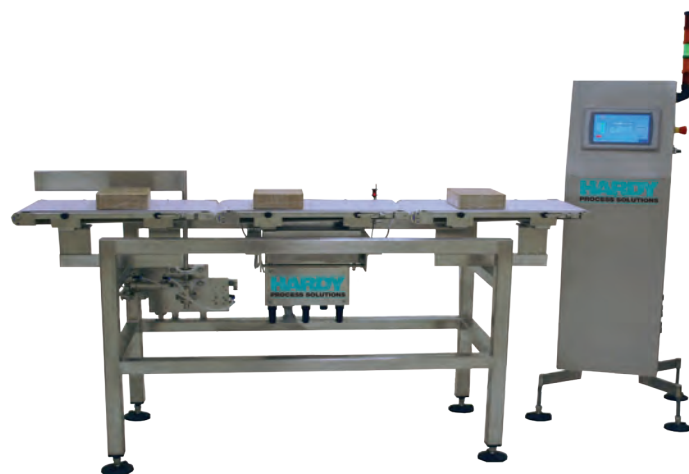




A Roper Technologies Company

Your Weighing Partner for **Process and Packaging**



Easiest to Use | Highest Performance | Lowest Total Cost

OEM Trends & Challenges



For nearly 100 years, Hardy has been helping OEMs and Machine Builders meet their customers' needs.

We understand the specific requirements OEMs have, and the challenges they face.

Our OEM customers tell us they require solutions that help support their following three goals:

- **Software Productivity:** to maximize design optimization and code reuse; and to minimize engineering hours and their time to market.
- **Scalability, Information Integration & Multi-Discipline Control:** to drive design flexibility; machine scalability; safety risk avoidance; and machine energy savings.
- **Sustainable Platforms:** to ensure hardware scalability; simplified integration; machine performance; footprint reductions; regulatory requirements.

Our industrial weighing solutions support the above goals and help OEMs deliver the lowest total cost to design, develop and deliver process & packaging equipment and skids. Our solutions boost overall equipment effectiveness (OEE), significantly reducing downtime by as much as 51% compared to other industrial weighing solutions. Hardy products are easy to integrate. They consistently, cost-effectively, and safely help produce high-quality products.

Let us show you how we can help you meet your goals with weighing solutions that really work for OEMs and Machine Builders!

Industries that We're Proud to Have Worked In:

- | | |
|----------------------------|----------------------------|
| • Food & Beverage | • Metals |
| • Industrial Manufacturing | • Chemical Processing |
| • Consumer Packaged Goods | • Pharmaceutical & Biotech |
| • Mining & Minerals | |

Measure | Monitor | Control | Inspect

In almost every industry segment, raw materials and finished product need to be weighed multiple times in the manufacturing process. This is especially true for the chocolate manufacturing process, which has the need for accurate inventory control, material feed and rate control in batch control, filling and dispensing of finished product in packaging, and checkweighing for final product inspection. These are all areas in which Hardy excels and has the expertise and solutions to assist your team in reducing cost and increasing yield, while limiting downtime and achieving Overall Equipment Effectiveness (OEE).

Our weighing solutions support processing skids and packaging equipment across all stages of manufacturing. Some examples are:



**Loss in Weight/Gain
in Weight Batch Control**



Feeder Control



Filling & Dispensing



**Single Lane or Multilane
Check Weighing**



Applications

- Filling/dispensing
- Batching/blending
- Check Weighing
- Bulk bag/IBC
- Draft control
- Loss-in-weight rate control
- Loss-in-rate weight control
- Level control
- Tank farm monitoring
- Force measurement

Networks

- DeviceNet
- ControlNet
- Ethernet
- EtherNet/IP
- Remote I/O
- Profibus-DP
- Modbus RTU
- Modbus TCP
- Analog
- Serial

We Provide OEM Solutions that Support Your Business



Stock



Inventory Management Solutions

In stage one of the manufacturing process, you must have reliable visibility to, and an accurate count of, all raw materials in your manufacturing supply chain. This is the first step to ensure your process runs smoothly. Hardy's inventory weighing solutions deliver both at the least total cost to own, safely operate and maintain.

