



OHAUS Asia-Pacific Dealer Meeting  
March 23 - 25, 2010  
Hua Hin, Thailand

Bench Scales



# Bench Scales



## SD

- 35 to 200 kg
- 1,650-2,200d
- Weigh
- lb, kg
- All painted steel / rect. pan



## ES

- 6 to 200 kg
- 2,000-3,000d
- Weigh
- lb, oz, lb:oz, kg
- Painted steel frame / rect. stainless steel pan



## Defender 2000 Rectangular Plastic

- 30 to 300kg
- 6,000-7,500d
- Weigh, Count
- kg, g
- Painted Tubular Steel Frame
- 430 Stainless steel pan



## Defender 3000 Rectangular Plastic/SST

- 30 to 300kg
- 6,000-7,500d
- Weigh, Count
- lb, oz, lb:oz, kg, g
- Painted Tubular Steel Frame
- Removable rect. stainless steel pan



## Defender 5000/7000 Rectangular Plastic/SST

- 30 to 300kg
- 6,000-7,500d
- Weigh, Count, Check, % Weigh, Dynamic, Display Hold
- lb, oz, lb:oz, kg, g, t, custom units
- Painted form/weld steel frame
- Removable rect. stainless steel pan



## Defender 5000/7000 Square Plastic/SST

- 25 to 250kg
- 10,000-12,500d
- Weigh, Count, Checkweigh, % Weigh, Dynamic Weigh, Display Hold
- lb, oz, lb:oz, kg, g, t, custom units
- Painted form/weld steel frame
- Removable sqr. stainless steel pan

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# Indicators



**T21P**

- Entry Weighing



**T23P**

- Entry Weighing



**T32Mx**

- Basic Weighing



**T31P/XW**

- Basic Weighing



**T51P/XW**

- Standard Weighing



**T71P/XW**

- Advanced Weighing



**CKW**

- Application Specific Weighing

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## Shipping Scale

SD

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## SD Shipping Scale

- It's Durable
- It's Portable
- It's an OHAUS!



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SD

# Unique Selling Points



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SD

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## UNIQUE SELLING PROPOSITIONS

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1: Construction:  
Rugged and durable

- Indicator is formed from impact resistant ABS plastic with extra ribs
- Lightweight with easy to transport handles
- Bases with embossed and non-embossed platforms ensure extra rigidity and durability, passed in-house 100,000 cycle load-unload test
- Coiled load cell cable passed in-house 5,000 cycle bending test

2: Mounting:  
Simple yet flexible

- Molded-in key-holes and included table/wall mount brackets offer multiple mounting positions for easy use

3: Portability

- Over 360-hour battery operation ensures at least 15-days continuous usage
  - Carry handle on carton (non-L models) provides mobility for the user to transport or use the scale in multiple locations
- 

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SD

# Product Features



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SD

**Feature:** ABS plastic housing

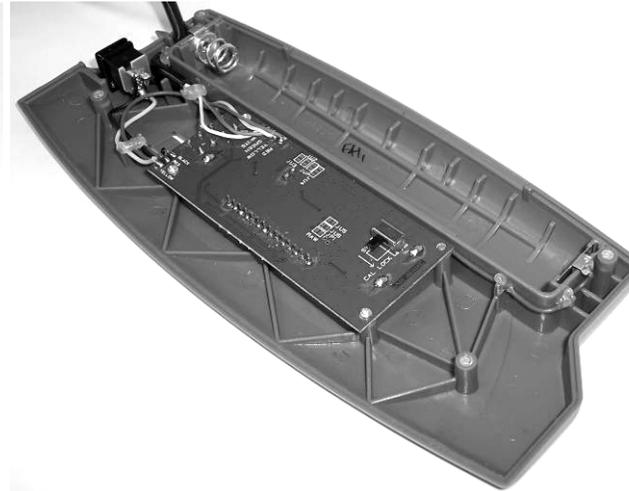
**Benefits:** Long-term durability for a high-quality purchase

Durable material withstands abuse, resists impact damage

**Feature:** Extra structural ribs in housing

**Benefits:** Minimizes flexing of the housing

Gives the user a feel of a well-built solid product



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SD

**Feature:** Key-holes for mounting to the wall or table directly or with the mounting brackets

**Benefits:** A simple yet flexible mounting solution  
Multiple viewing positions for comfortable and easy use



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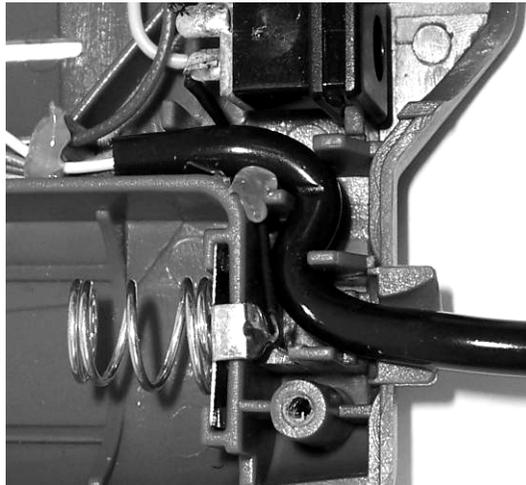


SD

**Feature:** S-curve load cell cable connection

**Benefits:** Allows the cable to pull and flex without failing from the indicator, even without extra strain relief plugs

**Tested:** Load cell cable passed in-house 5,000 cycle flex test  
Ensures long-term repeated usage



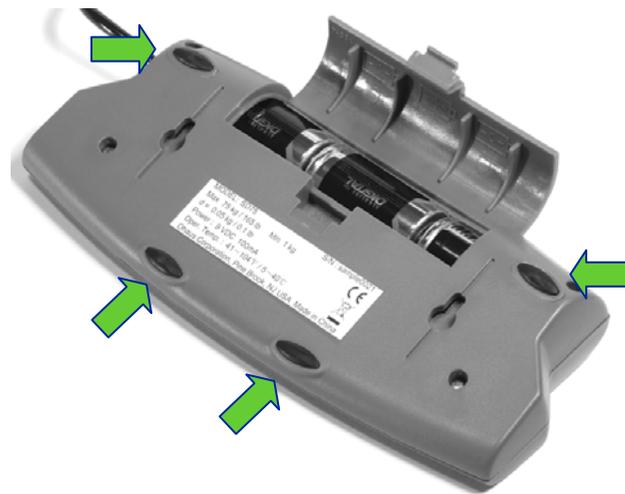
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SD

**Feature:** Strategically placed rubber feet

**Benefits:** Reduced skid and improved grip on flat surfaces  
Ensures stability and minimizes slipping during hard usage



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SD

**Feature:** AC or 3 “C” battery operation (at least 360 hour operation)

**Benefits:** Continuous usage ~ 15 days, 24-7, on one set of batteries



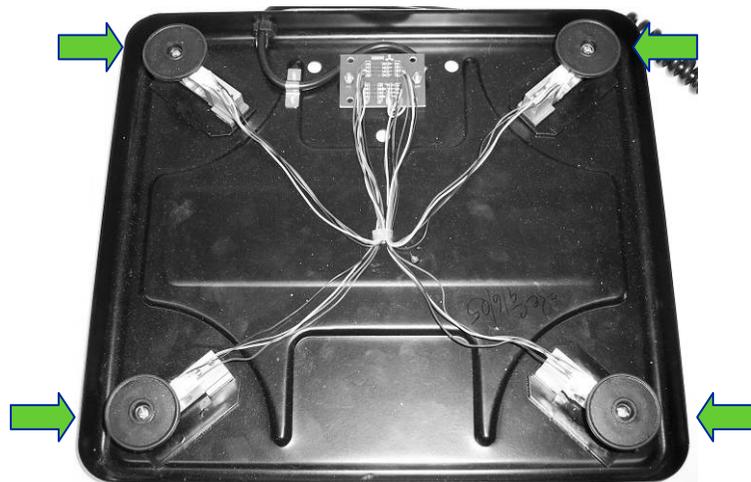
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SD

**Feature:** Base with 4-load cell design

**Benefits:** Evenly distributes the load over the platform  
More consistent weight results



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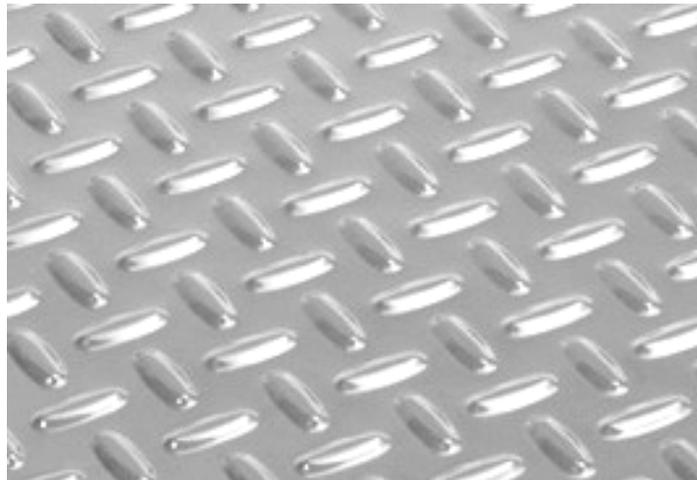


SD

**Feature:** Raised cross-hatch embossed treads, similar to floor scales (non-L models)

**Benefits:** Packages on the weighing platform stay in place, increased durability and structural integrity of the platform

**Tested:** Passed in-house 100,000 cycle full load-unload test  
Ensures *at least* 2 years usage at over 135 load-unload times/day



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SD

**Feature:** Carry-handle on carton (non-L models)

**Benefits:** Mobility -- safe and handy transport



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SD

**Feature:** Large platform models

**Benefits:** Expand usage and applications (large package shipping and receiving, etc.)



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SD



## Software Features

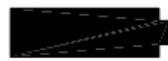
- Simple 2-button operation: [ON/ZERO Off], [UNITS Cal]
- Raised tactile mechanical keys
- Kilogram and pound units
- Dynamic weighing mode
- Auto-shut off after 4 minutes of inactivity (battery operation)
- Calibration lock via internal switch

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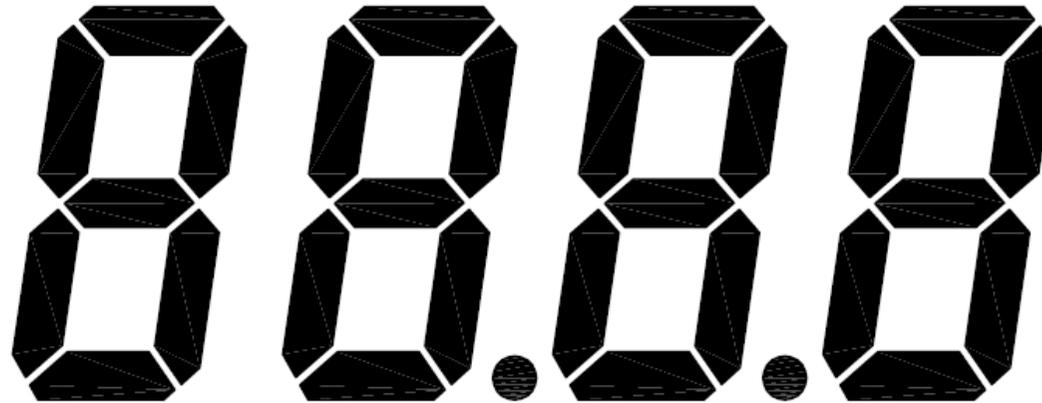


SD

Low battery indicator



Stability indicator



4 digit - 7 segment display

lb  
kg

Units indicators

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SD

## Keys

On/Zero  
Off

**ON/ZERO/Off key** - Short press turns the scale on (when off)  
Short press zeros the display  
Long press turns the scale off

Units  
Cal

**UNITS/Cal key** - Short press changes the weighing unit  
Long press initiates calibration process.



Shipping Scale

# Catapult 1000

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# Catapult

- It's Efficient
- It's Portable
- It's an OHAUS!



