SENCON
SENSING • TESTING • GAUGING

Master Series™

Automatic Buckle Gauge

Fully automatic measurement of the pressure required to reverse the dome on beverage cans

The Master Series™ Automatic Buckle (dome reversal) Gauge measures the precise pressure at which the dome will reverse (pop) on necked or un-necked DWI beverage cans. An optional module can be specified which reports the can height growth (dome growth) for up to five user defined pressure profiles and hold times.



- **Measures two can diameters without change parts as standard (an optional four diameter auto changer is also available)**
- **Can height growth (dome growth) - option**
- **Can be integrated with other Master Series modules**
- **Measurements and failure limits can be set in psi, bar, kPa**
- **A compact semi-automatic benchtop version is also available that uses the same advanced technologies**

MASTER SERIES

FLEXIBLE CONFIGURATION: Test characteristics for different can types are easily set up and associated with user selected production lines. Procedures can be set up to include upper and lower failure limits and the measurement results set in psi, bar, kPa.

CAN HEIGHT GROWTH (DOME GROWTH): An optional module can be specified which reports the can height growth (sometimes known as “dome growth”) for up to five user defined pressure profiles and hold times.

EASY TO USE: The gauge uses Sencon’s powerful, Process Master™ gauge control software to provide a single, unified user interface for all Master Series™ gauge modules, saving operator time and minimizing training. Options are provided for setting up tests and procedures. Batches can also be re-prioritised on the fly if needed. Process Master™ is a powerful and flexible gauge management system.

MULTIPLE CAN DIAMETERS: The standard version supports up to 2 different can diameters without change parts. Additional can body diameters can be accommodated with a simple tool-less change of the clamps.

4D AUTO-CHANGER

The optional 4D auto-changer enables a Master Series™ buckle gauge to automatically test four different can diameters without any manual intervention.





The 4D Buckle module automatically changes can clamps without any operator intervention. The manually insertable holding clamps are automatically changed to the correct diameter before a batch test begins, allowing up to four different diameters to be measured. The 4D autochanger is also available for retrofitting to existing Master Series™ Buckle gauges.

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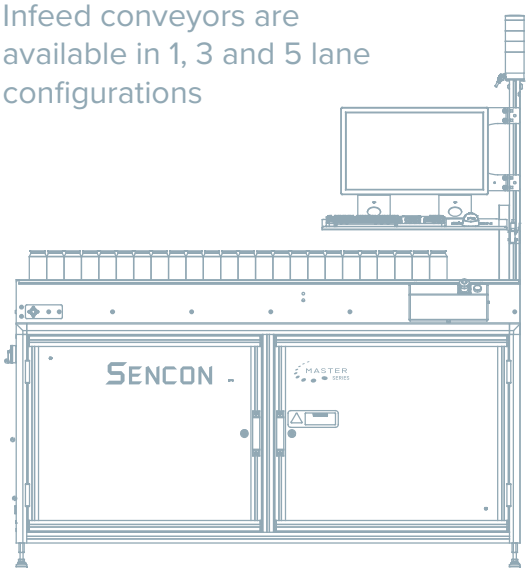
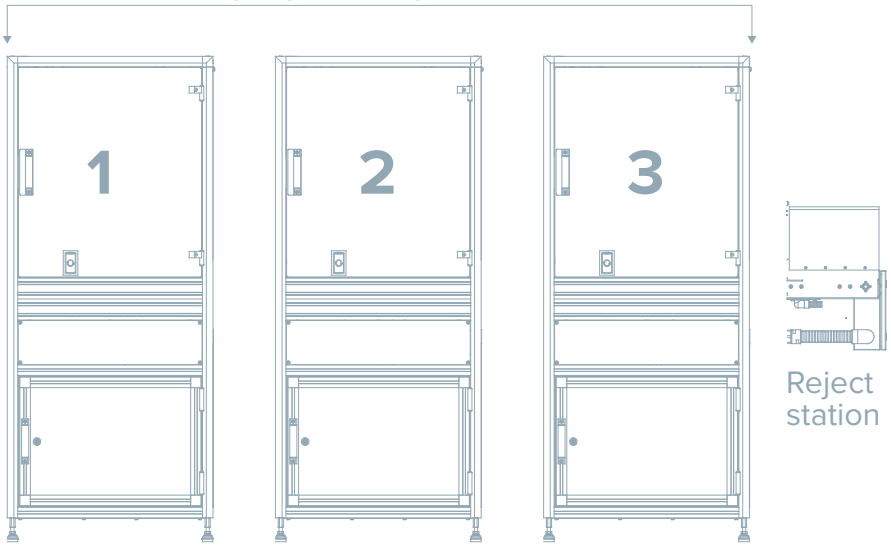
CREATE YOUR PERFECT GAUGING SUITE