Types of Applications

- Vessel / Tank Weighing
- Inventory Control
- IBC Weighing
- Throughput Weighing

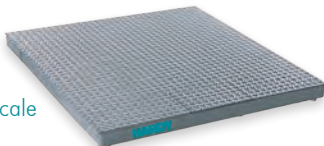
Hardy Solutions

Hardy HI 1769-WS/2WS
Plug In Weigh Modules



Hardy
HI 6600
Modular
Sensor
System

Hardy
Floor Scale



Hardy OneMount™
Advantage® Shear Beam



Make



Batching & Blending

The second stage of the manufacturing process involves sequentially or simultaneously adding one or more ingredients into vessels by weight and/or rate, then discharging the batch (sum of all the ingredients) to a downstream process. Hardy's material feed solutions ensure the accuracy of the mix (batch or blend), delivering highly repeatable results and ensuring good quality control at the least total cost to own, safely operate and maintain.

Types of Applications

- Sequential Batching by Gain in Weight
- Blending by Loss in Weight
- Simultaneous Batching by Loss in Weight
- Loss in Weight Feeder Control

Hardy Solutions

Hardy HI 1756-FC Feeder
Controller
Module and
HI 1756-2WS
Weigh Scale
Module



Hardy HI 4050
Weight Controller
and HI 6500
Weight Processor



Hardy Bench
Scales





In Every Stage of Process & Packaging

Quality, Safety, Solutions, Savings



Filling, Dispensing, Dosing

Packing lines need precise filling solutions (for gross weight applications), and/or dispensing solutions (for net weight applications) to control the very fast feeds needed to sustain the throughputs required as finished product is packed into containers. Weighing provides the best accuracy for this task, and the most repeatable result. Hardy's filling solutions (gain-in-weight) and dispensing solutions (loss-in-weight) deliver the best material feed results, at the least total cost to own, safely operate and maintain.

Types of Applications

- Packing by Gain/Loss in Weight
- Piece/Portion Weighing
- IBC Dispensing
- Floor Scale

Hardy Solutions

Hardy HI 1756-1DF/2DF Dispenser Filler and HI 2080-WS Weigh Scale

Hardy HI 1734-Weigh Scale for POINT I/O

Hardy Lift Deck Floor Scale



Hardy One Mount Beam Type, Low Capacity



Product Inspection

The last step in the manufacturing process calls for filled containers to be reweighed to check proper filling, meet regulatory requirements, and ensure customer satisfaction. Hardy's checkweighing solutions static (manual or semi-automated weighments) or dynamic (automated in-motion weighments) can be used for a wide variety of applications including verifying package, weight, piece count, grading or sorting. Once again delivering fast product inspection solutions, at the least total cost to own, safely operate and maintain.

Types of Applications

- Static Checkweighing
- Bench Scale
- Dynamic Checkweighing
- Portable Scale

Hardy Solutions

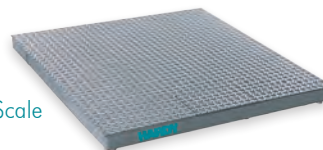
Hardy E-Scale IIot-Ready Bench Scale



Hardy Dynamic Checkweigher



Hardy Floor Scale



Hardy HI SP6 Single Point



Solutions for all Types of OEM Customers

Your Business Need:

Developing, testing and refining your machines can be a waste of time, money and resources. You realize you can't be an expert at everything. So how do you avoid the trap of spending hours and hours, trying to meet tough customer specifications, when you don't really have deep experience in the area of process weighing?

You partner with Hardy and leverage our expertise, experience and solutions. We can help you take a shortcut to the best solution and reduce both your development cost and time to market. Getting it wrong has always been easy. Getting it right with Hardy is a far better option.



