



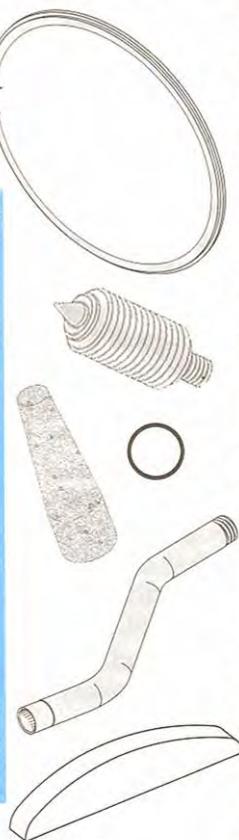
SERVICING PELTON & CRANE STERILIZERS JUST GOT A WHOLE LOT EASIER FOR YOU

RPI developed 10 new PM kits exclusively to fit Pelton & Crane sterilizers. RPI PM Kits include a PM Check List and the parts you need most when servicing these sterilizers. RPI is your best source for parts to fit Pelton & Crane sterilizers.

How many times has this happened to you? Your customer calls with a sterilizer problem. You find that the sterilizer needs a new gasket. You make sure that you have the right gasket on your truck to do the job. You replace the gasket and, at the same time, you notice that the filter and bellows should be replaced or will need to be replaced in the very near future. But, you don't have the filter or bellows with you. You disappoint your customer by having to tell him that you don't have the parts with you. It's a difficult position to be in, isn't it? Not anymore!



When servicing a Pelton & Crane sterilizer, don't just change a door gasket when you can replace the bellows, filter and other critical PM parts at the same time with an RPI Sterilizer PM Kit. The next time you service a Pelton & Crane sterilizer, take along an RPI PM Kit - see page 4.



Here's your solution. RPI created custom PM Kits to fit Pelton & Crane sterilizers. That's right, now you can do the repair and offer your customers the RPI Sterilizer PM kit to help keep their equipment in top running shape. All the parts needed to do a basic planned maintenance are now in one kit and under one RPI part number - RPI puts this conve-

nience right into your stock. What's more, RPI has priced the kits so that it's less expensive to purchase the kits than it is to purchase all of the items in the kits separately! It's the RPI Advantage!

RPI's first sterilizer PM kits fit the Pelton and Crane sterilizers including the Delta 8" and 10", Magna-clave, Sentry, OCM, OCR, OCR+, Validator 8 and 10 as well as the Validator 8+ and 10+. The Kits include a door gasket and, depending on the model, also includes the bellows, filters, o-rings and other necessary parts (see page 4).

We all know that any equipment runs better when it is maintained. In fact, waiting for the unit to fail before doing

planned maintenance just increases the cost of future repairs, returned trips to the customer and the chances for an angry customer. So next time you service a Pelton & Crane sterilizer, be prepared and take along an RPI Sterilizer PM Kit. With the RPI kits, life just got a whole lot easier for your customers ... and you!

RPI TAKES ON A NEW LINE OF PARTS

Marquette MAC[®]12, MAC[®]15, CASE 12, CASE 15, 1800 & 1900 replacement parts are now available from RPI.

As you may already be aware, RPI and GEMS-IT have made arrangements in which RPI is now your replacement parts source for the MAC12 and MAC15 Resting ECG Analysis System since GEMS-IT needed to discontinue parts support for this equipment. And, many of these parts fit the CASE 12, CASE 15, 1800 and 1900 treadmills.

RPI purchased the remaining quantity of discontinued parts from GEMS-IT at close-out prices. As a result, RPI can offer these parts at prices up to 25% less than what you were paying when buying direct from GEMS-IT.

In addition, the same 90 day warranty that GEMS-IT offered will also apply to these parts when purchased through RPI. And of course you will receive the excellent RPI service with parts being shipped the same day if ordered before 2:00 p.m. (Pacific Time), Monday-Friday.

For a complete list of all parts RPI has in stock to fit this equipment, visit www.rpiparts.com/macparts. Use the "Parts Search" feature to list the parts by model, category, or to find specific parts for any of the models listed above.

There is limited stock of these parts. Once the stock is depleted, RPI will not replenish the supply and the parts will be gone forever. So stock up at great prices!