Infeed conveyors are available in 1, 3 and 5 lane configurations



Up to 3 gauges configured in parallel



Reject station

Minimum configuration (plus reject station)

TYPCAL SYSTEM CONFIGURATIONS

Back End Suite: Back End + Axial Load + Buckle

Coatings Suite: Film-Scan™ + Enamel Rater

Ordering Information

DESCRIPTION	CAN SIZE	NECK	HEIGHT
Master Series™ Buckle Gauge: Standard	Any two diameters for 202 to 211 with snap in inserts*	200	88mm to 200mm
Master Series™ Buckle Gauge: Large can variant	300 sngle size	206	88mm to 210mm
Master Series™ Buckle Gauge: Super size can variant	307 single size**	209	88mm to 210mm
Master Series™ Buckle Gauge: Standard with dome growth	Any two diameters for 202 to 211 with snap in inserts*		

*An optional 4 diameter auto-changer that automatically changes can clamps without any operator intervention is also available.
**To accommodate a full batch of cans a multi-lane conveyor is advisable.

Core Module & Conveyor Options

CODE	DESCRIPTION
210-22215-00	Master Series™ Core Module with Single Lane Conveyor
210-22240-00	Master Series™ Core Module with 3 Lane Conveyor
210-22250-00	Master Series™ Core Module with 5 Lane Conveyor

Each lane has a capacity of 24 cans (211 diameter). Automatic in-line feed is possible as special option on all lanes. Conveyor extensions are also possible.

Options & Accessories

CODE	ITEM	DESCRIPTION
6110D	4D Buckle Module	Optional 4 diameter auto-changer increases can body diameters to 4 without change parts
6110DG	Dome Growth Option	Can also be added as an upgrade to existing Master Series™ or Benchmark™ Buckle Gauge
395-16151-00	Bodymaker ID Camera	Optional ID camera for identifying the Bodymaker mark on the can. This is typically installed on the first Master Series™ module of a multi-gauge system.
096-24090-00E	Spray ID Camera	Optional ID camera for identifying the Spray Machine mark on the can. This is typically installed on the first Master Series™ module of a multi-gauge system.
OPC	OPC-UA Plug-in	Adds OPC-UA fuctionallity to Process Master ™ gauge software for machine-to-machine (M2M) communication within the Industry 4.0 digital factory.

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TECHNICAL SPECIFICATIONS

MEASUREMENT CAPABILITIES	
Can Material:	Aluminium and Steel
Cans Accepted:	Body Diameter: 202 (54mm) to 211 (68mm) – 2 discrete diameters concurrently (standard gauge). 4 discrete diameters concurrently (4D gauge) Can height: 87 mm to 196 mm without dome growth option, 100 mm to 200 mm with dome growth option.
Maximum Batch Size:	255 cans (auto fed), 24 cans (manual fed) for 211 (68mm) diameter cans
Test Types:	Manual, Auto sample, or Recheck

CONTROL	
Controller:	Process Master™ gauge software running on an integrated PC within the Conveyor module
Measurement Reporting:	Batch results displayed on PC screen and optionally sent as report to network storage or network printer.
Inputs and Outputs:	RJ45 10/100 Mbps network connection for connection to customer IT network for storage and printing of measurement reports

OPERATING PARAMETERS	
Temperature Range:	10°C to 40°C* (50°F to 104°F) standard variant 10°C to 50°C (50°F to 122°F) extended temperature variant*
Relative Humidity:	0% to 80% non-condensing
Ingress Protection:	IP20
Dimensions	Gauge cabinet (including rear chute) **Width:** 1053 mm (41.45”) **Depth:** 780 mm (30.70”) **Height:** 1840 mm (72.44”) For full system, add the following to the width: **Reject station:** 375 mm / 15.0” **Single Lane Conveyor:** 1941 mm (76.42”) **3 or 5 Lane Conveyor:** 2401 mm (94.53”)

