

**Weigh out
in front...**

**with faster,
more accurate
checkweighing**

**The Icore Autocheck 8000
by Ramsey**

GENERAL DESCRIPTION

Trouble-free operation and weighing accuracy are important factors when considering checkweighing equipment. The AC-8000 is designed to operate reliably and provide the best weighing accuracy possible from a checkweigher. From the design of electrical circuitry, to the enclosure for the electronics, the AC-8000 has been built with the user in mind.

The single CPU (central processing unit) board design of the AC-8000 offers greater dependability and lower maintenance costs. With the main electronics centralized on one board, trouble-shooting and repairs are easier. Downtime is also reduced should the board need repair.

Interruptions from typical in-plant electrical noise are all but eliminated in the AC-8000. The all digital data processing of the electronics not only provides a more stable, drift-free signal, but it also means there are no pots to adjust or "tweak".

The large memory capacity of the 16-bit microprocessor increases the flexibility of the AC-8000, allowing it to handle a broader range of applications. It also increases the data processing speed and permits the AC-8000 to weigh and "crunch" numbers faster than any checkweigher available today. The electronics can actually process data at a rate of 1,000 packages/minute!

All electronics are housed in a stainless steel enclosure suitable for plant washdown. The one-piece seamless construction provides an easy-to-clean, smooth exterior. There are no seams or crevasses for product to build up. Internally, the enclosure is separated into two compartments. The lower compartment contains all high voltage power and field terminations, while the upper compartment contains the main checkweigher electronics. Providing separate compartments further minimizes the potential effects of electrical noise interference.

The following are standard features of the AC-8000.

Weight Zones - 3 zones standard. Underweight/On Weight/Overweight

Displays - Weight - Displays actual weight of product in grams, kilograms, ounces or pounds.

Zone Indicators - Provides visual indication of weight class of last product weighed.

Counts/Zone - Total number of packages in each weight zone are displayed using the "STATS" button.

Average Package Weight - The average weight of the packages in each zone can also be displayed using the "STATS" button.

Net Weight - Weight of the empty container can be automatically tared out so that only net weight will be displayed.

15-Product Programmable Set-Ups - Set-up parameters for 15 products can be preset into the electronics. The AC-8000 can then be switched from one product to another in a matter of seconds.

Auto Zero and Manual Zero - The electronics automatically zeros the weightable between packages. This feature compensates for product build-up on the weightable. Manual zero permits re-zero of scale at operator's discretion.

SET-UP AND OPERATION

The AC-8000's front panel is designed to simplify set-up and operation. All data is entered digitally using the soft keyboard buttons on the front panel. There are no potentiometers or thumbwheels to adjust or wear out. Each button's function is clearly displayed. The operator is assisted in set-up by the bright, easy-to-read vacuum florescent displays which show in plain English which data to enter.

Several other features make the AC-8000 easy to use:

Sample Button - A push of the sample button ejects a package from the line and displays the weight for operator verification. This allows for an actual product weight check on accuracy without interfering with line operation.

Automatic Self-Diagnostics - Continually monitor system operation and assure that everything is operating properly. A fault relay for connection to an external alarm is provided.



Battery Back-up - A lithium battery retains set-up information and stored accumulated data for up to three years. Battery shelf life is ten years.

Password Protection - Collected data and set-up parameters are protected from unauthorized change by the password feature of the AC-8000.

Do Function - Enables the user to create and execute special sequences with a single button. This function is customer programmable and can be set up with any sequence of product or run functions.

When the Do button is pushed, the proper functions will be executed in sequence.

Digital Filter Set-Up - During set-up, filter parameters are selected for each individual product using the front panel keypad. This process is easily repeated as it involves no pots or adjustments. This exclusive feature improves the weighing accuracy by providing the optimum filter setting for each product.

Data Integrity Alarm - Electronics provide automatic verification that all set-up values and data are valid.

WEIGH FRAMES

The AC-8000 can be used with any of the Icore weighframe arrangements. This versatility allows creation of checkweighing systems that are best suited for the specific needs of your application and products. The Model 8100 frame was designed to complement the AC-8000 and provide the ultimate in checkweighing speed and accuracy.

Model 8100 Frame - Designed with a stable base, low center of gravity, and special isolation mounts to minimize interference from vibration. It has a minimum number of moving parts which simplifies repairs, shortens downtime.

OPTIONS AND ACCESSORIES

The AC-8000 can be customized to meet your every checkweighing need. Several options are available which transform the basic AC-8000 into a comprehensive checkweighing system.

5 Zones - This option increases weight zone classifications from the standard 3 to 5.

STATS I - Provides statistical information on average and cumulative weights, standard deviation and package rates.

STATS II - Comprehensive statistics for monitoring productivity and analyzing packaging line performance.

Servo - Feedback control for fillers, slicers, cutters, etc. to adjust weight of product to desired target weight.

or host computer. The information can be in the form of raw weight data or a formatted report, depending upon the STATS option included with the checkweigher.