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Catapult

## Unique Selling Points



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# Catapult

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## UNIQUE SELLING PROPOSITIONS

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### 1: Convenient design

- Lightweight with easy to transport handles
  - Battery or AC power
  - Built in carry handles
- 

### 2: Solid performance

- Strong ribbed walls and weigh platform
  - 4 load cells each with their own overload system
  - 2x resolution of competition (up to 2,000d)
- 

### 3: Friendly operations

- Over 360-hour battery operation ensures at least 15-days continuous usage
  - Dynamic weigh standard
  - Auto shutoff to conserve battery
- 

## FEATURES

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## Catapult 1000 - Std Features



### Standard Features

- All plastic housing and pan (with SS pan option)
- Built in grip handles on left and right sides
- Weighing units: kg, lb
- Dynamic weighing mode
- Two raised tactile mechanical buttons
- Powered by AC power adapter (standard) or 3 C-size alkaline batteries (user supplied)
- 7-segment numeric 14mm high LCD
- Stability indication, Auto zero tracking
- Power saving auto shut off
- Subtractive Tare up to capacity
- Digital external calibration



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## Catapult 1000 - Models/Applications



<b>Applications</b>	<b>9kg</b>	<b>20kg</b>	<b>75kg</b>
<b>Shipping</b> <b>Receiving</b> <b>Animal weighing</b> <b>General purpose</b>	<b>9kg x 5g</b>	<b>20kg x 10g</b>	<b>75kg x 50g</b>

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## Catapult 1000 - Application Use

- **Shipping** – Home office, home store/ ebay weighing without the need to mount a remote display or worry about tangling wires. Scale has capability to hold weight reading for over sized packages.
- **Receiving** – Quick checking for incoming packages. Light and portable with carry handles for use anywhere it is needed. Extremely long battery life 350 continuous hours of use, with auto shutoff.
- **Animal Weighing** – (mobile and in office) Perfect for weighing small to moderate animals such as reptiles, birds, cats and others with dynamic weighing mode.



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## Catapult 1000 - Keypad

### Units of measure

Kilograms (kg)

Pound (lb)

Dynamic (kg)

Dynamic (lb)



Unit/Cal – Short press scrolls through active units and modes (kg, kg dynamic)  
Cal - Long Press activates cal procedure.

0/T – Short press turns scale on when off, Sets display to zero.  
Off - Long press turns scale off when on.



## Catapult 1000 - Specifications

Model	<b>C11P9</b>	<b>C11P20</b>	<b>C11P75</b>
Capacity x Readability	9 kg x 0.005 kg 20 lb x 0.01 lb	20 kg x 0.01 kg 44 lb x 0.02 lb	75 kg x 0.05 kg 165 lb x 0.1 lb
Weighing Units	kg, lb		
Modes	Simple Weighing, Dynamic Weighing		
Keypad	2-button mechanical keys		
Calibration Weights	9 kg / 20 lb	20 kg / 40 lb	50 kg / 100 lb
Display	4-digit 7-segment, 20mm / 0.8 in characters		
Display Indicators	Stability, weighing unit, dynamic weighing, battery status		
Tare range	To capacity by subtraction		
Stabilization Time	≤ 3 seconds		
Maximum Overload	150%		
Operating temperature/humidity range	5° to 40°C / 41° to 104°F at 10% to 80% relative humidity, non-condensing		
Power Requirements	9 VDC 100mA AC Adapter (supplied) 3 "C" Alkaline or rechargeable batteries (LR14) optional		
Auto Shut-Off	4 minutes no activity (battery operation only)		
Typical Battery life	300 hours		
Scale Dimensions (mm / in)	316 x 316 x 60/ 12.4 x 12.4 x 2.36		



## Catapult 1000 - Positioning

OHAUS Positioning	Catapult 1000	SD Series	ES Series
Product Illustration			
Capacity x Readability	9kg x 0.005kg 20kg x 0.01kg 75kg x 0.05kg	35kg x 0.02kg 75kg x 0.05kg 200kg x 0.1kg	6kg x 0.002kg 30kg x 0.01kg 50kg x 0.02kg 100kg x 0.05kg 200kg x 0.1kg
Units	kg, lb	kg, lb	kg, lb, oz, lb:oz
Display	LCD	LCD	LCD
Keys	2 mechanical	2 mechanical	2 membrane
Modes	Weigh; Dynamic weigh	Weigh; Dynamic weigh	Weigh
Construction	Plastic housing (SST Pan Option)	Painted steel pan, Plastic housing	SST pan, Plastic housing
Pan Size	316 x 280 mm	316 x 280 mm / 520 x 400 mm	310 x 270 mm / 520 x 400 mm
Power	AC (3 x "C" cells)	AC (3 x "C" cells)	AC (3 x "C" cells)
RS232	None	None	None
Max Resolution	1,500 – 2,000d	1,750 – 2,200d	2,000 – 3,000d

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## Defender Series

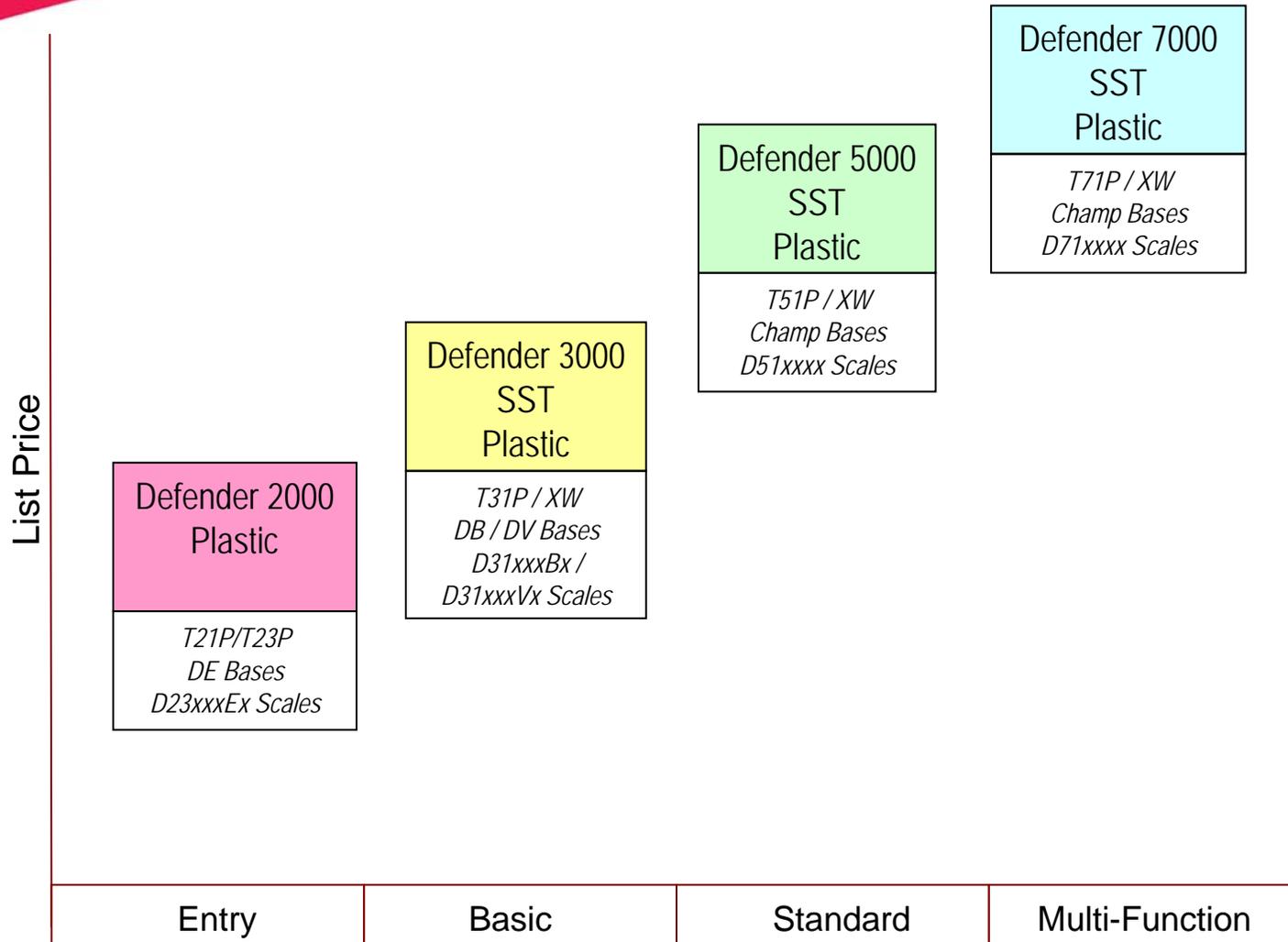


- Indicators
- Bases
- Bench Scales
- Four Levels!

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# Defender Series - Overview



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Defender Series

# Defender 2000

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## Defender 2000 – T21P



### T21P Features

- ABS plastic housing with column adapter
- 1:30,000 maximum displayed resolution / 1:60,000 displayed counting resolution
- Counting, Weight Accumulation, Checkweighing
- 20mm high, 6-digit red LED display / 3-LED checkweigh indication with configurable alarm
- kg or lb weighing units
- 6 function mechanical keys, raised, tactile, with key-press print function
- Drives 4 x 350 ohm load cells
- Stabilization time within 2 seconds
- RS232 interface
- AC adapter with included sealed lead acid battery (30-hour typical operation on full charge)