*Ira Lapidès
CEO & President
Replacement Parts Industries, Inc.*

FROM THE DESK OF THE PRESIDENT

As often as I can, I schedule meetings with customers to make sure that RPI is doing well for you and to learn how we can serve you better. Frequently during these meetings, which are sometimes in the form of presentations to groups of technicians, I, or one of RPI's Product Engineers accompanying me to the meeting, will "walk through" the RPI catalog to review the parts that we carry and the equipment that we support.

This is always received well, as we discuss technical features of specific parts or equipment of interest. Surprisingly, a common phrase is uttered in nearly every meeting – "Oh, I didn't know you had that!" Sometimes this is said about some new parts that we have recently introduced, and other times about parts introduced within the past year. Occasionally, it is even said about parts that we have carried for many years.

With the amount of mail that we all receive these days, I can understand some items getting lost in the shuffle, or misplaced in the shop. Often, we might have an incorrect name on our mailing list for your company, somebody who left, and we did not know of the departure. And, admittedly, keeping up the RPI catalog requires a little work, as once every year we mail a set of new pages for you to update your catalog. These pages always show new parts that we have introduced since the last update, as well as other important changes to existing parts.

We think this system works well, as it helps keep our costs down, and thus keep our parts prices down. Printing and mailing a complete set of new catalogs every year would "break the bank". Of course, at any time, we would be glad to send you an updated copy if you need one.

What we ask is very simple, and we think that you will benefit significantly from this – Take 15 minutes every three to six months, and just review the RPI catalog from cover to cover. It will be worth your while because you will find that we offer more than you know or remember. And this will make your parts ordering easier, allowing for more of a one stop shopping source for your business.

For instance, did you know that in the last year we introduced new parts to fit: Steris System 1 scope washers; Midmark exam tables; Adec Century II units; Gomco pumps; and, Hill Rom/Air Shields Infant Warmers, Incubators, and Phototherapy units? Or that in our General Shop Aids Section, we offer a wide variety of power cords and plugs, o-rings, electrical terminals, wire and sleeving, and strain relief bushings and pliers?

The list of discoveries goes on and on. So, if you can spare 15 minutes, take a walk through the RPI catalog. You will be glad that you did – you just might find that one part you always needed, but never knew we carried.

THE RPI FAMILY

Hi. My name is Lara Karaguezian. I was born and raised in Beirut, Lebanon – a beautiful city located on the Mediterranean Sea. I am Lebanese-Armenian and I love to travel.

After being away from our father for about five and a half years waiting for our green cards, my mother, two sisters and I finally reunited with him and immigrated to the United States in October of 1992.

A couple of months later, I began working for A&K, Inc. (dba Leathermode) for seven and a half years. During this time, I met a wonderful man named Vahe, but everyone calls him Vic. We got married a couple of years later and I left that job.

Several months later, I found a great, great company called Replacement Parts Industries and accepted the position of Accounting & Purchasing

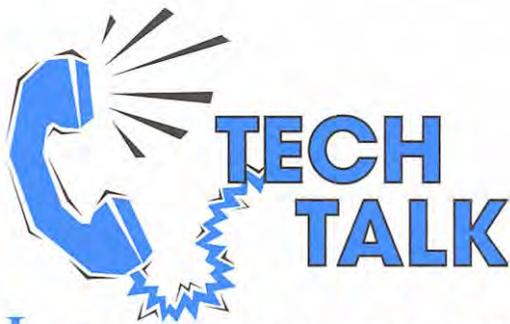


*Lara Karaguezian
Purchasing Assistant*

Assistant. Today, I am the full-time assistant to Purchasing which allows me to spend more time expediting parts to get them to our customers even faster.

My husband and I have a baby boy and his name is Alec. He is our joy, our happiness, and our "destroyer". He loves to get into everything and anything in his way. Alec keeps us very busy.

I would like to thank RPI for giving me the opportunity to join their team.



Let's Talk Statim – Part II

Taking the fear and unknown out of servicing the Statim Cassette Autoclave®

By Jim Wisniewski ("The Dental Guy") RPI, Manager, Product Development

In our previous newsletter, I talked about taking the fear and unknown out of servicing the SciCan Statim cassette autoclave. Because these machines look a little different from a normal steam autoclave, I hear from customers that they are simply not comfortable working on the Statims. Well, the operational theory from a traditional steam autoclave to the Statim cassette autoclave is basically the same, and repair and maintenance are usually easily handled.

