



RJR TECHNOLOGIES INC. OVERVIEW OF RJR ISOTHERMAL SEALING SYSTEMS

RJR's Semi automated Sealing System (ITS) offers an affordable sealing solution for ease of package assembly to control consistency of the package assembly (controls the X, Y, Z locations of the lid to package) and its patented isotherm seal process was invented to eliminate leaks caused by pinholes or blowouts.

The ITS system is simple, durable, and designed to produce quality package assemblies with high production yields. The Model 400, 500 and 600 units are the major workhorse units being used and are in operational use in all regions of the world.

Depending on the Customers package design, sealing reliability requirements and desired UPH, the RJR design team would then recommend the best economic "ITS sealing system" to achieve the Customers desired goals.

The Design

The sealing system can be designed to assemble packages in: lead frame, array or singulated package formats. The sealing system comes preprogrammed with the appropriate sealing process that is custom tailored for the customer's specific application to insure it will meet the customer's reliability and performance requirements. In order for RJR to develop the proper sealing process and related sealing cycle, the customer is required to supply RJR with minimum amount of packages and Lids (unless RJR is the supplier of either: the package; lid; or both) samples for RJR to develop the proper sealing cycle.

The sealing systems can be designed to seal various package configurations. Additional package can be sealed by just purchasing a different set of sealing plates, but **Please note: "the unit cannot be designed to handle any and all package and lid designs you desire in the unit you purchased"**. The piston locations designed and lay out in the initial design of the unit and their will dictate the part geometries and part quantities that can be assembled in the unit for any other design.

Since the number of packages to be sealed at the same time is limited by the first design, it is advantageous for the customer to discuss all the potential packages to be sealed by the sealing system in order for RJR to maximize the system's flexibility in sealing other designs. Additional plates to handle other part geometries are priced separately. At your election, the unit can come with a nitrogen purge system at an additional charge.

Purchase of the unit comes with a free 2-day training session at our facility in Oakland CA. Training can also take place at your facility or the customers assembly house of your choice for an addition cost, which is based on RJRs air travel, and travel related expenses.

General Specifications for all ITS sealing Systems:

All tooling tolerances will be based on the part drawing and the actual manufactured samples. All tolerances will be +/- 0.003" – or - +/- 0.076mm using the physical part. RJ in-strip products require higher tolerance accuracies, therefore the cost associated with these designs are more expensive. This will be reflected in the quotation.

The customer will need to supply RJR 50 packages in order for RJR to dial in the seal cycle for the customer's application. If RJR is the supplier of the packages and or lids, then RJR will supply them.

A True Turnkey solution:

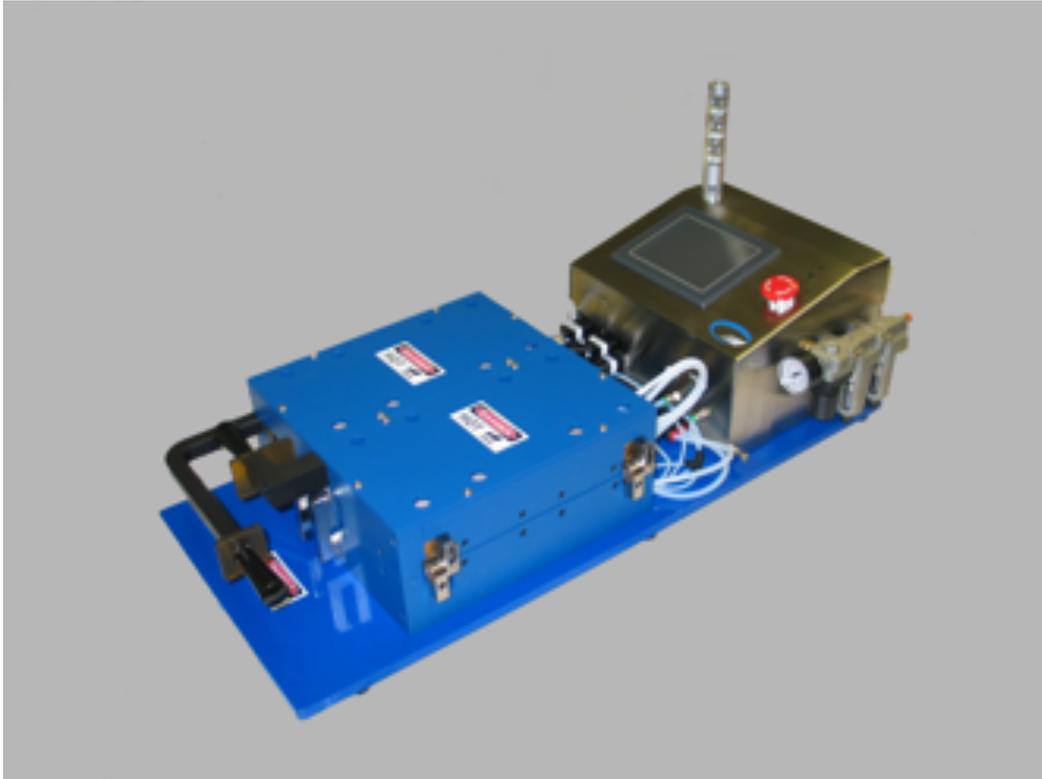
The sealing cycle for each designed purchased (number of sealing plates), at the time the sealing system is ordered, will be preloaded into the sealing system. The sealing system will be ready to be used once the sealing system is uncrated, has electrical power, pressure and vacuum lines connected. Just heat up the unit, select the program from the stored program files and start the process. If you have any question regarding your product after it has been sealed, please contact your RJR Representative for specific details related to your application.