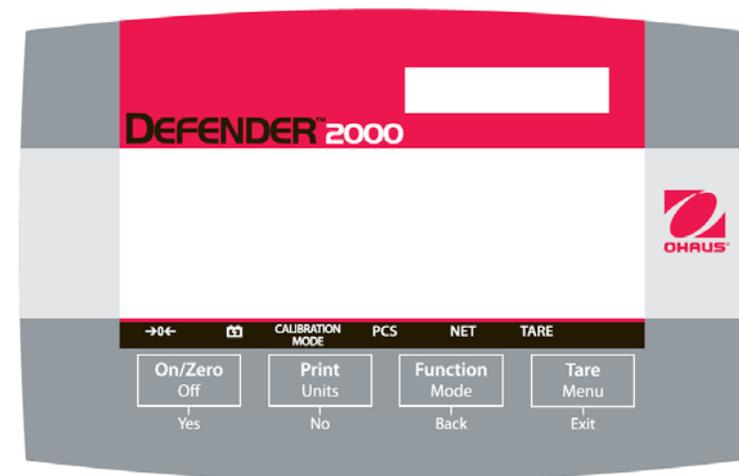


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Defender 2000

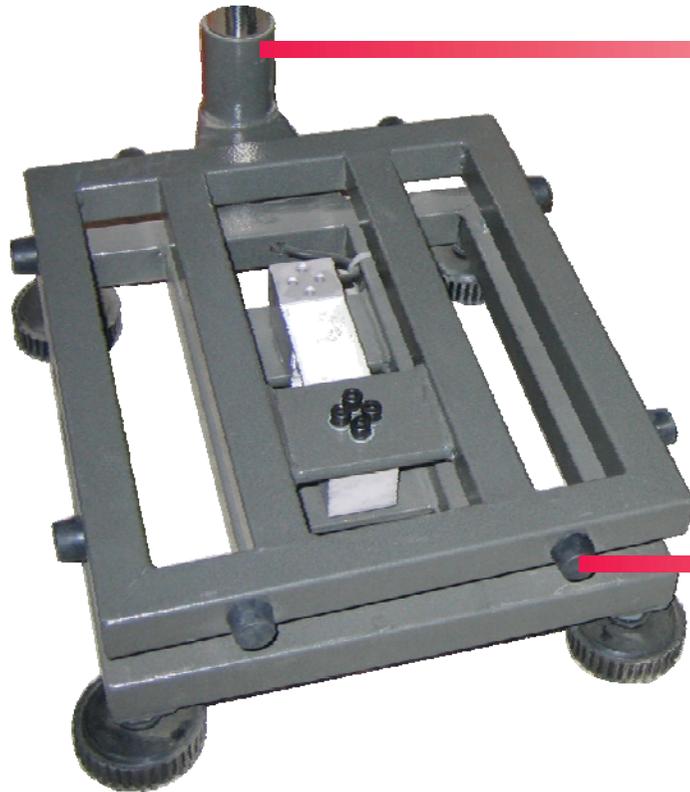
## Compete with Low Cost Chinese Imports and Local Manufacturers with Aggressively Priced Quality Platform and Indicator Package



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## Defender 2000



**Feature:** Integrated mounting for column and external level indicator

**Benefits:** Frame-welded mount provides a sturdy mounting point for the included stainless steel column

Minimizes rocking of column and indicator when in use

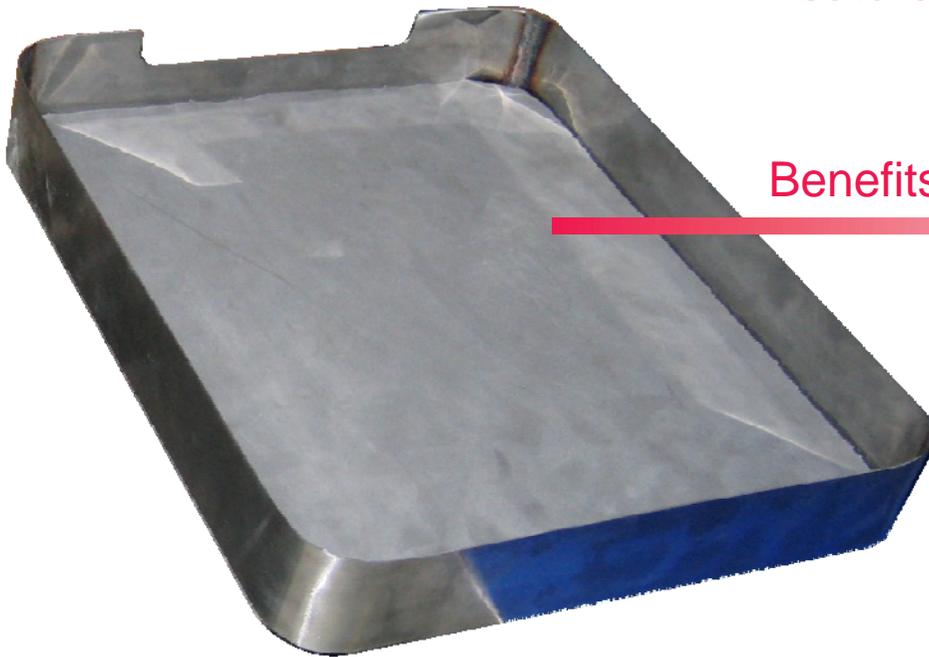
**Feature:** 8 corner load rubber mounts

**Benefits:** Good shock protection

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## Defender 2000



**Feature:** High-density foam, form-fitted and adhered to bottom of pan

**Benefits:** Provides top-load shock protection

Competing products have loose-fitting and removable foam pads; easily lost and provide inaccurate results

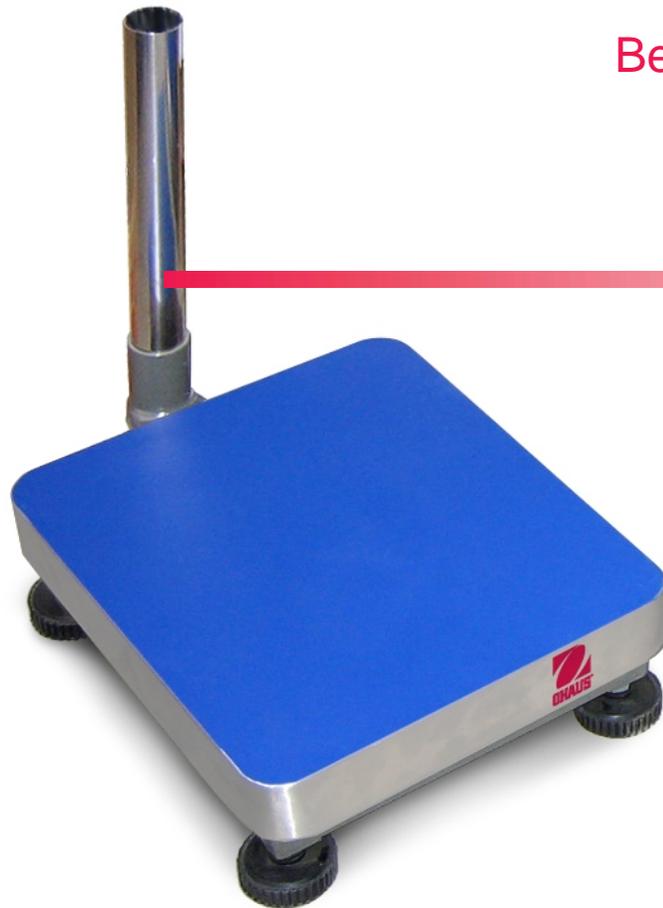
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## Defender 2000

**Feature:** Standard diameter stainless steel column is included with the base unit

**Benefits:** Column diameter is standard and fits most indicator mounting collars (3<sup>rd</sup> party as well as all Ohaus indicator mounting collars: T31, T51, CD, CW)



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## Defender 2000

Feature: Zemic branded load cells with OIML approval, anodized aluminum alloy, IP65

OIML/EC: PTB D09-03.21



Benefits: Recognized and type approved high-quality load cell

OIML/EC: PTB D09-03.22

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# Defender 2000

Base Models:	D30ER	D60ER	D150EL	D150EX	DB300EX
Capacity (max) x Readability (d) – 1:3000	30 kg x 10 g	60 kg x 20 g	150 kg x 50 g	150 kg x 50 g	300 kg x 100 g
Maximum Resolution	1:3000	1:3000	1:3000	1:3000	1:3000
Pan Dimensions	300 x 350 x 50 mm		400 x 500 x 50 mm	500 x 600 x 100 mm	
Base Dimensions	300 x 465 x 123 mm		400 x 615 x 123 mm	500 x 715 x 123 mm	
Column Dimensions	450 mm x 38 mm O.D.		650 mm x 38 mm O.D.		
Base Construction	430 stainless steel pan and column, painted carbon steel tubular frame with integrated column mount				
Leveling Components	Externally visible level bubble and adjustable non-slip rubber leveling feet				
Operating Temperature	-10°C to +40 °C / -31° F to 149° F				
Safe Overload Capacity	150% (FS)				
Net Weight	9kg		13kg	24kg	
Shipping Weight	10kg		14kg	25kg	
Shipping Dimensions	450W x 350D x 170H mm		650W x 450D x 170H mm	700W x 550D x 210H mm	
Load Cell Protection / Class	IP65, Anodized Aluminum Alloy, Single point, OIML R60 C3				
Load Cell Capacity	50kg	100kg	300kg	300kg	500kg
Load Cell Cable wiring	4-wire shielded cable, 5mm ø, 2m Length			6-wire shielded cable, 6mm ø, 3m Length	
Load Cell Rated Output	2 mV/V ± 2%			2 mV/V ± 1%	
Load Cell Resistance	Input 406 ± 6 (Ω) / Output 350 ± 3 (Ω)			Input 409 ± 6 or 1065 ± 15 (Ω) / Output 350 ± 3 or 1000 ± 5 (Ω)	



Defender Series

# Defender 3000

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## Defender Series

### NEW! Defender 3000 Series Indicators (sold as stand alone indicators only)



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## Defender Series

- T32M (metal-dry) models were developed as part of a range of sub-low cost indicators (slotting between 2000-3000 level) with basic level operations
- Technology based on 3000 Series + maximized software with “no-cost” extra functionality (esp. in view of low-end multi-featured competition)
- Expand indicator portfolio
- Incorporates new corporate overlay design



## Defender Series

- Primary target markets
  - *Emerging markets*
  - *Traditional lower-cost markets*
  - *Mature markets*
  
- Primary Applications
  - *Floor/Deck/Platform/Pallet scale indicator*
  - *Hopper/Vessel indicator*
  - *Livestock scale indicator*
  - *Locally built Bench Scales*



## Defender Series



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## Defender Series



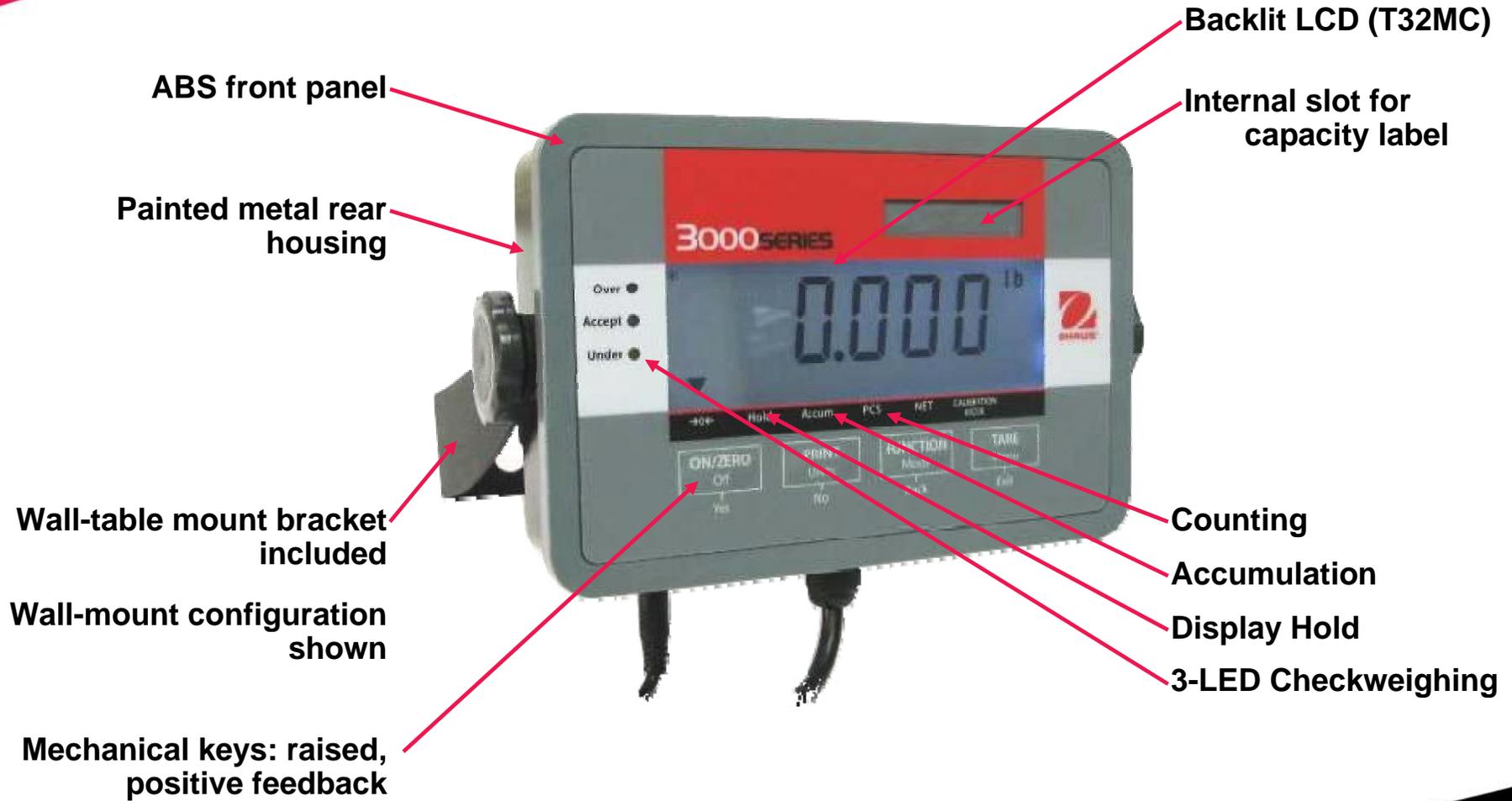
### T32M Series Indicators:

- ABS front panel w/ painted carbon steel rear housing and mounting bracket
- T32MC (Backlit LCD) / T32ME (LED)
- 3-LED Over-Accept-Under
- 20,000d / 6,000e OIML
- AC adapter / No battery
- lb, kg, oz, g, lb:oz
- Counting
- Simple checkweighing
- Display Hold
- Weight Accumulation
- RS232 bi-directional
- 4 x 350Ω load cell

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# Defender Series



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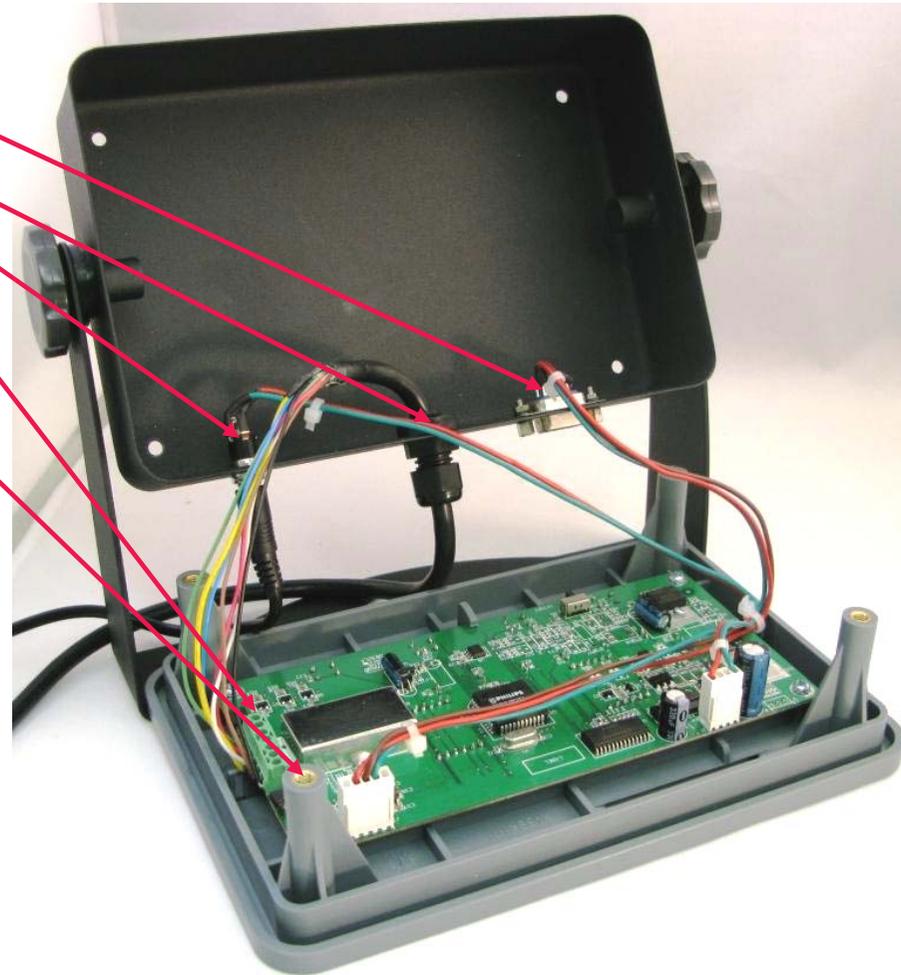
# Defender Series

- RS232 connection
- LC connection pass-through
- AC power connection
- LC connection to PCB

Metal inserts



Rear view



Internal view

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# Defender Series

## Specifications:

Models:	T32MC	T32ME
Construction	ABS plastic front panel with painted carbon steel rear housing; includes painted carbon steel table-wall mount bracket with adjustment knobs	
Weight Display	6-digit, 7-segment LCD 1"/25mm digit height, with high-contrast white LED backlight	6-digit, 7-segment red LED 0.8"/20mm digit height
Full Scale Capacity Range	5 to 20,000 lb or kg	
Maximum Displayed Resolution	1:20,000d	
OIML Approvable Resolution	1:6000e	
Minimum Average Piece Weight	1d	
Weighing Units	kg, lb, g, oz, lb-oz	
Extra Functions/Modes	Parts Counting, Display Hold, Checkweighing, Weight Accumulation	
Checkweigh Display	3-color red-green-yellow Over-Accept-Under LED's	
Keyboard	4 function mechanical switches, raised tactile keys	
Load Cell Excitation / Input Sensitivity	5V DC / up to 3 mV/V (min 1 $\mu$ V/d)	
Load Cell Drive	Up to four 350 $\Omega$ load cells	
Stabilization Time	Within 2 seconds	
Auto-zero Tracking	Off, 0.5, 1 or 3 divisions	
Zeroing Range	2% or 100% of capacity	
Span Calibration	5 lb/kg to 100% of capacity	
Interface	RS232 only	
Operating Temperature Range	14°F to 104°F / -10°C to 40°C	
Power	9-12 VDC, 0.5A, AC adapter	
Enclosure Dimensions	7.8"W x 1.8"D x 5.2"H / 198W x 46D x 132H mm	
Net Weight	1.5 lb / 0.7 kg	
Shipping Dimensions	10.7"W x 9.2"D x 7.2"H / 271W x 234D x 182H mm	
Shipping Weight	4.0 lb / 1.8 kg	

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# Defender Series



	T31P / T31XW	T32ME / T32MC
Performance:	1:20,000d 1:6,000e OIML Drives 4 x 350ohm load cell	1:20,000d 1:6,000e OIML Drives 4 x 350ohm load cell
Construction:	ABS / SST IP66 Backlit LCD 1"H	ABS front, painted metal rear & bracket Backlit LCD 1"H / Red LED 0.8"H
Functionality:	lb, kg, g, oz, lb-oz Counting	lb, kg, oz, g, lb-oz Counting Checkweighing (3-LED) Display Hold Weight Accumulation (Totalization)
Power/Comms:	AC adapter / Lead acid battery (P) RS232 bi-directional	AC adapter / No battery RS232 bi-directional

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# Defender Series



	T51P / T51XW	T32ME / T32MC
Performance:	1:30,000d + Dual Range 1:6,000e OIML Drives 8 x 350ohm load cell	1:20,000d 1:6,000e OIML Drives 4 x 350ohm load cell
Construction:	ABS reversible / SST IP66 Backlit LCD 1"H	ABS front, painted metal rear & bracket Backlit LCD 1"H / Red LED 0.8"H
Functionality:	lb, kg, g, oz, lb-oz, custom Counting Checkweighing Dynamic Percent GMP	lb, kg, oz, g, lb-oz Counting Checkweighing (3-LED) Display Hold Weight Accumulation (Totalization)
Power/Comms:	Univ. line cord / 100-240V RS232 bi-directional External input Options: RS422/485, Relays, NiMH battery	AC adapter / No battery RS232 bi-directional

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Defender Series

# Product Positioning

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# Defender Series

	T3000	T5000	T7000
SST – Wet			
Plastic - Dry			
Metal - Dry			

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## Defender Series



### ■ Enhanced Functionality:

- *Feature-rich, yet simple to use and easy to learn*
- *Menu navigation text on keys; no menu short-codes to learn*

### ■ Quality Construction:

- *Designed for durability*
- *Textured-surface paint minimizes scratches*

### ■ Quality Assured:

- *Ohaus quality standards even at low-cost level*
- *Assured performance and safety conformance as claimed: EMC, CE, UL*

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## Defender 3000 - Bench Scales

**Compliment D2000 With Higher Quality Platform and Indicator Package, Offering Lower Cost Alternative to D5000**



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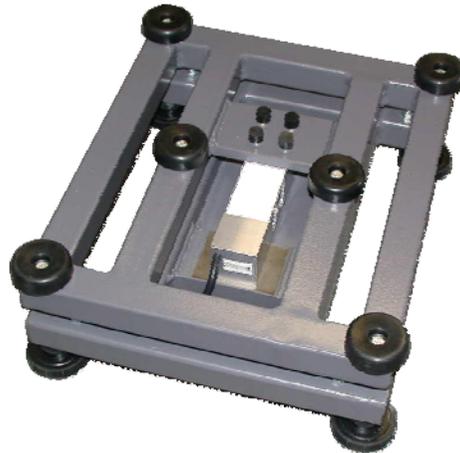
## Defender 3000

**Feature:** Angled **tubular frame design**

**Benefits:** Efficient design with minimal compromise on durability, rigidity

**Feature:** 5 or 6-point overload stops for **125%** safe overload protection

**Benefits:** Protects load cells from damage



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## Defender 3000

Feature: Reversible front-rear housing

Benefits: Convenient placement of indicator: cables can exit from the top for locating in front of the base, or from the bottom when mounted on the wall or on scale columns



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## Defender 3000

**Feature:** Extra structural ribs in plastic housing

**Benefits:** Minimized flex and rattling; feels like a well-built product

**Feature:** Metal screw inserts in strategic fastening points

**Benefits:** Prevents plastic mounts from breaking

**Feature:** Ratchet-type angle adjustment with metal inserts

**Benefits:** Ensures adjustment mechanism does not wear out with frequent adjustments; indicator viewing angle can be locked into position easily