The Statim uses a steam generator, also known as the boiler, to create steam, which is then injected into the cassette, which serves the same purpose as a traditional autoclave chamber. The temperature is then monitored via thermocouples, one thermocouple monitors the boil temperature and the other monitors the cassette temperature, not unlike the traditional steam sensor mounted in the chamber. The sterilizer does not monitor the pressure with a device such as a transducer or gauge. Instead, the pressure reading is a calculated value by the microprocessor.

When the cycle is complete, the steam is then vented out of the cassette via a traditional solenoid valve, through exhaust tubing, into a condensation waste bottle. Like a traditional steam autoclave, many of the parts on a Statim are easily maintained or replaced.

For instance, the cassette seal needs to be changed regularly to maintain a proper seal in the cassette, similar to a door gasket. The only difference here is that the seal needs to be lubricated on a periodic basis to maintain its integrity. The solenoid valve mentioned above can also either be replaced in its entirety, or repaired with our solenoid kit which, like most others, includes a plunger, o-ring, spring-coil, and shim. The coil itself can also be replaced.

The Statim also has a fascia gasket on the front of the machine that seals the front cover against the machine. This requires periodic replacement. Other standard parts requiring periodic replacement include the following: microswitch, power switch, keypad, pressure relief valve (located on the boiler), and power cord.

The Statim also contains an air compressor that facilitates the injection of heated air into the cassette. To aid in the drying stage, a check valve protects the compressor from excessive moisture. This check valve requires periodic replacement to prevent a more expensive replacement of the compressor. SciCan recommends replacing the check valve and pressure relief valve at least every two years.

Remember, if the compressor requires replacing, it is likely due to a faulty check valve, so make sure that you replace the check valve when replacing the compressor. RPI makes this easy, as our compressors are sold in a kit that includes a check valve (RPI Part #SCK020).

Additionally, there is a compressor

filter that requires periodic replacement. It is usually a good idea to do this at the same time that you replace the cassette seal.

Around the boiler is a double thermal fuse whose purpose is to prevent overheating. This occasionally needs replacing, and is fairly easy to accomplish.

Finally, RPI sells a Field Service Smart Kit®, that contains many of the tools required to work on a Statim. We introduced this at length in our Fall, 2001 newsletter, and I encourage you to buy one. It will truly make your life easier servicing these machines, and allow you to better



Field Service Smart Kit
RPI Part #SCK028

serve your customers by preventing the shipping of the machine back to the OEM and providing faster turnaround on the repairs. And, of course, it will allow you to capture more revenues in the process.

Most RPI parts to fit the Statim come with easy-to-follow installation instructions. In addition, RPI has an extensive tech support section on our website, but if you are really stuck, you can always call our Tech Support department. We would be glad to walk you through any problem.

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WHAT'S NEW

The following new parts are now in stock, ready to ship the day your order is received.



A-dec Dental Delivery Units

Parts to fit Century II H.P. Control Block

BLACK KNOB SET
RPI PART #ADK171
OEM PART #N/A

BLACK BODY KNOB W/BLUE DOT
RPI PART #ADK145
OEM PART #027-017-00

BLACK BODY KNOB W/YELLOW DOT
RPI PART #ADK147
OEM PART #027-018-00

GRAY KNOB SET
RPI PART #ADK172
OEM PART #N/A

GRAY KNOB W/BLUE DOT
RPI PART #ADK146
OEM PART #027-017-01

GRAY KNOB W/YELLOW DOT
RPI PART #ADK148
OEM PART #027-018-01

Parts to fit Century Plus H.P. Control Block

RED GASKET
(MOLDED; SIDE SCALER BLOCK)
RPI PART #ADG158
OEM PART #38-0550-00

CLEAR GASKET
(MOLDED; SIDE CONTROL BLOCK)
RPI PART #ADG159
OEM PART #38-0507-00

DIAPHRAGM
(TOP CAP .75x1.65)
RPI PART #ADD160
OEM PART #38-0519-00

Parts to fit Most Dental Delivery Systems Including the Century II and the Century Plus

