

MEDICAL MIRACLE

By Bruce Barrett

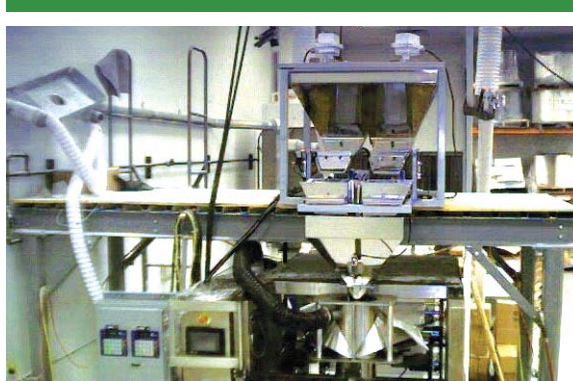
Rockwell Medical Technologies (RMT), of Wixom, MI has developed and marketed a much needed medical treatment for patients with renal failure. These are highly specialized powders for use in kidney dialysis treatment. The product will arrive at the customer's location premixed with a large quantity of water in 55-gallon drums.

Product challenges for RMT included exorbitant shipping costs, excessive storage, and handling requirements. The powders also have high risks including danger to the handler as well as product contamination.

RMT made a change to providing its customers the powders in small bags and then having them add water on receipt at their clinics. A very labor-intensive packaging system was in place with an Auger to fill the bag and a platform tabletop scale to check the weights. A hand-operated sealer then secured the bag. RMT needed guidance in automating their packaging process but was concerned about maintaining accuracy, a critical function of the quality control requirements. At the same time part of the challenge was to adhere to strict budgetary guidelines. They needed to weigh ultra high accuracy of 1/10g for small bags and then weigh 5kg for the larger bags. Normally this would be done with two separate machines but the budgetary constraints made it necessary to engineer a single piece system that could do both.


W-P-L Machinery Sales provided an **ActionPac** ME1095CX2 dual lane scale that performed at the desired accuracy and had the desired capacity. This was engineered with dribble gates to run/mix powders up to 8kg (18 lbs) per lane for medical grade sodium chlorides, 3.5kg for dextrose at the rate of 8 to 10 cycles per lane per minute +/- 2 to 3 grams (> 1/10%) worst case per cycle and 0% average deviation. This was fitted to a VFFS bagger to increase production on the main dialysis items.

Pleased with the results, RMT decided to automate a secondary product. A three part mix of powders was



complicated by extreme hydroscopicity of some of the product, which could only be run in small amounts within a controlled atmosphere before literally "freezing" at room temperature. We provided **ActionPac's** **MINI109CX3**. This is a three lane scale system with special hopper partitions, logic and wiring for blending capabilities.

The system has medium and small size weigh buckets to blend the three products into one bag in the correct proportions with a very high degree of accuracy. Up to 500g powders run at the rate of 10 to 15 cycles per minute, 1/2% per cycle worst case and 0% average deviation. The actual resolution is 1/10g. People's lives depend on it. These bags of blended powders are then sealed on a Steeltex continuous belt sealer. All the contact surfaces are a high-grade of 316 electro-polished stainless steel.

RMT has greatly increased their output and solved their labor and storage issues. Now they are able to package and store the products in an orderly and systematic fashion before shipping. They have subsequently placed an order for an additional system  to be put in place in another location.



MEASURE THIS

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CEO Weighs In

In creating new ideas you have to think outside the box, in our case, literally. By that I mean it's sometimes necessary to rotate a perspective in your head and look at it from a different angle. The hardest part of our industry is the flow control of amorphous products. Whether it is orienting bolts into an escapement or trying to regulate the flow of damp brownies or wet pasta. Fundamentally, every project except those rare cases that are repeats such as coffee beans or dry rice requires invention. But before that we



first have to "see" or imagine that product flowing in our heads. Recently we had to singulate, orient and weigh count tetrahydenal shaped tea bags into standup pouches and tins in batches of 50. We achieved this with a minimum of experimentation, invention and failure, because most of the experimentation, invention and failure was spent on our first ever teabag machine and was refined by the second tea bag machine since our experience allowed us to visualize how this would work. The core technology was then integrated into this machine. Everything we make is based on our experience and if it isn't a repeat product we don't know if it will work or not until we build it and test it.