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## Defender 3000

**Feature:** Integrated key-hole mounts on the back cover

**Benefits:** No need for bracket; mount directly to the wall or table  
(mounting bracket accessory also available)

**Feature:** 4 non-slip rubber feet on the back cover

**Benefits:** Reduced skid and improved grip on flat surfaces; can't be pushed off a table easily



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## Defender 3000

**Feature:** Raised, tactile keys

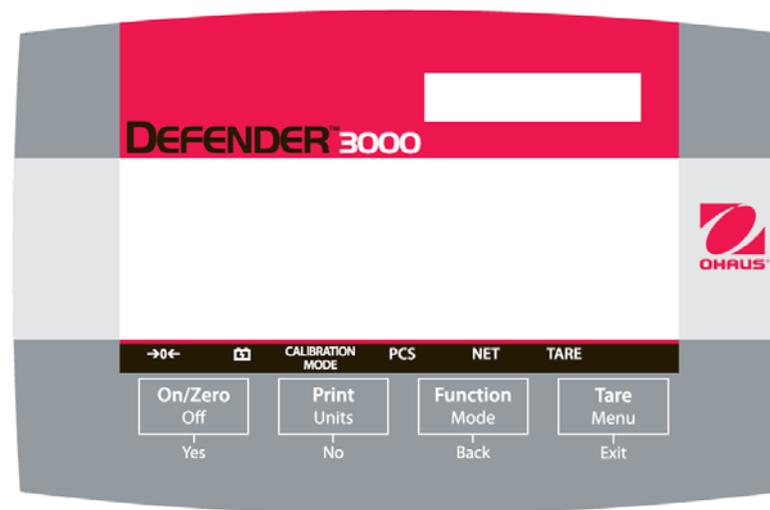
**Benefits:** Provides positive feedback when pressed

**Feature:** Bright white LED backlight, large 25mm/1" high LCD digits

**Benefits:** Weight display easily read from a wide range of angles and lighting

**Feature:** Chemical-resistant coated clear plastic window

**Benefits:** Helps protect the LCD from damage



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## Defender 3000 – T32XW

**Feature:** Hinged front cover

**Benefits:** Service-friendly and keeps front and rear cover together

**Feature:** Universal switching power supply 100-240 VAC / 50-60Hz

**Benefits:** Indicator adapts efficiently and automatically to different power line voltages and frequencies

**Feature:** Internal rechargeable battery

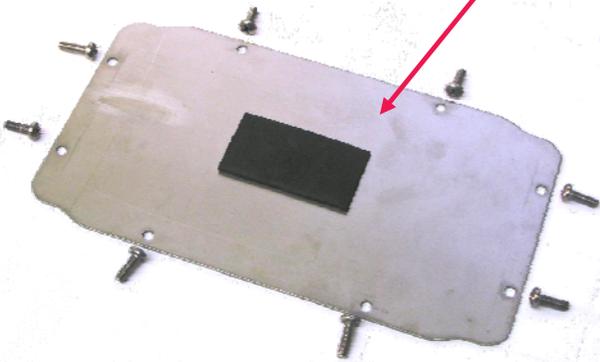
**Benefits:** Ultimate portability, useful for applications where power access is limited



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## Defender 3000 – T32XW

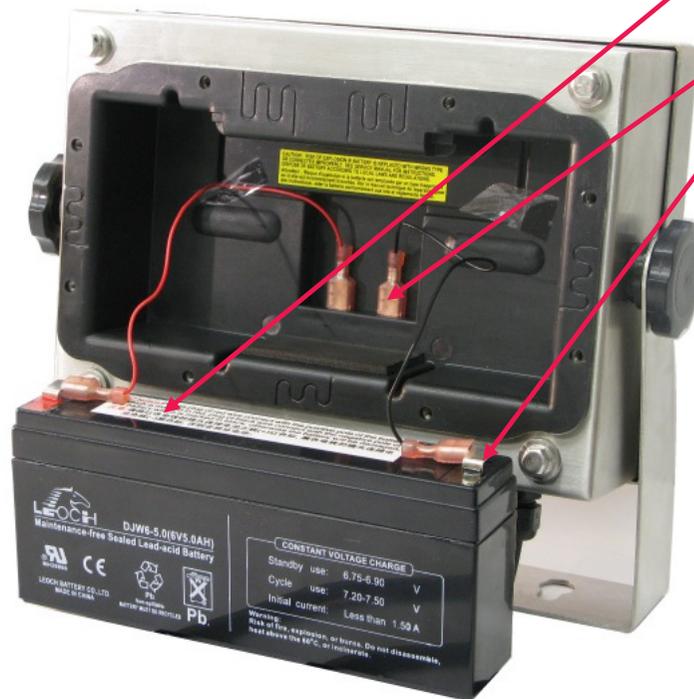


- Plastic battery housing
- Multiple molded-in grooves allow free flow of air and liquids from the compartment
- SST battery cover plate – easily removed for ease of cleaning
- Excluding the battery housing, the rest of the enclosure is IP66

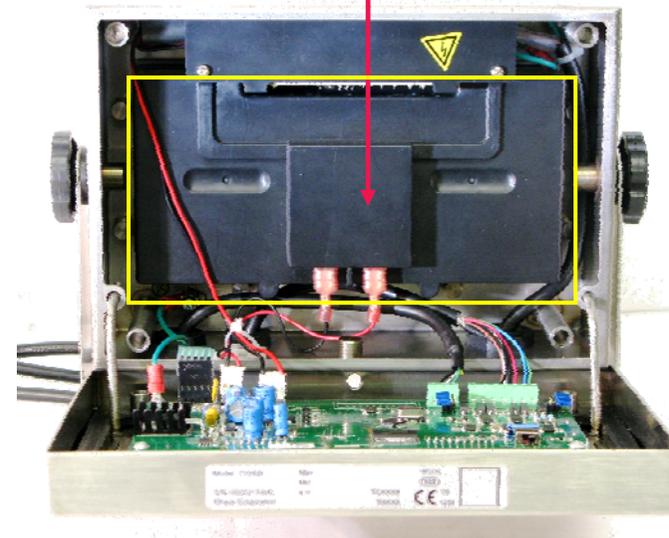
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Practical*



## Defender 3000 – T32XW



- Battery is water-proof
- Connectors are rust-proof
- Internally, battery compartment is sealed (no water entry into main housing)



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## Defender 3000 – T32XW

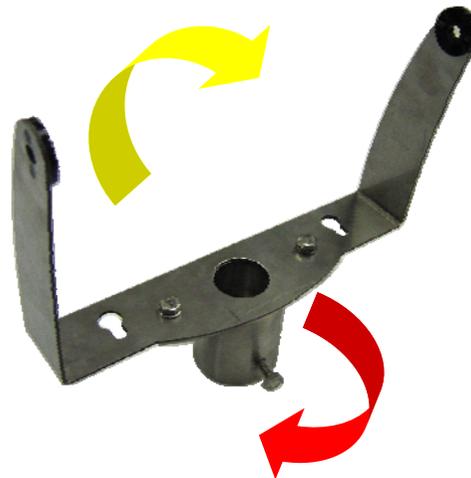
First digit	Enclosure Protection against:	
6	Dust tight	
Second digit	Protection against:	Requirements:
5	Water jet	Water which is directed as a jet against the housing from each direction may not have any damaging effects.
6	Strong water jet	Water which is directed as a strong jet against the housing from each direction may not have any damaging effects.
6K	Strong water jet with heavy pressure	Water which is directed as a strong jet and with heavy pressure against the housing from each direction may not have any damaging effects.
7	Temporary immersion	Water may not enter in a quantity which causes damaging effects when the housing is temporarily immersed under water under stipulated pressure and time conditions.



## Defender 3000

**Feature:** U-bracket with key-hole mounts and removable from collar

**Benefits:** Allows the indicator to swivel forward-backward and left-right to maximize viewing angles



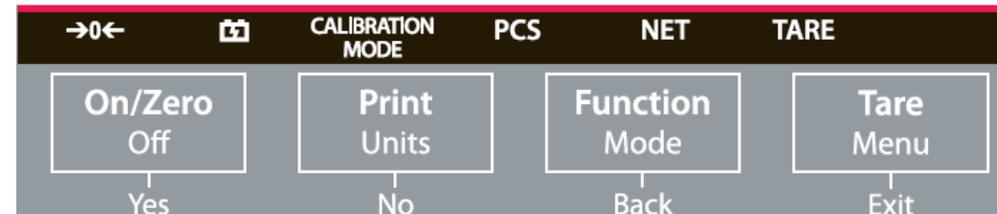
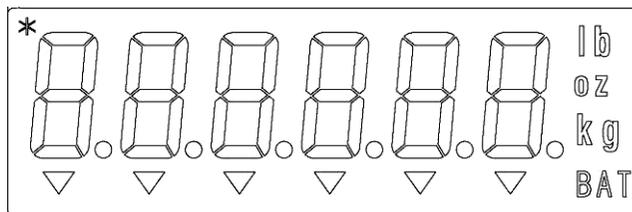
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# Defender 3000

## Software Features

- Simple 4-button operation with navigation keys, raised tactile keys
- kg, g weighing units (2)
- Auto-shut off after 1, 2 or 5 minutes of inactivity (user selectable)
- Change capacity without having to recalibrate
- Supervisor control – lock settings via software and/or internal switch
- Geo adjustment
- RS232, manual-continuous-interval printing
- Piece Counting:
  - *Min APW = 1d*
  - *Temporary display of APW data*
  - *Selectable sample sizes: 5, 10, 20, 50, 100, 200 (last sample size saved)*





# Defender 3000

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## UNIQUE SELLING PROPOSITIONS

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1: Construction:  
Rugged & Durable

- T31P indicator - impact resistant ABS plastic with extra **ribs**
- T32XW indicator - 304 stainless steel and sealed to **IP65**
- Base frame achieves a lower cost with an efficient **angled-tube design**, but with no compromise on durability

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2: Mounting:  
Simple yet flexible

- T31P indicator features **reversible front-rear housing**
- T31P has **molded-in key-holes** on the rear cover for wall-table mounting without the need for extra brackets
- T32XW indicator already includes a stainless steel **wall-table mount bracket** that offers multiple viewing angles
- Bases are **compatible** with existing Ohaus Champ columns

---

3: Portability

- Included internal rechargeable **lead acid battery**
  - T32XW has a 100-240 VAC **universal power supply** that can be operated from most power sources
- 

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# Defender 3000

Models:	D31P30BR	D31P60BR	D31P60BL	D31P150BL	D31P150BX	D31P300BX
Capacity (max) x Enhanced Readability (d)	30kg x 0.005kg 30000g x 5g	60kg x 0.01kg 60000g x 10g		150kg x 0.02kg 150000g x 20g		300kg x 0.05kg 300000g x 50g
Resolution (Max / APVL)	6000d / 3000e	6000d / 3000e		7500d / 3000e		6000d / 3000e
Platform Dimensions	305W x 355D x 123minH mm		420W x 550D x 136minH mm		500W x 650D	
Load Cell Model-Capacity	MT-50kg	MT-100kg	MT-100kg	MT-300kg	MT-300kg	MT-500kg
Load Cell Protection	Aluminum IP67, OIML C3					
Base Construction	304 stainless Steel pan with painted carbon steel frame, non-slip rubber leveling feet					
Column	350 mm fixed height, painted		700 mm fixed height, painted steel			
Safe Overload Capacity	125% of rated capacity					
Indicator / Cap x Resxn	T31P – ABS Plastic / 5 to 20000 kg / 20000d / 6000e					
Weighing Units	kg, g, lb					
Extra Features	Parts Counting, Geo adjustment					
Weight Display	6-digit, 7-segment LCD, 20 mm High digits, LED backlight					
Keyboard	4 function mechanical keys, raised, tactile, with navigation text					
Stabilization Time	Within 2 Seconds					
Span Calibration	5 kg to 100% of Capacity, user selectable					
Power	AC adapter with internal rechargeable lead acid battery					
Interface	Built-in RS232					