WHITE VALVE BODY REPAIR KIT
RPI PART #ADK153
OEM PART #N/A

BLACK VALVE BODY REPAIR KIT
RPI PART #ADK173
OEM PART #N/A



GOMCO Aspirators & Pumps

Parts to fit Rotary Suction Pumps

5/8" ROTOR SLIDES (3/pkg)
RPI PART #GOS036
OEM PART #01-90-2322

5/8" OIL WICKS (3/pkg)
RPI PART #GOW037
OEM PART #01-90-3067

3/4" ROTOR SLIDES (3/pkg)
RPI PART #GOS029
OEM PART #01-90-2418

3/4" OIL WICKS (3/pkg)
RPI PART #GOW035
OEM PART #01-90-2875

1" ROTOR SLIDES (3/pkg)
RPI PART #GOS038
OEM PART #01-90-0853

1" OIL WICKS (3/pkg)
RPI PART #GOW039
OEM PART #01-90-2876

Parts to fit Diaphragm Suction Pumps

VACUUM GAUGE (300 SERIES PORT)
RPI PART #GOG046
OEM PART #01-90-3059

DIAPHRAGM PARTS KIT (300 SERIES)
RPI PART #GOK043
OEM PART #01-90-2295

More New Parts

DISPOSABLE COLLECTION CANISTER/1100ml
RPI PART #GOC044
OEM PART #01-90-3695

DISPOSABLE COLLECTION CANISTER/2100ml
RPI PART #GOC045
OEM PART #01-90-3712



MARQUETTE Resting ECG Analysis System

Parts to fit MAC12 & MAC15

For a complete list of all parts to fit Marquette Models MAC 12 & MAC 15 visit the website: www.rpiparts.com/macparts. And, many of these parts fit the CASE 12, CASE 15, 1800 and 1900 treadmills.



Pelton & Crane Sterilizers

PM & Other Kits to fit P&C Sterilizers

PM KIT FITS MAGNA-CLAVE®
RPI PART #PCK216
Includes door gasket, bellows, air-valve o-ring, filter fill line, & filter w/cotter pin

FITS MAGNA-CLAVE®
RPI PART #PCK226
Includes filter with cotter pin

PM KIT FITS SENTRY
RPI PART #PCK217
Includes door gasket, bellows, air-valve o-ring & filter fill line

PM KIT FITS OCM
RPI PART #PCK218
Includes door gasket, bellows, air-valve o-ring & filter fill line

PM KIT FITS OCR & OCR+
RPI PART #PCK219
Includes door gasket, bellows, air-valve o-ring & filter fill line

PM KIT FITS VALIDATOR® 8
RPI PART #PCK220
Includes door gasket, bellows, air-valve o-ring, door spacer & filter fill line

PM KIT FITS VALIDATOR® 10
RPI PART #PCK221
Includes door gasket, bellows, air-valve o-ring, door spacer & filter fill line

PM KIT FITS VALIDATOR® 8 PLUS & DELTA 8
RPI PART #PCK222
Includes door gasket, reservoir filter kit, door spacer & filter fill line

PM KIT FITS VALIDATOR® 10 PLUS & DELTA 10
RPI PART #PCK223
Includes door gasket, reservoir filter kit, door spacer & filter fill line

BELLOWS KIT FITS OCM, OCR, OCR+, SENTRY, VALIDATOR® 8 & 10
RPI PART #PCK224
Includes bellows, bellows cap & air-valve o-ring

FILTER & TUBE KIT FITS DELTA 8 & 10, OCM, OCR, OCR+, SENTRY & ALL VALIDATOR® SERIES
RPI PART #PCK224
Includes bellows, bellows cap & air-valve o-ring



By Phil Goldstein & Andy Sandelski
RPI Product Development

TABLE TOP STERILIZERS: MANUAL VS AUTOMATIC

The newer automatic type sterilizers basically work on the same principle as the older manual machines. Following are some of the similarities between the two types:

- Sterilization cycles are between 250°F (121°C) and 270°F (132°C).
- Water is stored in a reservoir and a condensation coil takes steam after each cycle and condenses it back into water.
- Both types of sterilizers utilize a triac to supply the high current to the heaters.
- A mechanical or electrical (solenoid valve) air bellows is used to maintain the saturated steam inside the chamber.
- Output devices such as gauges (manual) or LED displays (automatic) are used to display temperature and pressure.
- Mechanical timers (manual) or programmable timers (automatic) are used to monitor the length of the sterilization cycle.
- Safety devices for pressure (safety relief valves) and temperature (bi-metallic or snap action switches) are incorporated on both types of sterilizers.
- Door gaskets are used to seal the chamber of the sterilizer.
- Mechanical valves (manual) or solenoid valves (automatic) are used to fill the chamber of the sterilizer.
- Filters to filter the water to the chamber from the reservoir and from the chamber back into the reservoir.