John
John Dishion 

Product Presentation

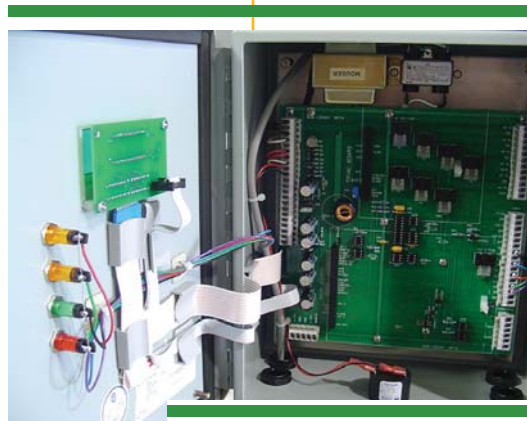
REV. K27


Engineered in-house the K27 controller used in our systems is an industry leader in its design, flexibility, function and use. Now standard to all our systems, those with **ActionPac** machinery built before 2000 may want to consider upgrading.

- All subroutines, set points etc. color coded and labeled on keypad.
- Keypad "Clear" button for mistakes.
- Traces on all boards 10x larger for heavy current applications.
- Four separate, programmable peripheral interface ss relays.
- Five times higher resolution (to 1x100,000).
- Faster updates.

CONTROLLER ADVANTAGES

- All major power (feeder, solenoid, etc.) fused independently. If there is a short, replace the fuse. If the fuse blows again, look for and correct the short (usually water).
- Motherboard easily replaced if necessary: all wires are in numbered terminals.
- Availability of extra outputs and inputs and power circuits more expandable, more versatile. For example, we now have a post event "stretcher" circuit with adjustable duration that can be used to run vibrators, etc. as needed.
- Hopper circuit (for hopper feeders or vibrators) can be controlled digitally, stored into memory.
- Pushbutton calibration.
- Supervisor code protection.



- Flat board design- less space, easier testing, clearly labeled.
- Displays program prompts- lets you know where you are, what you've done, where to go.
- Lever operated wire terminals, easy in/out.
- Embedded, programmable PLC for special applications (bagger, indexer).
- Sealed construction for dust tight or watertight applications.
- Sensor inputs/outputs for powering or integrating with sensors.
- Verification beeper (notifies operator/verifies buttons pushed).
- Brighter L.E.D. display for clear view of program and weight. 

ActionPac Staff Member Sells Systems

immediately set out to learn as much as possible about the **ActionPac** products and the industry as a whole.

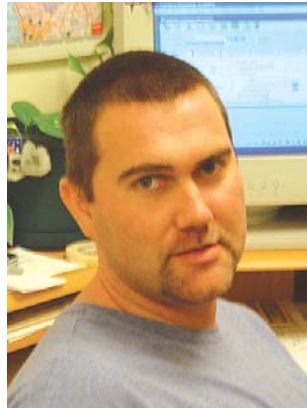
During his tenure here he has become a competent and well-rounded businessman with sales, technical support and assembly management his specialties. He enjoys having the opportunity to accept responsibility, from quote production through closing a sale, to building, and then finally installing the systems.

Appreciating the creativity of our business cycle he explains, "I like taking the big picture review of what the end result needs to be then I work backwards into the best technical configuration required for a particular application. Next, I calculate the projects costs, set the price, build the machine then finally ship and frequently install it myself. The course of producing custom systems usually requires bench testing of designs for the feeders and funnels then experimenting with angles and slopes to determine the best options to meet the customer's always varied requirements."

More creativity is needed when the customer's physical and environmental constraints are incorporated into a project. These issues might include a building's height, integration onto an existing packaging line, special handling needs of the product being weighed, or elevator and conveyor configurations. Also, the package sealer, labeler, and packing machinery must be taken into consideration. Add to this the customer's container choice including cases, bags, laminates, and jars, made of varying plastics, glass, metals or paper all requiring additional modifications.