MODEL 400 ISTOTHERMAL SEALING SYSTEM



The ITS 400 is the smallest unit we sell. It comes in two different sizes: a 5 by 5 and or 6 by 8. It is manually: Open / Close; and Load / Unload for the parts to be sealed. The sealing cycle is preloaded and is an automatic repeatable process. The Unit comes with transfer tooling, to assist the operator in doing the manual load and unload functions. The transfer tooling is comprised of two parts – the vacuum pick up head and the cold loading plate. While the unit is sealing parts, the operator can take the lids off the reels and load them into the cold plate. Then at the end of the sealing cycle, the operator first uses the transfer tool to unload the sealed packages and then uses it to load the lids into the unit. The packages are generally loaded one by one because of the die and wire bonds need to be protected. There are exceptions to this rule but it's dependent on the package configuration

MODEL 500 ISTOTHERMAL SEALING SYSTEM



The ITS 500 is the midsize unit we sell. It comes in one sizes: a 10 by 10. It can be custom designed for a different (smaller) size, but cannot be larger than a 10 by 10. It is manually: Open / Close; and Load / Unload for the parts to be sealed. The sealing cycle is preloaded and is an automatic repeatable process. The Unit comes with transfer tooling, to assist the operator in doing the manual load and unload functions. The transfer tooling is comprised of three parts – the vacuum pick up head and two cold loading plates. While the unit is sealing parts, the operator can take the lids off the reels and load them into the cold plate. Then at the end of the sealing cycle, the operator first uses the transfer tool to unload the sealed packages and then uses it to load the lids into the unit. The packages are generally loaded one by one because of the die and wire bonds need to be protected. There are exceptions to this rule but it's dependent on the package configuration.

MODEL 600 ISTOTHERMAL SEALING SYSTEM



This is the largest unit we sell at this time. It comes in one sizes: a 10 by 14. It can be custom designed for a different (larger) size, but at this time, the largest unit we have built a 10 by 14. It has a **fully Automated Open / Close function**, but the **Load / Unloading** of the parts to be sealed is still **Manual**. The Unit comes with transfer tooling, to assist the operator in doing the manual load and unload functions. The transfer tooling is comprised of three parts – the vacuum picks up head and two cold loading plates. While the unit is sealing parts, the operator can take the lids off the reels and load them into the cold plate. Then at the end of the sealing cycle, the operator first uses the transfer tool to unload the sealed packages and then uses it to load the lids into the unit. The packages are generally loaded one by one because of the die and wire bonds need to be protected. There are exceptions to this rule but it's dependent on the package configuration.

OTHER TERMS AND CONDITIONS

Terms of Purchase

- Sales terms: 50% upon placement of the order, 40% prior to the unit being shipped and the balance Net 30 Ex Works. All off shore companies are required to issue a standby letter of credit for 50% of the purchase price on terms and conditions acceptable to Seller.
- All prices shown are in USD \$.
- This quotation expires within 60 days of the quotation date.
- All sales are subject to RJR's Standard Sales Terms and Conditions (copy attached).

Delivery

- Lead-time for sealing system is typically 12-14 weeks from the receipt of the PO, the required test packages, final design selection and approval and the required 50% purchase deposit, whichever is received the latest. The actual shipping date will be determined at the time the last item has been received.
- All Sales are subject to California State Sales Tax for equipment purchases for use in the State of California. If the unit is intended to be used outside of the State of California, then the customer is responsible for tax liabilities in their respective state or country. In order for the customer to prove the sealing system is not subject to California Sales tax, they will have to use a Common Freight carrier for the unit to be shipped outside the state. Otherwise, RJR will charge sales tax on the sale.

Shipping

- If RJR is required to ship the unit internationally, the customer needs to provide a designated Freight forwarder and Tax I.D. for customs clearance.
- Shipping is Ex Works, RJR Oakland, CA

Ball park Pricing for the system:

The final price is dependent on package sealing requirements, so the following are just ball park estimates and generally can be relied on, plus or minus 15%.

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| • Model 400 | Low of \$30,000 to a high of \$ 50,000 |
| • Model 500 | Low of \$50,000 to a high of \$70,000 |
| • Model 600 | Low of \$85,000 up to \$100,000 |

Other Additional Features not included in the base system

Nitrogen Purge System -Depending on the model \$ **4,000.00 to \$10,000.00**

Bottom Vacuum System- Depending on the model \$ **4,000.00 to \$8,000.00**

Formal Quotation will be issued upon Unit selection and Part selection