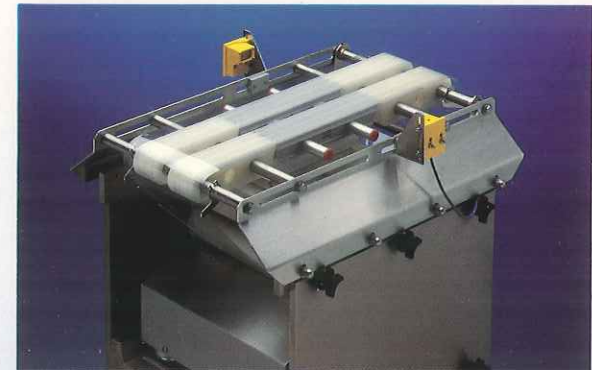
The COM option also allows remote control operation of the AC-8000 using a terminal or computer.

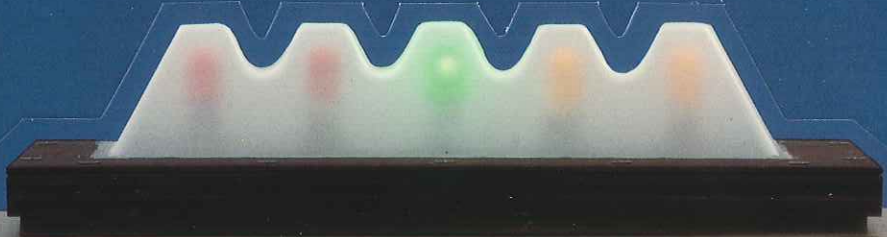
Remote Zone Lamps - Provide weight zone indications from a distance of up to 200 feet. These large, bright lamps provide the same information as the front panel LED's and can be mounted on top of the checkweigher or any flat surface.

For additional information on the 8100 weighframe, STATS, servo and COM options, refer to the enclosed data sheets.

PRODUCT SUPPORT

From design to shipment, and beyond, Ramsey supports its equipment with full range of activities. A large staff of electrical, mechanical, and software engineers allows Ramsey to keep pace with new developments in electrical and mechanical design. Our extensive customer service organization is dedicated to providing users with technical support, field service and prompt parts delivery. Whatever your checkweighing needs, you can count on Ramsey to provide products with simplified operation, exceptional flexibility and superior design.