Design, Develop & Deliver

Less TIME to engineering, EASIER to implement, VERY scalable

- Choose from a variety of instruments, PLC plug-in modules and sensors, scalable to the economy of your machines.
- Use an open-architecture that delivers complete freedom of design and optimizable footprint.
- Deploy weight processors or weight controllers with in-built material feeds by weight, rate, or check weighing.
- Take advantage of validated integration tools, easy configuration and FREE phone support from experts in process weighing.

OEM CUSTOMER VALUE		HARDY TOOLBOX										OEM VALUE	
		Fast, Accurate calibrations (C2) Semi-auto operator diagnostics (IT) Vibration elimination (W AVERSAVER) Predictive feed management (FEEDMASTER) Remote product inspection (CHECKMASTER) Auto save & copy of setup (SMM) Validated integration tools (AOP/AOI/Code) User definable linking of data to I/O (MAPPING)											
		> Safety	> Safety	> Quality	< Waste	> Quality	> Visibility	> Accuracy	< Time [1-2 hrs]	< Time [1-2 days]	< Time		
		< Time [3-5 hrs]	< Time [2-3 hrs]	> Accuracy	< Time	< Time	< Time	< Time [1-2 hrs]	< Time [1-2 days]	< Time	< Time		
Software Productivity	Reduce Hours to Engineer	•										•	Reduces time to design/develop/deploy
	Design Optimization	•	•	•	•	•	•	•	•	•	•	•	Reduces time to develop
	Time to Market	•			•	•	•	•	•	•	•	•	Reduces the time to deploy
	Code Re-Use				•	•		•	•	•	•	•	Reduces the time to develop
Scalability, Integrated Information, Multi-Discipline Control (e.g. PID, Feed Forward, etc.)	Design Flexibility				•	•						•	Expands the number of design possibilities
	Machine Scale							•	•			•	Multiple scales, weight capacities & resolutions
	Safety Risk Avoidance	•	•				•						Supports safety of people, product & production
	Machine Energy Savings												Micro800 and POINT I/O scale modules draw less than 1 watt of power
Sustainable Platforms	Scale in hardware												1 to many scales possible (plug-in-modules or instruments)
	Simplified integration				•	•	•	•	•	•	•	•	Reduces time to develop/deploy
	Machine performance	•	•	•	•	•							Reduces time to deploy/optimize/diagnose
	Footprint reductions												Small footprint instruments & sensors
	Meet Standards												Meets international standards for process weighing
	Secured IP												Reduces risk by supporting multiple levels of secure access
	Non-invasive upgrades							•	•				Supports machine uptime

Tools to Increase Productivity



PROCESS TOOLBOX

The Hardy Process Toolbox is a unique set of productivity tools that support industrial weighing functions. Each tool saves time, increases accuracy, improves efficiency or reduces risk in process weighing applications, while saving OEMs considerable development and systems integration time. Another key benefit is the ability to differentiate your product offering.

- ✓ **Accurate**
- ✓ **Stable**
- ✓ **Fast**
- ✓ **Flexible**
- ✓ **Easy**



C2® - Calibrate Without Weights

The Hardy C2® Process Toolbox function provides quick and easy electronic calibration of a weighing system without the need for heavy test weights.



WAVERSAVER® - Stabilize Noisy Weight Readings

Hardy's WAVERSAVER core technology eliminates the effects that surrounding vibration has on the scale weight signal, providing only true data for fast, accurate weight reading.



WAVERSAVER+ - Increase Scale Resolution

Filters both external and internal noise under a static weight condition to go beyond the 1 in 10,000 limitation, providing repeatable weighing results the first time and every time.



INTEGRATED TECHNICIAN® - Diagnostic Tools for Operators

Hardy's INTEGRATED TECHNICIAN (IT) core feature helps you troubleshoot your weighing system and diagnose problems from the front of the instrument or via the PLC.



