight | 20 g | 20 g | 20 g |
| Calibration | Internal (Optional) | External | External |

### Series B: 0.1g Readability

| Parameter | ToronAB™ BS5B | ToronAB™ BS10B | ToronAB™ BS20B | ToronAB™ BS30B |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Capacity | 5 kg | 10 kg | 20 kg | 30 kg |
| Readability | 0.1 g | 0.1 g | 0.1 g | 0.1 g |
| Min Weight | 5 g | 5 g | 5 g | 5 g |
| Calibration | External | Internal (Optional) | External | External |

## Series C: 0.01g Readability

| Parameter | ToronAB™ BS5C |
|---|---|
| Capacity | 5 kg |
| Readability | 0.01 g (10 mg) |
| Min Weight | 0.5 g |
| Calibration | External |

## Common Specifications

| Parameter | Specification |
|---|---|
| Repeatability | ±3d |
| Linearity | ±3d |
| Corner Error | ±3d |
| Sensitivity Drift | ±3d |
| Stabilization Time | ≤2 s |
| Working Temperature | 5–35°C (Series C: 15–30°C) |

| Parameter | Specification |
|---|---|
| Display | 7-inch HD touch screen |
| Weighing Modes | Counting / Check Weighing / Percentage / Density |
| Interface | RS232, USB |
| Voltage | Input: 100–240 V, 50/60 Hz; Output: 9 V/3A |
| Battery | 6V/4AH rechargeable |
| Pan Size | 305 × 230 mm |
| Product Dimensions (W × D × H) | 395 × 320 × 120 mm |
| Package Dimensions | 460 × 365 × 210 mm |
| Gross Weight | 6 kg |

*d = the balance's displayed readability increment.*

*±3d repeatability on a 1g model = ±3g; on a 0.1g model = ±0.3g; on a 0.01g model = ±0.03g.*

TORONTECH.com

TORONTECH


**Torontech Inc.**
251 Consumers Road, Suite 1200
Toronto, Ontario, M2J 4R3, Canada

Phone: +1 416 368 2721 | Fax: +1 416 981 7652
Email: info@torontech.com

**Torontech, LLC**
601 Brickell Key Drive, Suite 700
Miami, FL 33131, USA

Toll-Free: 1-866-383-7919
Email: sales@torontech.com

**Torontech ME FZE**
Meydan Grandstand, 6th Floor,
Meydan Road, Nad Al Sheba,
Dubai-261440, UAE

Phone: +971 488 19252
Email: me@torontech.com


USA | Canada | EU | UAE | GCC | KSA | India | Africa | Latin America | Asia