RAMSEY

ICORE
AUTOCHECK
8000

ZONE

μP OK ZERO NO GAP ERROR

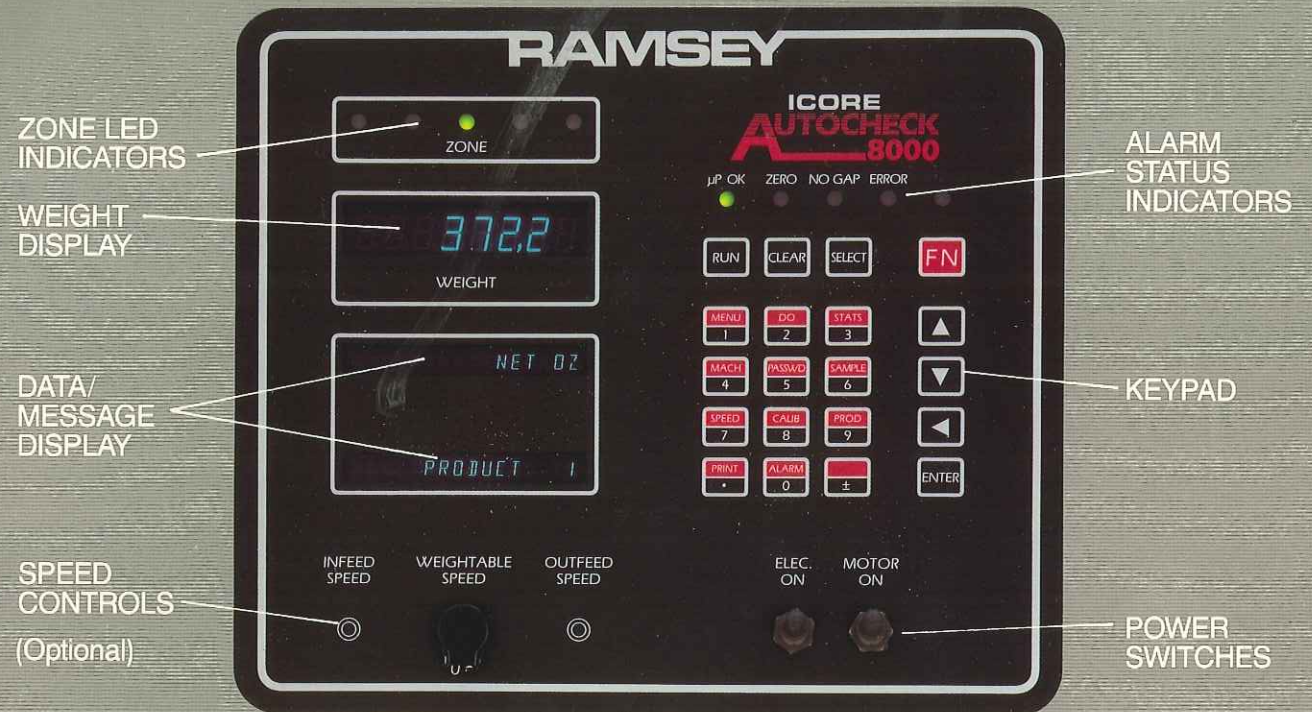
372.26
WEIGHT

RUN CLEAR SELECT FN

MENU 1	DO 2	STATS 3	▲
MACH 4	PASSWD 5	SAMPLE 6	▼
SPEED 7	CALIB 8	PROD 9	◀
PRINT .	ALARM 0	±	ENTER

NET OZ

PRODUCT 1



A Significant Advancement in Checkweighing Technology

Productivity. It's the key to profitability in nearly every business. Today, in the packaging industry, there's a real requirement to make production as fast and efficient as possible. But, speed alone is not enough. Now, more than ever before, accurate checkweighing is needed to assure close weight tolerances. The new Icore Autocheck (AC) 8000 checkweigher from Ramsey has been designed specifically to address these higher speed and higher accuracy demands of today's packaging industry.

In designing the new AC-8000 checkweigher, we drew upon our 35 years of experience in the in-motion weighing business. The AC-8000 actually represents the third generation of Icore microprocessor-based checkweighers. We used the latest technology to build flexibility into the electronics. Numerous options are available to transform the AC-8000 from a low cost, basic checkweigher into a sophisticated tool for monitoring

motor drive to the rigid strain gauge load cell, special efforts were made to design extraordinary performance into this frame. For any given application, the Model 8100 frame truly offers superior weighing accuracies.

The AC-8000 checkweighing system is built to last. With one main CPU board, the electronics offer greater reliability with less maintenance. You'll find the stainless steel enclosure easy to clean and suitable

Complete facilities to answer worldwide needs.



With the advent of high speed filling and packaging lines, the automation and monitoring of production is critical. To monitor these lines, it is important to have up-to-date information at your fingertips. The data communication option (COM) for the AC-8000 checkweigher can provide both a hard copy running analysis of line performance and a means to automate production change-overs. The COM option provides the following:

- Interval reports to indicate packaging line trends.
- Ability to interface with a computer for production and financial reporting.
- Remote set-up capabilities for product and/or parameter changes.
- Outputs for interfacing with remote printers or CRT's.

The productivity gains and material savings resulting from COM makes this option a very high return investment.

GENERAL DESCRIPTION:

The COM option provides 2 serial ports, each RS422/423 signal compatible, for communication with external equipment. One port has strictly output capabilities (printer), while the other has both input/output functions (remote). Each port has adjustable baud rates and protocol compatible with most printers, terminals and computers.

The information provided by the COM option is defined by the statistics calculating capability of the AC-8000:

AC-8000 WITH STATS I:

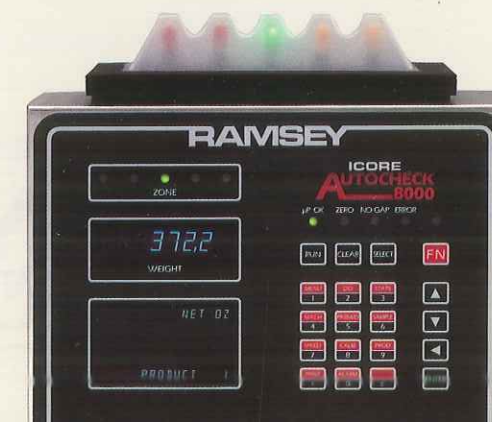
Printer Port - Provides output of all information of STATS I option (See STATS Option Data Sheet for details) in formatted report.