Embedded Web Server - Connect from Anywhere

Access your instrument from any computer browser. Use the embedded web server to set up all parameters from anywhere on the Ethernet network



Secure Memory Module - Safe Configuration Backups

Hardy's Secure Memory Module (SMM) uses a standard SD card or USB stick to automatically back up critical weighing system data, and allowing you to transfer it to another like controller in a few minutes. You can also use the card to easily back up your controller data onto a PC.



FEED-MASTER - Mitigate Feed Disturbances

Hardy's proprietary FEED-MASTER predictive/adaptive algorithm adapts for the flow variation in real time during every feed.



CHECK-MASTER - Weigh Stationary or In-Motion Items or Finished Product

Hardy's CHECK MASTER is a set of software tools that support check weighing functions and are part of every Hardy Check Weighing solution. A fully automated Check Weighing system is designed to weigh static items or automatically weigh in-motion items. The check weight controller then directs downstream diverter gates to route product based on weight.

Proven Solutions

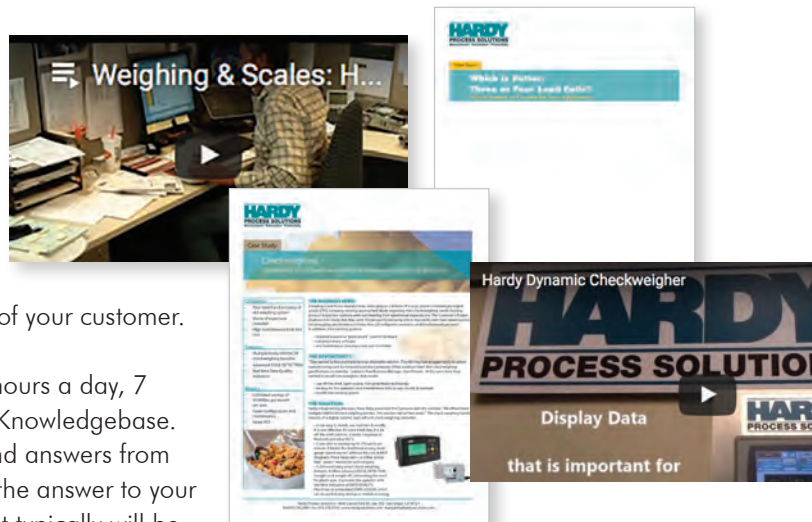
For nearly 100 years Hardy Process Solutions, headquartered in San Diego, California, has been providing weighing solutions for process control and packaging. With that, we have saved our customers thousands of production hours and millions of dollars. Our goal is to provide superior weighing equipment as an industrial scale company that stays on the pulse of innovations in the field. At Hardy, we pride ourselves on the ability to continuously provide superior product quality and excellent customer support, which enables our customers to achieve their process or packaging goals.

Hardy delivers high performance weighing solutions with the LOWEST TOTAL COST to own. We include Industry Leading Technology in all of our scales and instruments to make it EASY for you to install, integrate, and maintain. Powerful solutions that are easy to use is why our customers realize increased production efficiency.

Instant Information

Our technical support team will not only help you to establish which type of weight measurement and control best suits your application, but also to guide you on applications and integration. The resulting solution is tailored to meet the business needs of your customer.

Your technical questions can be answered 24 hours a day, 7 days a week, 365 days a year from the online Knowledgebase. WebTech was developed with real questions and answers from Hardy customers just like you. If you can't find the answer to your question, post your question on WebTech and it typically will be answered the same or next business day.



Simply go to:

www.hardysolutions.com/support-center/view



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Unrestricted Access to Manuals and Drawings Online
Free Dial-In Technical Support and Applications Support
Onsite Certified Technicians for Hire



Since 1993



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Hardy is a proud Encompass™ Global Partner with Rockwell Automation®. Hardy is a member of the Control Systems Integrator Association

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OEM-07/17
0400-OEM-01A