Everything You Always Wanted to Know About Table Top Sterilizers, But Were Afraid to Ask

Some of the added features an automatic sterilizer has that are not found on the manual units:

- Self-diagnostic software.
- Display codes to assist you with troubleshooting the unit when it will not sterilize properly.
- Heater circuit is microprocessor controlled and automatically changes from FILL to STERILIZE to DRYING cycle and powers down at the end of the drying cycle.
- Timing circuits that actuate solenoid valves to allow a premeasured volume of water for each cycle. Thus eliminating operator errors in filling the chamber.
- Additional electronic surface temperature monitoring to prevent damage to the chamber because of low water conditions.
- Dams or water guards that prevent condensate from dripping on counter tops.
- Additional solenoid valve ports to expedite the venting of the sterilizer.
- Automatic door release feature (pulse solenoid latch) to prevent wet packs from occurring because the door was not cracked open.

TABLE TOP STERILIZERS: MANUAL

We will reference the "Omni-Clave" line of manually operated sterilizers by the Pelton-Crane company for our "Theory of Operation" for all non-electronically controlled sterilizers. The "Omni-clave" line was introduced for the doctor's office in the early 1960s. Three chamber sizes were available – 6, 8 and 10 inch to accommodate everything from handpieces to wrapped instruments.

Simplicity in design. Ease of Operation. The success of the Omni-Clave line is partially due to their simple mechanical construction.

There aren't any "bells and whistles" on these sterilizers. Everything is straightforward. A stainless steel water reservoir is used to store the distilled water required for steam. The water reservoir is connected via 5/16 copper tubing to the main valve. The main valve controls the direction of the distilled water entering the sterilizing chamber prior to the sterilization cycle, and vents the steam back into the water reservoir after the sterilization cycle is complete. In addition to controlling the direction of water and steam, the main valve is directly connected to the Power and Function switches that control the electrical characteristics of the machine. All performed by simply turning the control knob on the front panel.

Theory of Operation. The operator fills the water reservoir with distilled water and replaces the cover. The items to be sterilized are placed into the holding trays. The control knob on the front panel is turned to the FILL position. This does two things. It applies line voltage across the three heating elements and allows the chamber to pre-heat. At the same time, water enters the main chamber through the main valve to a predetermined level.

Once this level is reached, the control knob is turned to the STERILIZE mode and the door is closed and bolted shut. When the main valve is in the STERILIZE mode, the valve closes off the FILLING port to the main chamber and at the same time applies total line voltage to the center heating element only. The two outside heating elements are not energized in the STERILIZE mode. A mechanical timer is set by the operator for the duration of the STERILIZE cycle (30 minutes). Since the

(continued on back page)



8 to 4
NO MORE

Sherry Lapidès
Vice President, Customer Relations
Replacement Parts Industries, Inc.

When we founded RPI thirty-one years ago, we had no idea whether or not a company supplying parts to the medical and dental repair industries would work or not. As a matter of fact, in 1972 there weren't very many independent repair people around and there really weren't many doing repair work in hospitals.

Things have certainly changed over the past 31 years in the healthcare industry. For example, planned maintenance has become an integral part of servicing equipment; hospitals are outsourcing more equipment maintenance and repair; clinical engineers and biomed are asked for their input with respect to purchasing decisions for their hospital; and, many of our best customers who started out working for an OEM are now independent service providers.

And while the industry has been growing and maturing, RPI has too. From a small, sub-leased space in 1972, we have expanded to using every inch of close to 9,000 square feet, and will probably need to move again in a few years. And our list of inventory items has grown at an incredible rate, as has the number of OEM equipment that we have parts to fit now.

From the very beginning we set out to make RPI a good place to work. I think we have succeeded as many of our employees have been with us through most of this growth. As happens with many small, family-owned businesses, we have a second family at the office – one with whom we have also shared births and deaths, weddings, graduations and other life cycle events.