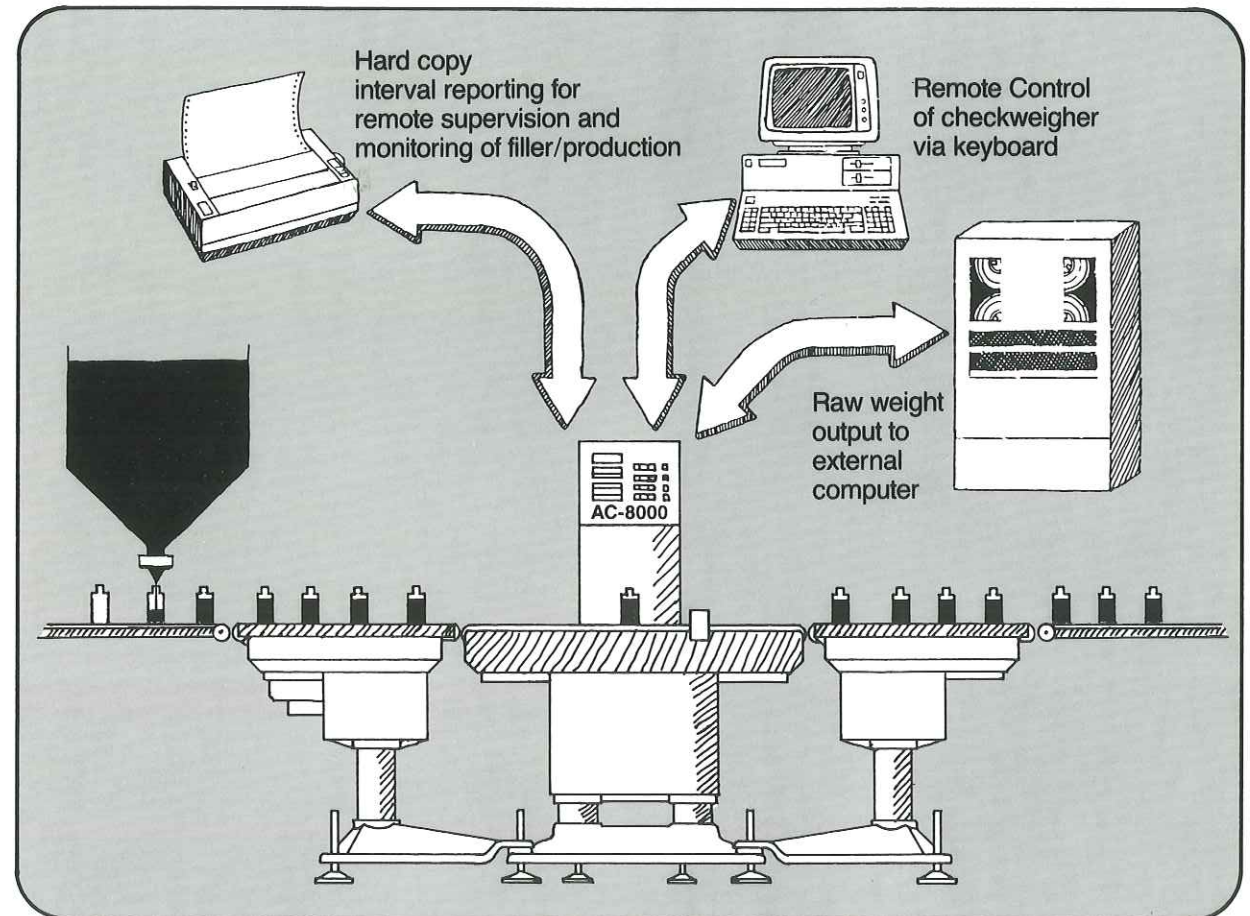
Remote Port - Allows product and parameter set-up changes from a remote terminal or computer.

AC-8000 WITH STATS II:

Printer Port - Provides output of all information of STATS II option (See STATS Option Data Sheet for details) in formatted report.

Remote Port - Allows product and parameter set-up changes from a remote terminal or computer.





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The statistics (STATS) options, when implemented, transform the AC-8000 from a basic checkweigher into a sophisticated tool for monitoring productivity and analyzing packaging line performance. The STATS I and STATS II programs are designed to provide the type of data needed for you to make decisions in controlling a production line. In addition to the package weight, counts/zone, and average package weight/zone provided as standard on the AC-8000, the STATS options provide a wide array of statistical information, including yield, product give-away, and standard deviation. This meaningful data tells you in exact terms how well your line is performing and provides information to keep production lines running profitably.

IMPLEMENTATION

The STATS options can be included as part of the AC-8000 at the time of purchase, or they can be added to in-field AC-8000 units at a later date. All statistical information can be

keeping production lines running profitably. STATS I was designed primarily for use on the standard 3 zone version of the AC-8000.

The STATS II option provides an even more

	Standard AC-8000	AC-8000 with STATS I Option	AC-8000 with STATS II Option
Information Available on Checkweigher Display	<ul style="list-style-type: none"> • Product Weight • Item Counts/Zone • Average Product Weight/Zone 	<ul style="list-style-type: none"> • Product Weight • Item Counts/Zone • Total Count All Zones • Average Product Weight for Items in Each Zone • Average Product Weight Total Production • Total Weight Items All Zones • Total Weight Each Zone • Standard Deviation of Accepted Product • Item Rate (Products/Min.) 	<ul style="list-style-type: none"> • Product Weight • Item Counts/Zone • Total Count All Zones • Total Count Accepted Items in Each Zone • Average Weight All Accepted Product • Average Weight Total Production • Total Weight All Accepted Product • Total Weight All Zones • Total Weight Each Zone • Standard Deviation of Accepted Product • Yield by Count (% Accepted) • Yield by Weight (% Accepted) • Product Giveaway • Item Rate (Products/Min.)
Information Output Available if COM Option also Selected	String of Product Weights Only	All STATS I Information Formatted Report	All STATS II Information in Formatted Report

COMMUNICATIONS

All statistical information can be transmitted from the AC-8000 to a printer terminal or computer if the communications option is included. Weight, set-up and statistical information is provided in a formatted form

with the STATS I and STATS II options. Additional information on the communications options appears on the enclosed Communications Option data sheet.