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# Defender 3000

Models:	D32XW30VR	D32XW60VR	D32XW60VL	D32XW150VL	D32XW150VX	D32XW300VX
Capacity (max) x Enhanced Readability (d)	30kg x 0.005kg 30000g x 5g	60kg x 0.01kg 60000g x 10g		150kg x 0.02kg 150000g x 20g		300kg x 0.05kg 300000g x 50g
Resolution (Max / APVL)	6000d / 3000e	6000d / 3000e		7500d / 3000e		6000d / 3000e
Platform Dimensions	305W x 355D x 123minH mm		420W x 550D x 136minH mm		500W x 650D	
Load Cell Model-Capacity	SSP1241-50kg	SSP1241-100kg	SSP1241-100kg	SSP1260-300kg	SSP1260-300kg	SSP1260-500kg
Load Cell Protection	SST IP67, OIML C3					
Base Construction	304 stainless Steel pan and frame, non-slip rubber leveling feet					
Column	350 mm fixed height, SST			700 mm fixed height, SST		
Leveling Component	Externally Visible Level Bubble and Adjustable Leveling Feet with locking nuts					
Safe Overload Capacity	125% of rated capacity					
Indicator / Cap x Resxn	T32XW – SST / 5 to 20000 kg / 20000d / 6000e					
Weighing Units	kg, g					
Extra Features	Parts Counting, Geo adjustment					
Weight Display	6-digit, 7-segment LCD, 20 mm High digits, LED backlight					
Keyboard	4 function mechanical keys, raised, tactile, with navigation text					
Stabilization Time	Within 3 Seconds					
Span Calibration	5 kg to 100% of Capacity, user selectable					
Power	100-240 VAC universal power supply with internal rechargeable lead acid battery					
Interface	Built-in RS232					

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Defender Series

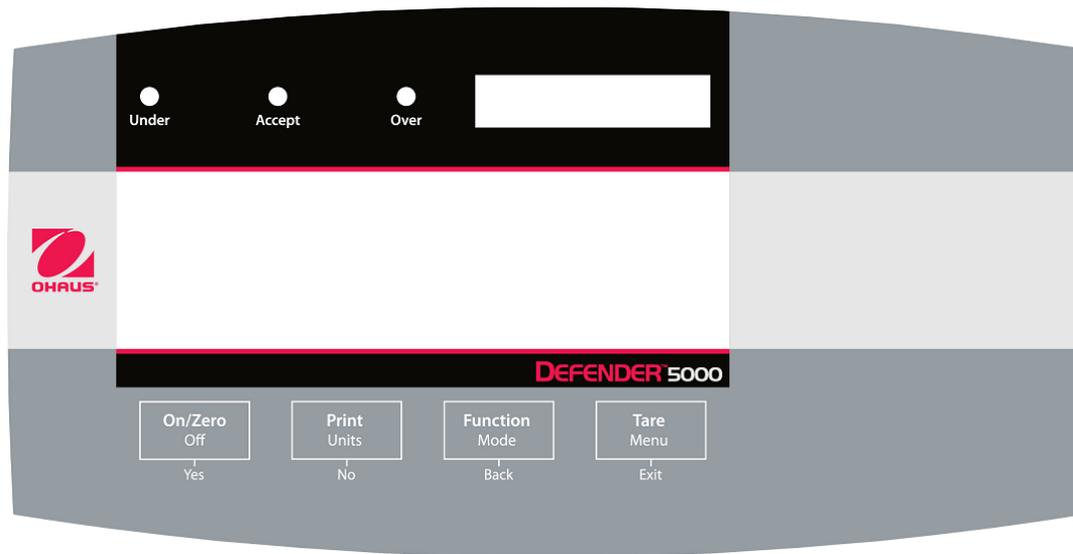
# Defender 5000

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# Defender 5000

**Replace Champ with Much Higher Specified Product  
at Same Price Level**



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## Defender 5000

**Feature:** Formed-and-welded plate frame design of R and L platform sizes

**Benefits:** Maximized durability, rigidity and structural integrity

**Feature:** 5 or 6-point **overload stops**

**Benefits:** Ensures safe overload protection up to **150%** of scale capacity  
Protects load cells from damage and reduces service calls



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## Defender 5000

**Feature:** Short and tall columns (painted and stainless steel versions) with compatible base mounting to current bases (Defender 3000, Defender/Champs)

**Benefits:** Mix-n-match; flexible mounting possibilities



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## Defender 5000

**Feature:** Reversible front-rear housing

**Benefits:** Convenient placement of indicator: cables can exit from the top for locating in front of the base, or from the bottom when mounted on the wall or on scale columns

**Feature:** Included wall/table bracket and opt. scale mount bracket

**Benefits:** Flexible mounting possibilities for maximized viewing



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## Defender 5000

**Feature:** Extra structural ribs in plastic housing

**Benefits:** Minimized flex and rattling; characteristics of a well-built product

**Feature:** Metal screw inserts in strategic fastening points

**Benefits:** Prevents plastic mounts from breaking if screws installed tightly



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## Defender 5000

**Feature:** Ratchet-type angle adjustment with metal inserts

**Benefits:** Ensures adjustment mechanism does not wear out with frequent adjustments; indicator viewing angle can be locked into position easily

**Feature:** Extra thick adjustment knobs

**Benefits:** Ergonomic; easily adjust the indicator viewing angle



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## Defender 5000

**Feature:** T51P with AC line cord instead of AC adapter

**Benefits:** Obtainable universal cord and no need for grounded power outlet

**Feature:** Universal switching power supply 100-240 VAC / 50-60Hz

**Benefits:** Indicator adapts automatically to different power line voltages and frequencies; plug anywhere, anytime



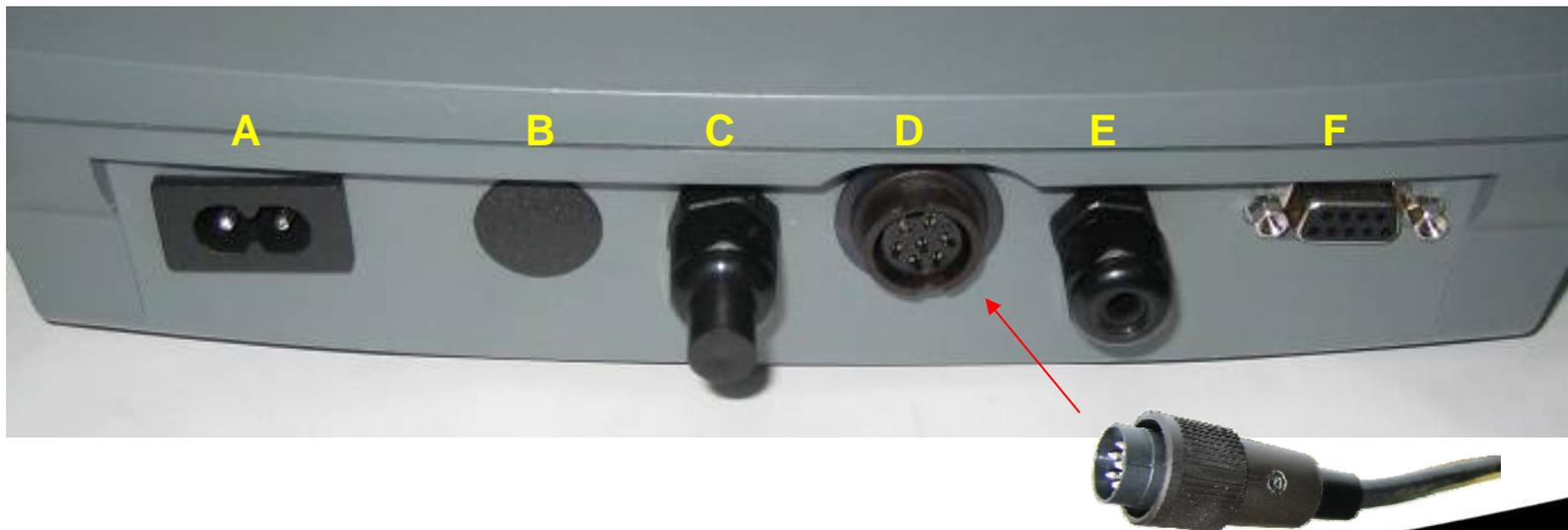
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## Defender 5000

### Feature: T51P multiple connectivity:

- A – Power line cord
- B – Relay AC/DC connection (option)
- C – Load cell connection (direct to terminal block)
- D – Load cell connection (through connector – scale models)
- E – 2<sup>nd</sup> RS232 / RS422/485 / Foot switch connection (options)
- F – RS232 (built-in)



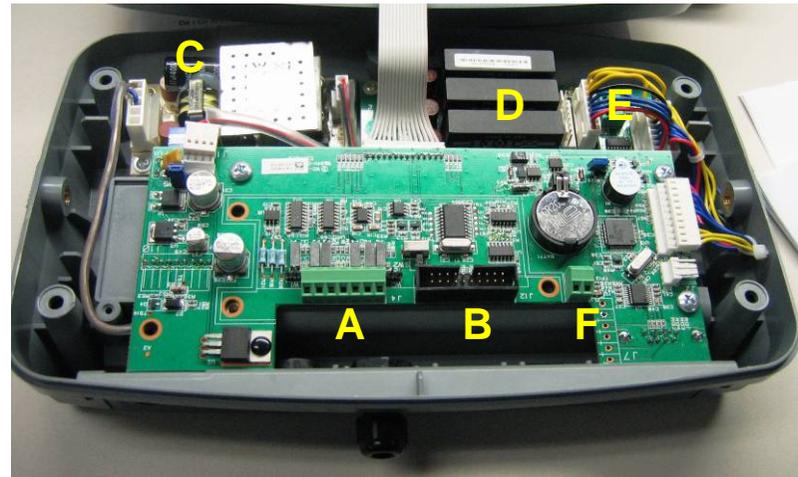
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## Defender 5000

Feature: T51P multiple connectivity:

- A – Load cell terminal block
- B – Load cell connection (through connector)
- C – Universal power supply
- D – Relay (option)
- E – RS422/485 (option)
- F – Foot switch (option) connection





## Defender 5000

**Feature:** T51P with 6-C alkaline (80-hour operation)

**Optional NiMH rechargeable battery** (30-hour operation, 12-hour full charge time)

**Plug-and-play** NiMH battery and PCB kit

**Benefits:** Simple **plug-and-play installation** of battery option kit; no need to disassemble the housing



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## Defender 5000

**Feature:** Bright white LED backlight, large 25mm high LCD digits

**Benefits:** Weight display easily read from a wide range of angles and lighting

**Feature:** 3-color (Y-G-R) LED for checkweighing (under-accept-over), alarm

**Benefits:** Helps for quick determination of checkweighing results



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## Defender 5000

**Feature:** Raised, tactile keys, key-press beeper

**Benefits:** Provides positive feedback when pressed

**Feature:** Chemical-resistant coated clear plastic window

**Benefits:** Helps protect the LCD from damage



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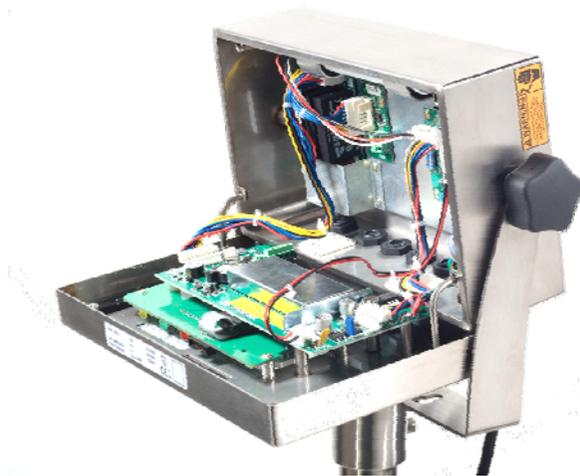
## Defender 5000