Phil Goldstein, project engineer, has been with us the longest – 22 years. Andy Sandelski, also in product development, just celebrated his 15th anniversary with RPI. Lisa Link, in the Shipping/Warehouse Department, has 13 years here and her co-worker, Maria Cortez, recently celebrated her 10th year at RPI. In fact, we had a double 10 year celebration for Maria and Joan Woodlock, Vice President of Marketing and Customer Service.

Dora Aguirre, Manager of Customer Service, is coming up on her 10th anniversary, as is Ron Cain of our Quality

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THE OLD LEVEL PLAYING FIELD

Al Lapidès
CEO Emeritus & Chairman of the Board
Replacement Parts Industries, Inc.

Just when you thought the old playing field was nice and level, along comes another court challenge by an OEM against an independent. This was a case brought by Karl Storz Endoscopy-America Inc. (Storz) against Surgical Technologies Inc. (Surgi-Tech).

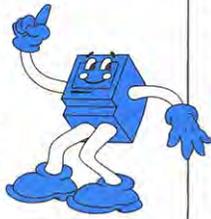
The repair company, Surgi-Tech, was receiving damaged endoscopes directly from hospitals for repair. Apparently, some minor modifications were made, but no relabeling was done to identify that it was no longer exactly like an original Storz. There were problems with the machines, and doctors complained. Storz claimed innocence since someone else had repaired them. Since Storz was getting bad PR because of this, they sued. They lost in trial court, but won on appeal. They won on the basis that there had been trademark infringement, not patent infringement.

What does this mean to the industry? Well, I'm not a lawyer, so I can only give you my perspective. If you should modify anything, be sure you haven't trampled on somebody else's patent or trademark.

I suggest that you read the article on this case written by Gordon Arnold, an intellectual property lawyer in Houston. The article was published in the Fall, 2002 Journal of Clinical Engineering.

Unfortunately, no action was taken on this case by either IAMERS or SIA because each of those associations is too small with limited financial strength to speak for our industry. Membership in these associations is less than 6% of the independent and multivendor companies. Their charter is to ensure your ability to do business. Help yourself by helping them do the necessary work to keep a level playing field.

RPI Website Wonders



Two new features have been added to the RPI website. The first is a mini-site dedicated to the parts that RPI carries to fit the **Marquette MAC®12, MAC®15, CASE 12, CASE 15, 1800 and 1900** equipment. To reach this website, use this address: www.rpi-parts.com/macparts.

And, the second new feature is an icon that will take you to a **PM CheckList** developed by RPI for parts that fit Pelton & Crane sterilizers: **OCM, OCR, OCR+, Delta 8" and 10", the Validator series, and Magna-Calve**. Click on one of the part's illustrations pages, such as RPI Part #PCK216 through PCK223. At the bottom of the page, click the PM icon for the RPI PM CheckList. It's easy to keep these sterilizers in tip-top condition with the RPI PM icon. It's the RPI advantage!

8 to 4 No More

(continued from page 6)

Control Department. In addition, Budd Ford, Ira Lapides, Blanca Miramontes, Chris Stout and Jim Wisniewski (and by the way, congratulations to Jim on his promotion) all have celebrated at least their fifth anniversary with us. We hope the rest of our people will be able to celebrate anniversaries with us too.

All of us take great pride in the work that we do here at RPI. We believe we are filling an important need. Together we hope that we are making a difference.

I would like to thank everyone at RPI for their friendship, loyalty, hard work, and team spirit. And I definitely would like to thank you, our customers, for making it all possible. We could not do it without you.

Shows and Conventions

RPI will be attending the following shows and conventions this year. We look forward to seeing you there! For information about each of these shows, please refer to their websites.

April 25 - 27, 2003
California Dental Association
RPI will be at booth #777
www.cda.org

June 14 - 17, 2003
AAMI
RPI will be at booth #517
www.aami.org

August 20 - 21, 2003
FIME
RPI will be at booth #730
www.fimeshow.com

October 8 - 10, 2003
Medical Dealer Expo
Booth # to be determined
www.mdpublishing.com

Motor Stickers Help ID Parts

Have you ever had a difficult time trying to figure out which brushes go with which motors? Well, if you have, you are not alone.

So to help you identify the correct RPI brushes and caps that go with which RPI motors, you will find a silver metallic sticker on each RPI motor. The sticker indicates the RPI part # of the motor as well as the corresponding RPI brushes, brush caps, and brush carrier that fit the motor.