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The Icore Digital Servo Control System is an accessory feature to the AC-8000 checkweigher. The servo control option provides the user with a means of automatically controlling weight dependent machinery action such as fillers, slicers and cutters to control the weight of the product to the desired target weight.

In a typical packaging line, a filler, slicer or cutter is used to fill containers or produce products which are transported to a downstream checkweigher. The AC-8000 with servo is programmed to compare the actual weights of the filled packages to the desired target weight and then generate a corrective feedback signal to adjust the filler. (See Figure #1).

In addition, the servo-control option offers the capability of pre-programming set-ups for as many as 15 different products. This unique feature allows the user to enter and store specific servo parameters for individual products, allowing the user to easily switch from one product to another by entering only a single product code number.

Two basic types of servo-control are available. The continuous control system generates a control signal with a voltage or current pulse rate proportional to the difference between each package weight and a user entered target weight. The second system is the average control method which generates a correction signal based on the difference between the average weight of a

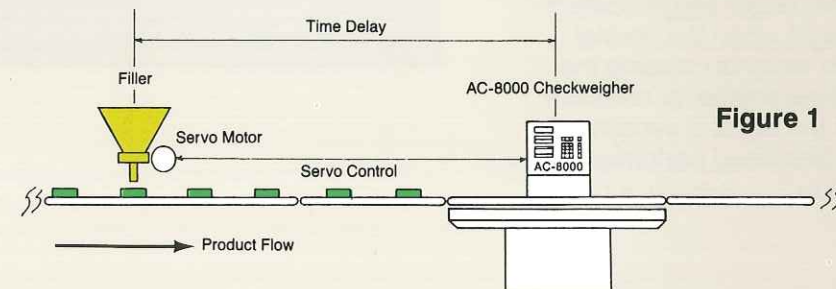


Figure 1

By utilizing the latest state-of-the-art electronics, the servo-control system has the flexibility to adapt to specific customer requirements, while at the same time offering simplicity in operation and minimum set-up. This option not only improves your profits by minimizing product give-away, but it can also increase productivity by minimizing underweight rejects.

SYSTEM FEATURES

The servo option is provided by a stand-alone CPU board with its own power supply housed in a separate NEMA-4X enclosure. The data link to the AC-8000 is an isolated 20mA current loop serial channel with a maximum length of 200 feet. Set-up parameters for the servo option are entered into the non-volatile

user-determined number of packages and the target weight. The type of servo-control required is usually based on the type of filler used. The AC-8000 servo can control most of the known fillers or slicers on the market today.

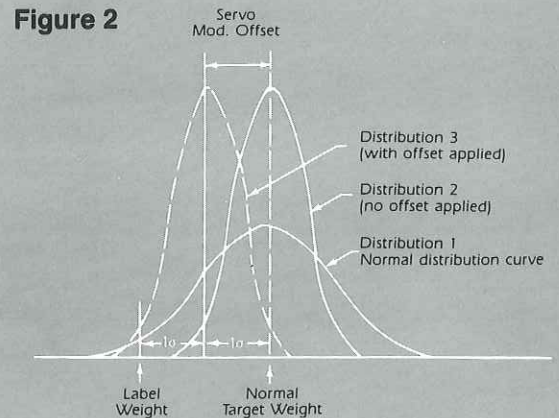


SERVO MODULATION

Servo Modulation is an elective software feature of the servo-control option. The feature is designed to be used in combination with data from the AC-8000 to allow a more exact optimum setting of the target weight. In most filling operations, the target weight must be set sufficiently high to assure that most of the packages will be above label weight. In order to minimize product give-away, however, it is desirable to have the normal target weight set as close to the label weight as possible. In an attempt to accomplish this end, operations are frequently set up to maintain a small percentage of underweight rejects.

The servo modulation feature automatically shifts the internal servo target weight toward the product label weight when the normal distribution of product weights crossing the checkweigher becomes smaller or narrower. This feature reduces the effect of variations in product density and filler head performance while minimizing product give-away and underweight rejects.

Figure 2





The weighframe is a critical part of every checkweighing system. In fact, checkweighing accuracy is directly related to the dynamics of the weighing process. If the frame isn't stable and the loadcell free from vibration, weighing errors can result. The Frame 8100 from Ramsey has been designed to minimize the effects of vibration and provide the ultimate in checkweighing performance.

With a simplified design, the 8100 frame has only a minimum number of moving parts. This not only helps reduce vibration, but it also

reliability, the 8100 frame should be part of your checkweighing system.

GENERAL DESCRIPTION

The 8100 frame provides the structure to move the product over the checkweigher. The frame consists of the conveying medium (stainless steel chain, plastic chain or mylar belt), weightable with load cell, motor and drive mechanism, pedestal support and base.