SUPPLY REQUIREMENTS	
Voltage:	100-120v or 200-240v customer to specify at order. (Gauge powered through the Conveyor Core).
Air Supply:	6 to 7 bar (87 to 101.5 PSI)
Maximum Pressure:	127 psi (internal air amplifier)

DESIGN STANDARDS AND SAFETY	
Maintenance:	Routine cleaning and checks. Scheduled servicing interval: 1 year.
Calibration:	Internal pressure transducer is calibrated to traceable standards Annual recalibration / re-validation of gauge accuracy is strongly recommended.
Compliance:	**CE:** Complies with relevant EU product directives UKCA: UK Conformity Assessed
Safety:	Red, amber and green beacons to indicate system status from a distance Relay outputs for flexible triggering of external (customer) warning systems

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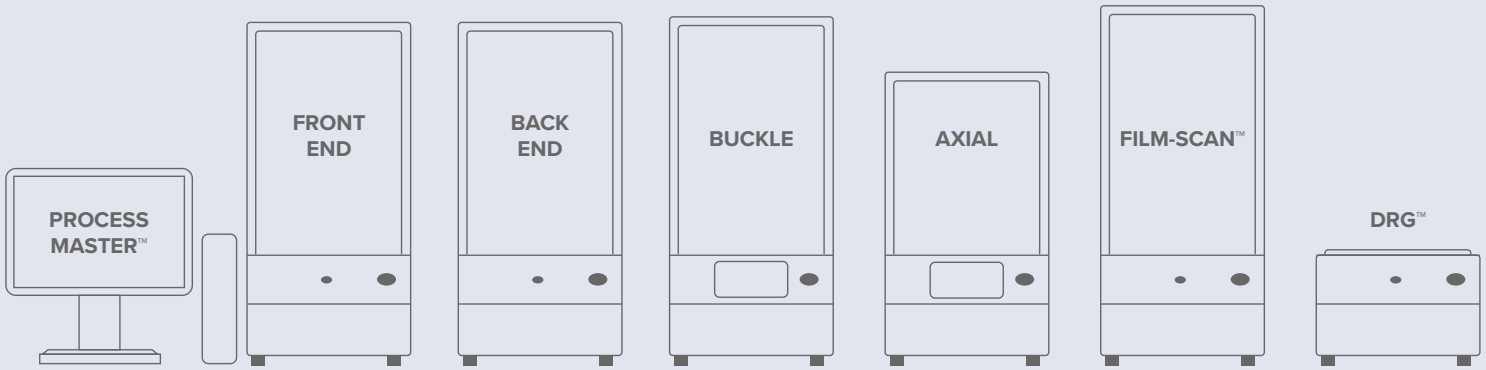
BENEFITS OF MASTER SERIES™

The modular design of our highly flexible and fully automatic Master Series™ gauges allows you to create the optimum combination of gauges to suit your individual requirements. This cost effective solution is the perfect fit for the modern can plant, saving time and floor space.

MULTI-SIZE CAPABILITY AS STANDARD: The gauges can handling system has been designed to accept standard beverage can sizes without change parts.

MODULAR SYSTEM: Allows gauges to be purchased individually or as integrated groups. Individual gauges can be added at a later date to increase throughput or add test features.

- Fully automatic, operator-free measurement
- Sampling on time or production basis
- Fully self-checking
- Data available on screen and exchanged via local area network
- Uses well-proven measurement techniques
- Modular design for cost effective expansion
- Future-proofed for changing requirements – easily update and reconfigure at any time
- Multi-lane capability – universal infeed conveyor



BIG ON CAPABILITY, SMALL ON SIZE

The Benchmark™ range of semi automatic benchtop gauges for the modern can plant

WORLDWIDE SUPPORT YOU CAN TRUST

We are committed to providing the best customer support worldwide with service engineers based in North and South America, Europe and Asia backed up with technical support from experienced industry specialists based at three technical support centers – you can trust Sencon.

Technical support is easily accessible through our 'Quick Assist' QR codes which offer support via WhatsApp*, email, web chat and telephone. Additionally, our online knowledge base provides support resources for all Sencon products.

*only available in Europe, Asia, Africa and Oceania



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