With the sticker right on the motor, there's no more guess work or having to look up a part number to figure out what you need when replacing any of these parts on RPI motors. It's the RPI advantage!

Big Congrats Are In Order!

Congratulations to RPI's Jim Wisniewski who was recently promoted to Manager of Product Development. Jim's new responsibilities include overseeing both the product development and configuration management departments.

Jim has been with RPI for almost seven years and many of you know him as "The Dental Guy". Don't worry, Jim will still be involved in developing dental parts and available to you for technical assistance.



*Jim Wisniewski
Manager, Product Development*

For Better Performance

Here's an update on some parts:

Handpiece Control Block (RPI Part #ADK142) Face plate and set screw are tighter to prevent air/water leaks.

Valve Stem Needle (RPI Part #ADS007) Improved water shut-off feature to cut water flow completely.

Valve Core (RPI Part #ADV001) Has a red band seal instead of the black.

"L" Transfer Arm Assembly (RPI Part #ATA617) Knurl now has wider diameter to better fit mating gear.

Gear (RPI Part #PHG012) Now made with chamfer for easier installation.

Right-angle Power Cord (RPI Part #TUC028) Increased length of female plug to provide better connection to unit.

About Sterilizers

(continued from page 5)

timer is not a switching mechanism, it only signifies when the set time is up. It is the responsibility of the operator to go back to the machine and turn the control knob to the VENTING position. This in turn opens the VENT side of the main valve and allows steam to vent back into the water reservoir. Once again the line voltage is divided equally by the three heating elements. The operator opens the door just slightly, resets the timer and allows the instruments to dry. When the DRYING cycle is complete, the operator turns the control knob to the OFF position, which shuts off all power and closes the main valve.

Components. The thermostat control system consists of a 1 meg ohm thermistor and a solid state pc board which is triac controlled. The thermistor operates under the negative heat coefficient property. The higher the temperature rises the lower the resistance of the thermistor. At room temperature the thermistor should have a range between 1.3 meg and 900k. At peak sterilizing temperature (270 °F) the thermistor resistance drops to approximately 17-18k.

There are two safety devices on the machine. One is a bimetallic over-temperature switch located on the center heating element. This is an adjustable thermostat used to open the circuit to the heating elements

when the temperature inside the sterilizing chamber rises above the set temperature. In conjunction with the over-temperature switch, an over-pressure safety valve is plumbed into the sterilizing chamber and will open to release pressure between 33 to 35 psig.

Another area of importance is the bellows and bellows housing assembly. If you remember during the FILL cycle the main valve is dumping water into the sterilizing chamber while the three heating elements are warming up the chamber. As the chamber warms up, cold air is pushed out through the bellows housing. When the air gets hot enough, the bellows expands and closes off the valve and allows the system to pressurize. During the VENTING cycle everything operates in reverse. The main valve is opened, the sterilizing chamber vents through the condensation coils in the water reservoir. When the pressure is released and the air cools, the bellows contracts to its original size.

HOW MICROPROCESSOR CONTROLLED STERILIZERS REGULATE FOR PROPER STERILIZATION

The automatic microprocessor controlled sterilizers basically monitor the steam temperature and the inside chamber pressure. These two parameters are measured with solid state devices that are mounted in the chamber for steam and on a PCB

(Printed Circuit Board) for pressure.

The steam sensor is a hybrid IC that is an active device that utilizes a 5V DC supply and sends an output of 10 mV/°C or °F to the MPU (Microprocessor Unit). A pressure transducer receives the steam pressure via a tube connected from the chamber and sends a millivolt signal to the MPU. Most microprocessor type sterilizers usually regulate by the pressure parameter simply because some pressure devices can regulate within 3-5 KPA (~1 PSI). Sometimes a third parameter is utilized to monitor the surface temperature of the chamber to prevent damage to the chamber or heater in case of low water conditions. This device sends a signal to the MPU and is usually electro-mechanical or solid state (RTD). All gains on the PCB are preset to match the requirements of the MPU.

When any of these three signals do not correspond with the information the sterilizer (MPU) is programmed to see the unit will alarm and will abort the sterilization cycle. If all three parameters are within the programmed range of the sterilizer (MPU) the unit will successfully complete a sterilization cycle.

RPI STERILIZER KITS

In closing, I would like to suggest that you take a look at our new Sterilizer Kits to fit the Pelton & Crane sterilizers – see page 4.

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