Because checkweighing is a dynamic or

To help minimize interference from vibration, the 8100 frame was designed with a large, stable base and an extra rigid framework. The base provides a large mass for stability and a low center of gravity to minimize the effects of vibration. The highly rigid design assures that there will be no movement within the weighframe structure to amplify any inherent vibration.

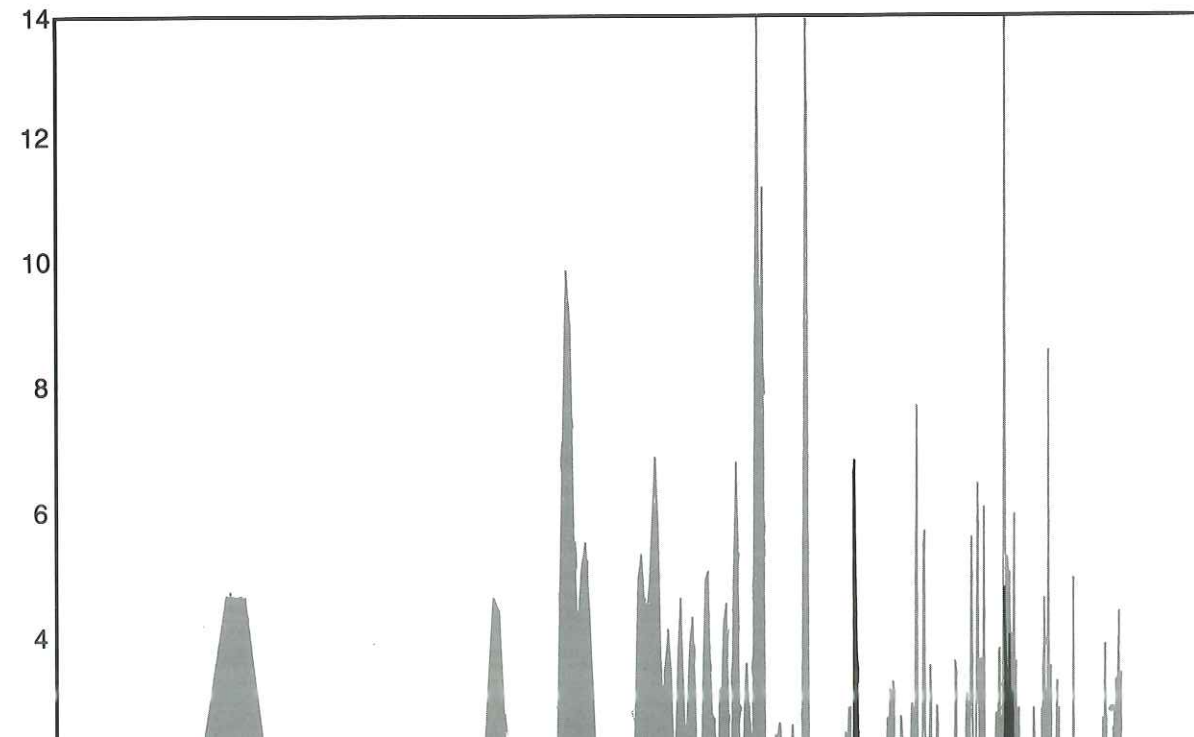
The effects of vibration are further minimized by isolating the motor drive, chassis and dead plates from the loadcell and weightable. (Refer to Fig. 1) Specially designed shock mounts absorb the background noises from the motor and conveying medium which would otherwise be transmitted to the weightable. With less background noise, the signal from the

weighcell is clearer and less distorted. This improves weighing accuracy and allows the 8100 frame to operate at higher speeds without loss of performance. In fact, the 8100-SS (the stainless steel chain version) is designed to operate at rates up to 700 CPM, depending on product weight and size.

To weigh at these high speeds, the 8100 uses a stiff low-mass weightable and a rigid strain-gauge loadcell. The rigidity of this weigh platform arrangement allows the loadcell to respond more quickly to deflections from product weight. The special loadcell design also protects against damage from excessive forces. Should repair ever be needed, the loadcell can be easily and quickly replaced minimizing downtime.

VIBRATION AMPLITUDE COMPARISON GRAPH

% ACCEL



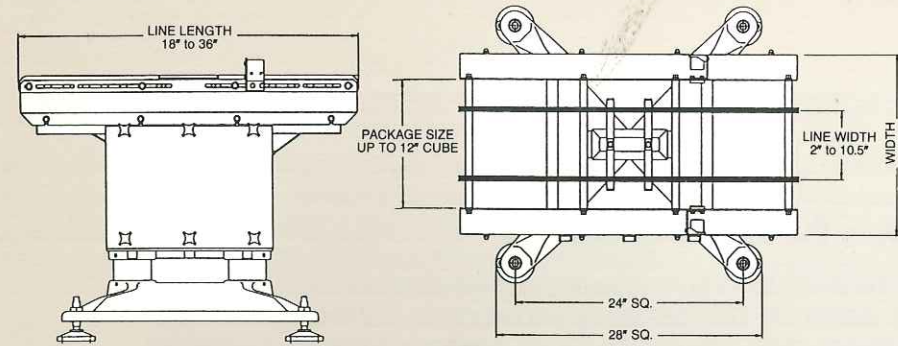
The Model 8100 frame also offers the following features:

- Unitized Drive Assembly -** With the 8100, there is no gearbox to break down or leak. The motor drive assembly can be easily accessed by removing the front trough side plate. This design allows the motor and drive assembly to be quickly and easily removed for repair.
- Corrosion Resistant Finish -** All exposed metal parts on the 8100 frame are either stainless steel or nickel plated aluminum. The entire weighframe is resistant to corrosion and suitable for washdown.
- Hermetically Sealed Loadcell -** The load cell is made of stainless steel and hermetically sealed for protection against hostile environments. The load cell is also suitable for washdown.
- Low Maintenance -** With only two bearings to lubricate and a few moving parts, maintenance is reduced. Also, a unique tensioning system allows adjustment of each transport chain individually. This assures proper tension on each chain for maximum weighing accuracy.

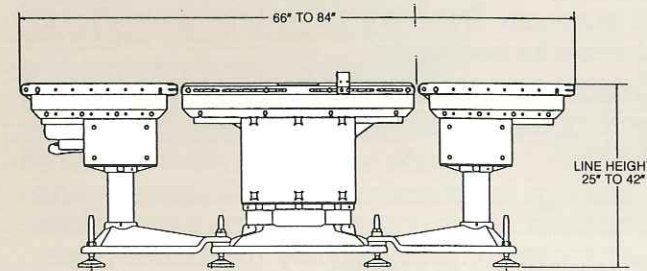
OPTIONS

- Conveying Media -** The 8100 frame is available with 3 different conveying media:
- 8100-SS Stainless Steel Chain -** For heavier products and higher speeds where a more rugged and durable conveying media is required.
- 8100-N Nylatron Chain -** For lighter products, this light weight, low friction chain provides maximum accuracy without compromising durability.
- 8100-M Mylar Belt -** For packaged goods not conducive to transport with chains, several widths of mylar belts are offered. Mylar belts can be changed in a matter of minutes without tools!
- Isolated Infeed/Outfeed -** Infeed and outfeed conveyors are available for use in increasing product spacing and smoothing product transfer between lines. The infeed/outfeed each have their own mechanical drives.
- This improves weighing accuracy because there is less vibrational noise within the actual weighframe.
- Variable Speed -** This option allows the adjustment of speed of the weighframe to match the packaging line. Speed adjustment is made on the front panel of the AC-8000.
- Low Noise Drive Package -** A special motor drive is available for applications requiring ultra-high accuracy weighing.