**Feature:** T51XW with hinged front cover, mounting locations for options

**Benefits:** Service-friendly and keeps front and rear cover together

**Feature:** Internal slot for capacity label

**Benefits:** Protects label from effects of moisture



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## Defender 5000

**Feature:** Only 4 sealing screws to secure the housing

**Benefits:** Service-friendly, shortens time to dis/assemble the indicator  
Long sealing screws completely compresses the front housing onto the internal silicone rubber seal, ensures IP66

**Feature:** Stainless steel 304 NEMA 4X / IP66 enclosure

**Benefits:** IP66: dust-tight and protected against powerful water jets from any direction / NEMA 4X: indoor/outdoor protection against falling dirt, rain, sleet, snow, windblown dust, splashing and hose-directed water, corrosion



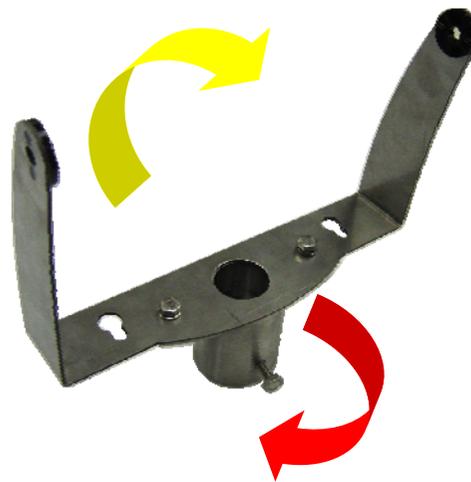
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## Defender 5000

**Feature:** U-bracket with key-hole mounts and removable from collar (painted and stainless steel versions)

**Benefits:** Collar allows the indicator to swivel forward-backward and left-right to maximize viewing angles  
Key-holes allow for fixed table mounting



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## Defender 5000

**Feature:** Drives up to 8 x 350 ohm load cells

**Benefits:** Expands to larger capacity applications such as truck scales



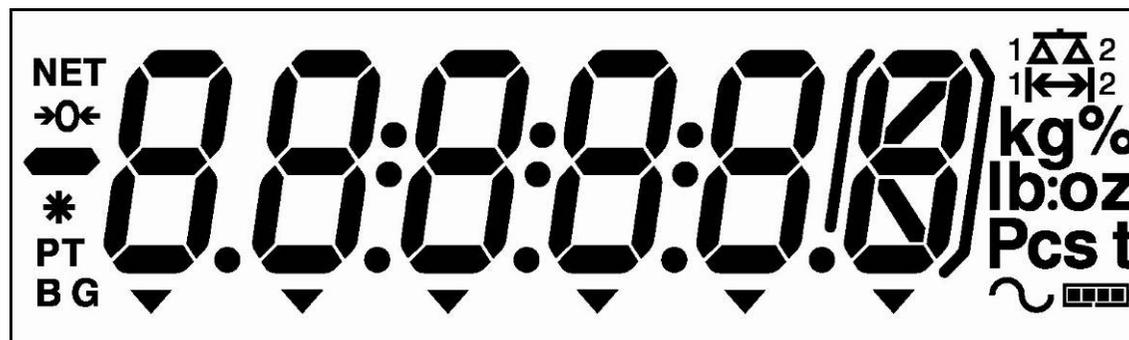
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## Defender 5000

**Feature:** High-contrast backlit LCD display “information center”

- ✓ Net, Brutto/Gross indication
- ✓ Tare / Pre-set Tare (via PC command) indication
- ✓ Center of zero / Stability indication
- ✓ Negative value sign
- ✓ Dual range indication
- ✓ Units: kg, g, metric tonnes, %, pcs, custom (c)
- ✓ Dynamic mode indication
- ✓ Battery charge indication



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# Defender 5000

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## UNIQUE SELLING PROPOSITIONS

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1: Construction:  
Durability, flexibility  
and serviceability

- T51P indicator - impact resistant ABS plastic with extra **ribs** and **reversible** front-rear cover
- T51XW indicator - 304 stainless steel sealed to **NEMA4X/IP66** with **hinged** front cover
- Bases with stainless steel pans and form-and-weld frames maximize structural **rigidity**

---

2: Smart Functionality:  
Simple to use and  
easy to learn

- Indicators feature most **popular** functions, such as: Counting, Checkweighing, Dynamic-Hold, Percent, Dual range, GMP-time-date, custom unit, Auto-tare
- Only 4-button operation with navigation text, backlit LCD and 3-color LED

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3: Portability

- T51P universal line cord, 6C or opt. rechargeable NiMH **battery**
  - 100-240 VAC **universal power supply** that can be operated from most power sources
- 

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Defender Series

# Defender 7000

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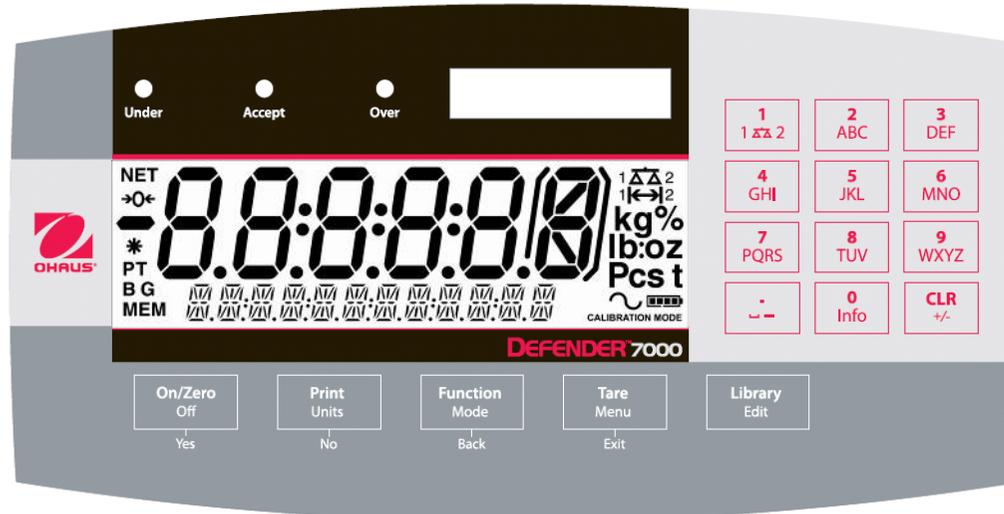
## Defender 7000 “Extras”

**Feature:** Alpha numeric keyboard

**Benefits:** Allows easy input of data to enhance advanced applications

**Feature:** Two line backlit LCD

**Benefits:** Displays key data to keep operator informed of process



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## Defender 7000 “Extras”

**Feature:** Flash memory storage (option)

**Benefits:** Allows storage of large amounts of weighing data which can be easily retrieved

**Feature:** Two scale operation (standard)

**Benefits:** Allows two platforms to be connected to one indicator



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## Defender Series – R Base



- 5 platform sizes, 6 capacities = total 11 models:

- 6kg, 15kg                      S: 240 x 300 mm
- 30kg, 60kg                    R: 300 x 400 mm
- 60kg, 150kg                  L: 400 x 500 mm
- 60kg, 150kg, 300kg        X: 500 x 650 mm
- 150kg, 300kg                V: 600 x 800 mm



- 1:3000e approved readability (dual range with T71)
  - 1:30000d non-approved readability (+/- 2d)

- Rounded corner 304 stainless steel pan, painted steel load frame
- 2-position mounting for columns and level bracket
- Aluminum load cell, single-point, IP65, OIML

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## Defender Series – R Base

MODEL	D6RS	D15RS	D30RR	D60RR	D60RL	D150RL
Capacity	6 kg	15 kg	30 kg	60 kg	60 kg	150 kg
Approved Resolution	OIML: 3000e	OIML: 3000e	OIML: 3000e	OIML: 3000e	OIML: 3000e	OIML: 3000e
Safe Overload Capacity	150% of capacity					
Pan Dimensions	240 x 300 mm		300 x 400 mm		400 x 500 mm	
Base Construction	Stainless Steel platform with painted steel frame and rubber leveling feet					
Load Cell Capacity	11 kg	22 kg	50 kg		100 kg	
Load Cell Cable	1 m L x 6-wire		2 m L x 6-wire		2.5 m L x 6-wire	
Load Cell Type	350 Ohm, aluminum, single point					
Load Cell Excitation	5-15V DC/AC					
Load Cell Rated Output	2mV/V					
Load Cell Protection	IP65					

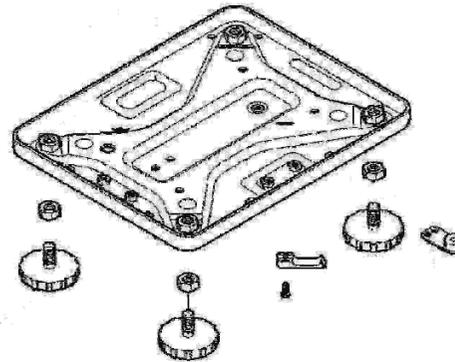
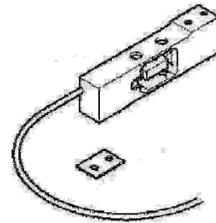
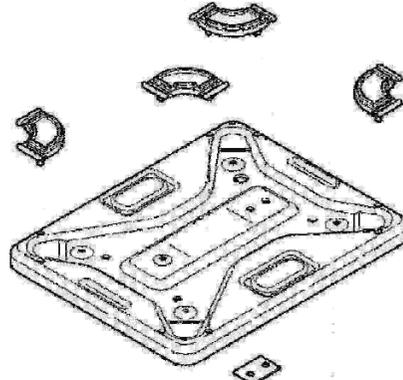
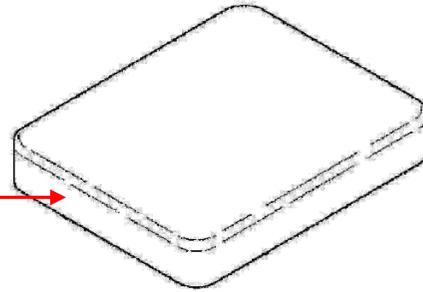
MODEL	D60RX	D150RX	D300RX	D150RV	D300RV
Capacity	60 kg	150 kg	300 kg	150 kg	300 kg
Approved Resolution	OIML: 3000e	OIML: 3000e	OIML: 3000e	OIML: 3000e	OIML: 3000e
Safe Overload Capacity	150% of capacity				
Pan Dimensions	500 x 650 mm			600 x 800 mm	
Load Cell Capacity	250 kg		500 kg	250 kg	500 kg
Net Weight	22.3 kg			36.8 kg	
Shipping Weight	27.8 kg			63.2 kg	