A recently completed **ActionPac** project requiring lots of innovation and piquing Johnathan's interest was the mining application's flux weighing system. He cites the


ActionPac's Inside Sales Rep, **Johnathan Cantalupo**, was hired in 1997 as a Technical Support Trainee. He



precision engineering of the programmable logic controller (PLC) as particularly exciting. "We developed the system to eliminate the need for an operator to press any buttons. It functions on robotics that control the start and stop of the vial testing, dumping, filling and weighing without any human intervention."

Another project that Johnathan found particularly challenging and requiring technological innovation was an **ME1095CS** filling metal tins with triangular shaped teabags. This required each teabag be singulated down the feeders into a weigh bucket. The teabags then work through a power funnel for another singulation then drop into the metal tin. Because the teabags are dropped loosely into the tin and they hold lots of excess air a plunger system was designed. This pushes them firmly into the tin releasing the excess air in the teabags that took up "costly" space in the container. Before our system was installed five ladies worked in the shop performing this packaging function by hand.

This current business quarter Johnathan sold two systems to a co-packer that had contracted to fill a gummy bear type of children's vitamin, 50 to 500 count into small clear plastic bottles and into one to four count trial size bags. The co-packer has years of experience with all types of weighing and filling machinery and was very exacting about his requirements. To meet their needs with this product we engineered and installed a four-lane system, a **ME1095SX4** and a dual lane system model **MINI109CBX2**. The two-lane system built to process two containers at a time, included double lanes, twin bowl systems, two power funnels, plungers, and jar indexers.

Throughout the process of each project Johnathan takes on he looks for ways to make the business as a whole more efficient. Looking forward to the challenge each new project brings on, Johnathan enjoys being at the forefront of new innovations in the weigh, fill and packaging industry. 

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Projects on the Board

Winds with scattered rains are blowing fiercely now through Oxnard, California and the **ActionPac** project board is moving just as fast. Some of the orders we are currently working on include:

- MICRO109CAB** a sample and flux weighing system for assaying labs in the mining industry to 1/10 mg
- ME1095CS** for weighing corn tortilla chips into bags
- MAX109CLPX2** for the bulk filling of shelled almonds into 50lbs. cases
- MICRO109** for weighing gold and silver plated brass beads into small plastic bags
- E-Z FLOW TWO CONFIGURATION ELEVATOR** for gentle handling of cookies during movement through the current packaging system
- MAX109C W/CUSTOM ELEVATORS** to fill pails with a blended protein powder mix
- ME109** for ground and bean coffee integrated with both a vertical form sealer and Zing-Pac automatic bagger and fitted with a Pneucon vacuum elevator
- E-Z FLOW ELEVATOR** to transport ready to eat meat products from a peeler to a previously engineered and installed ME1095CSX4
- PNEUCON LOADER** to integrate with a recently installed ME109
- ME1095C** for filling bags with dairy powders and solids
- MINI109** a high accuracy 10mg pharmaceutical application with special sealer and validatable zero verification
- ME1095CSDX4** to fill large particulate frozen fruits and vegetables into resealable bags
- ME109CX3** integrated to a vertical form filling and sealer for measuring ground and whole bean coffee in laminate bags

THEME OF THE MONTH

INNOVATION

INNOVATION (inne vay sh'n) 1. origination; the act or process of inventing or introducing something new
2. new idea or method; something newly invented or a new way of doing things

EQUIPMENT MODEL NUMBER CODES:

C	SOMETHING "EXTRA" OR CUSTOM
S	SPREADER FEEDER
L	LANE GATE
B	BOWL COUNTER - WEIGHT
E	BOWL COUNTER EYE
V	INTEGRATED CLEAT "EL" HOPPER
EP	ESCAPEMENT COUNTER
D	DIMPLED STAINLESS STEEL
I	INDEXER
EL	ELEVATOR
M	MILLIGRAM RESOLUTION
EZ	EZ FLOW HOPPER TO ELEVATOR

Example:

MAX109CSL/EZ/EL/I = standard max single lane with spreader feeder, lane gate, EZ flow hopper, elevator and indexer



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