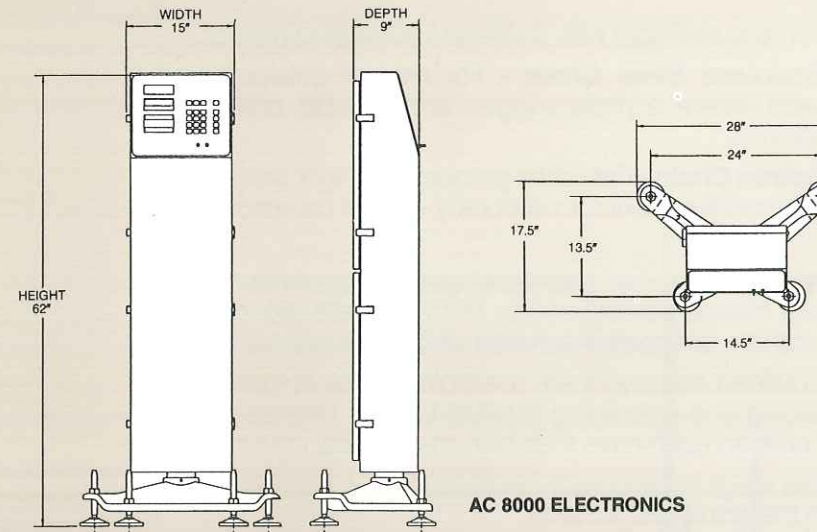
DIMENSIONS



8100 WEIGHFRAME



OUTFEED 8100 WEIGHFRAME INFEEED



AC 8000 ELECTRONICS

SPECIFICATIONS

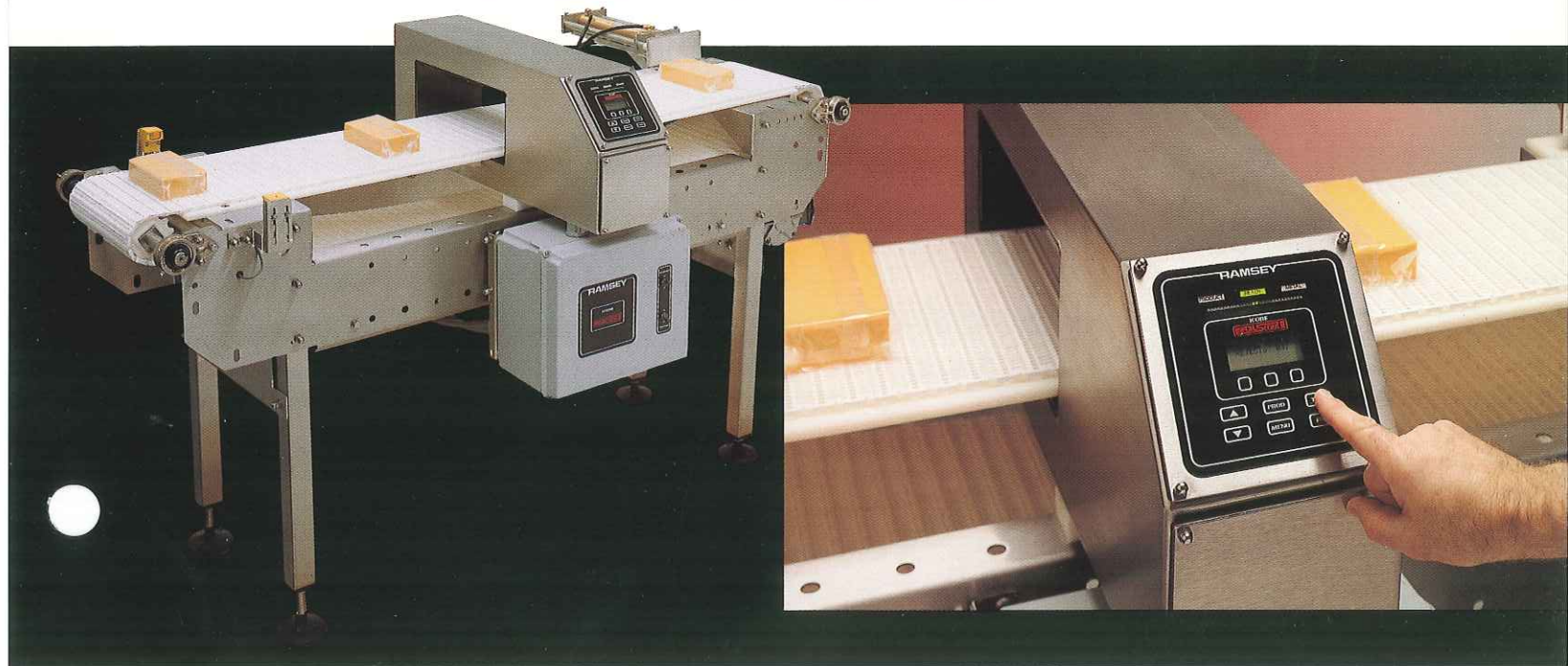
Line Speed	20 to 700 Ft./Min. (6 to 212 m/min.)
Product Rate	To 700 PPM
Weight	0 to 3,000 Grams
Capacity	0 to 7,500 Grams
Maximum Product Size:	
Length	12 in. (305mm), depending on item rate
Width	12 in. (305mm), depending on rigidity
Height	flexible, depending on product stability
Nominal Line Height	Low profile 11 in. (280mm)
Optional	USDA Approved white epoxy paint
Drive Motor	standard 1/4 horsepower permanent magnet motor with variable speed standard.
Weighcell	Strain gauge loadcell; 6000 grams standard; 15,000 grams optional
Environment:	
Electrostatic Discharge	5000V
Temperature	14° to 122° (-10° to +50°C)
Humidity	0% to 95%
Electrical:	
Standard	115 VAC +/-10%, 50/60 Hz, single phase, 300 VA
Optional	220 VAC +/-10%, 50/60 Hz, single phase, 300VA
Maximum Allowable Neutral-to-Ground Potential	3 Volts Peak to Peak
Compressed Air	30 to 40 psi (2.1 to 2.5 Kg/cm ²) for pneumatic devices; or 40 to 80 psi 2.8 to 5.6 Kg/cm ²) for air rejects; dependent on product size and weight, and line speed)

NEW!

RAMSEY'S

METAL SCOUT II

**METAL DETECTOR WITH ENHANCED
"AUTOLEARN" TECHNOLOGY**



Advanced metal detection technology optimizes sensitivity to metal contamination using automatic learning software for easy operator set-up.

The set-up of a metal detector always involves a trade-off between maximizing the sensitivity to the smallest particle of metal contamination and introducing troublesome false trips caused by the "product effect" or by the operating environment. For most metal detectors this means a complicated process of "tweaking" adjustments until just the right settings are found.

Not so with Ramsey's METAL SCOUT II. When the original

only automatically learns the product effect and sets the sensitivity level but also automatically adjusts for the phase effect of the product. This combination means the unit learns and sets itself for even the most troublesome product effects. Now products with high levels of product effect caused by moisture content, high levels of certain mineral salts and compounds can be run with optimum sensitivity, learned automatically and stored in memory for recall.

METAL SCOUT II can store all set-up and individual product parameters in its memory for multiple products. The unit will not allow an operator to select a product that has not been previously learned without going through the autolearn