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## Defender Series – R Base

 Defender



### S, R, L size platform design:

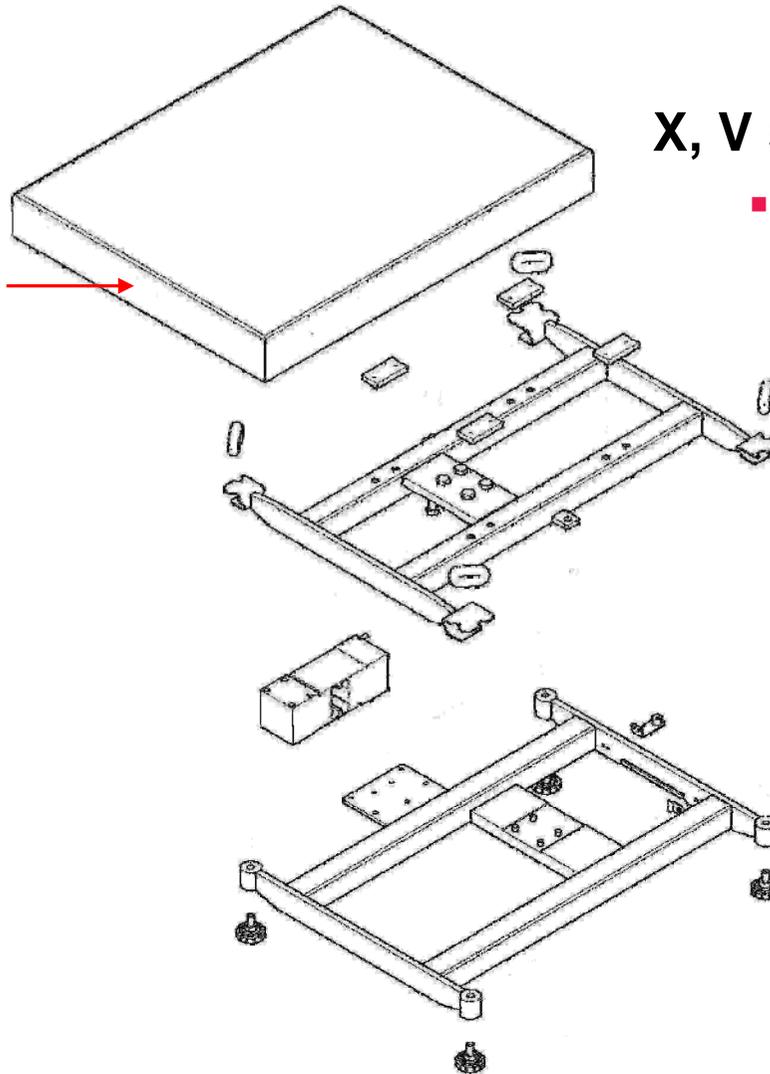
- Stamped frame design ensures maximized durability and rigidity

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## Defender Series – R Base

 **Defender**



### X, V size platform design

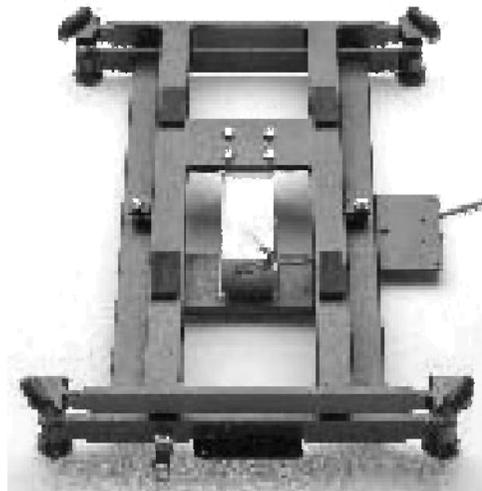
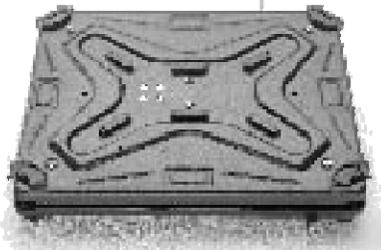
- Tubular frame design ensures the durability and rigidity of large size platform

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## Defender Series – R Base

S, R, L design



X, V design

- Highly durable powder-coated load frames
- High resolution, high quality load cell provides extreme performance

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## Defender Series – R Base

S, R, L design



X, V design

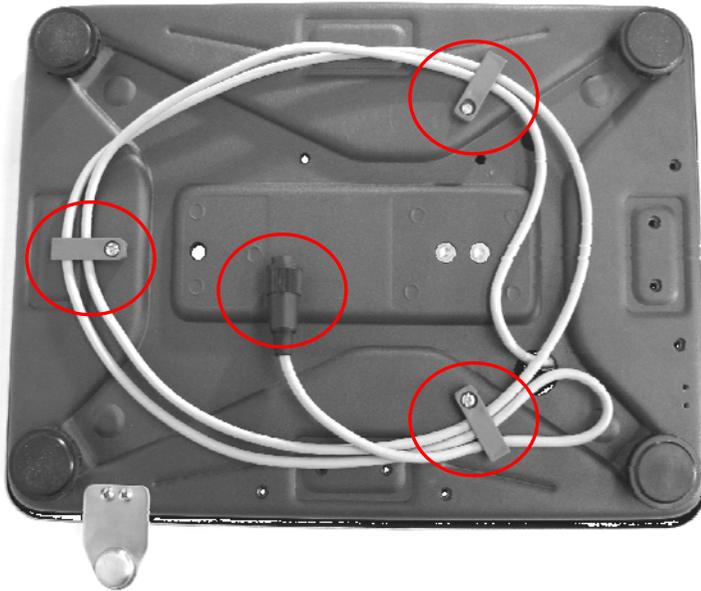


- Top and side load impact protection - durable rubber with outstanding damping characteristics

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## Defender Series – R Base

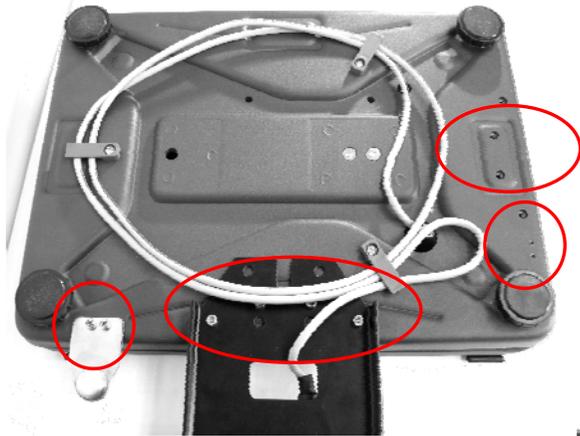


- Built-in cable clips to keep load cell cable tucked neatly and safely under the platform
- “Quick-connect” load cell cable plugs easily onto T51P and T71P indicators



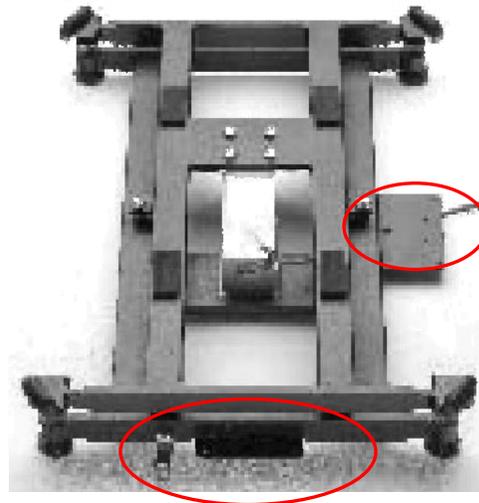
## Defender Series – R Base

S, R, L design



- 2-position mounting for available columns
- 2-position mounting for level bracket

X, V design

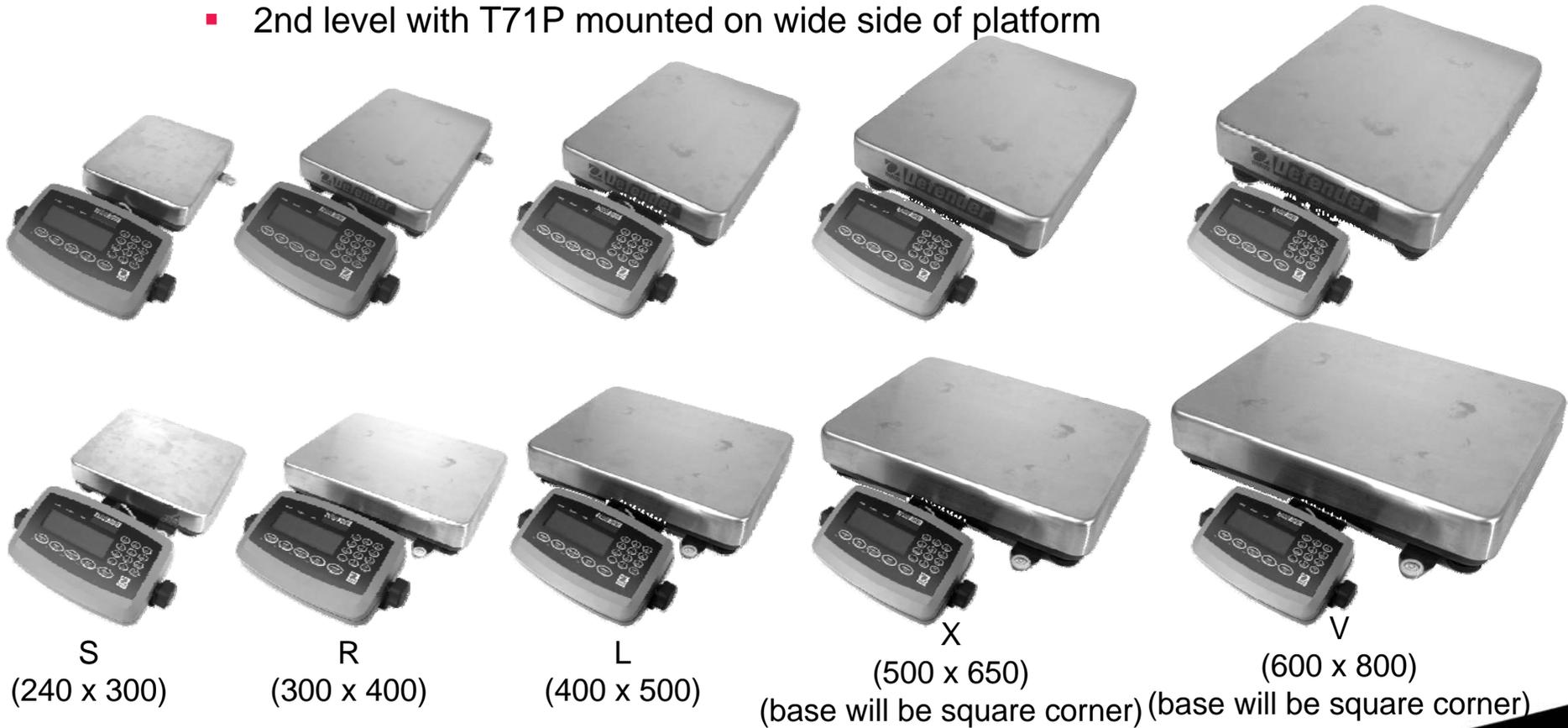




## Defender Series – R Base

### Scale configurations with T71P base mount (illustrated for perspective):

- 1ST level with T71P mounted on narrow side of platform
- 2nd level with T71P mounted on wide side of platform



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# Terminals & Bench Scales

A Complete Line-Up!



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