



**HIGH-SPEED AEROSOL  
SYSTEMS**

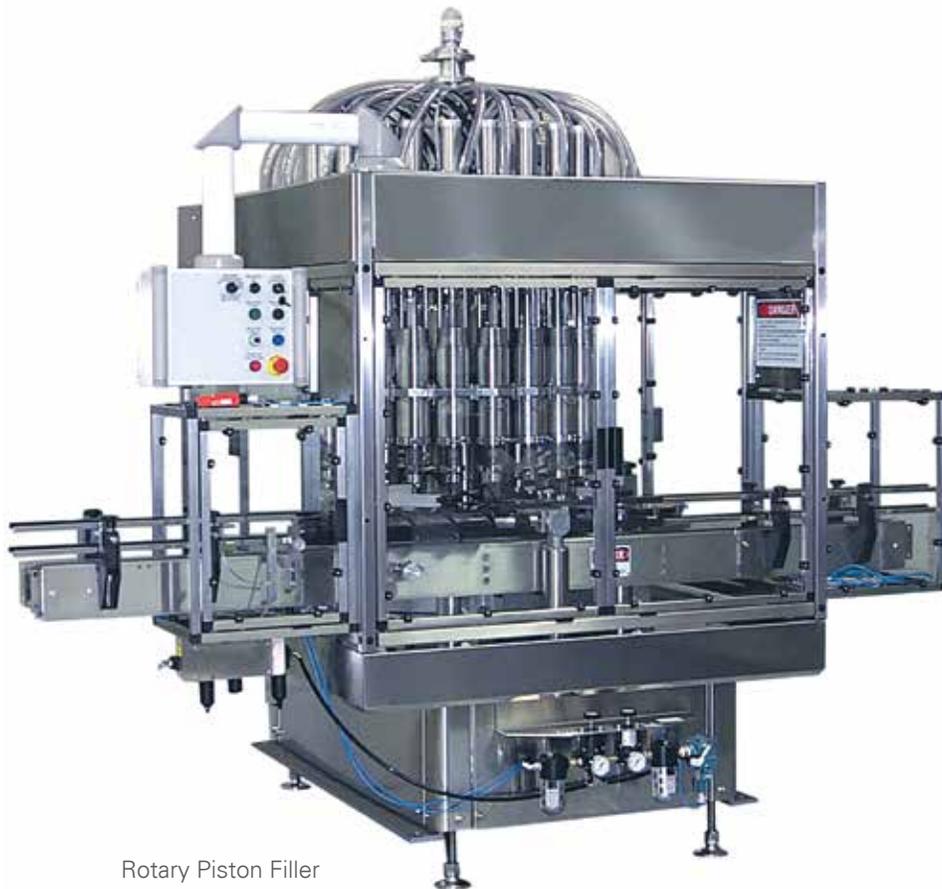
KP-Aerofill Machines

# KP-AEROFILL: A WORLD OF EXPERTISE

For more than 50 years, the KP-Aerofill brand from R.A Jones has stood for innovation and market leadership in the production of precisely engineered and durably constructed aerosol and rotary liquid fill systems; rotary base aerosol crimpers, gasser/shakers, propellant and liquid fillers.

Worldwide leadership in complete line integration has further elevated our reputation as preeminent problem solvers. Industries as diverse as food and personal care; automotive and chemicals; household products and pharmaceuticals routinely seek the counsel of KP-Aerofill applications engineers to maximize the efficiency and productivity of their packaging operations.

Whether you require a single piece of machinery or fully integrated packaging lines, you can rely on our KP-Aerofill brand and R.A Jones for problem-free installation, supervised start-up and on-going training assistance, as well as 24/7 parts support and technical service. With representatives nearby on six continents, we are always accessible and dedicated to serving your needs.

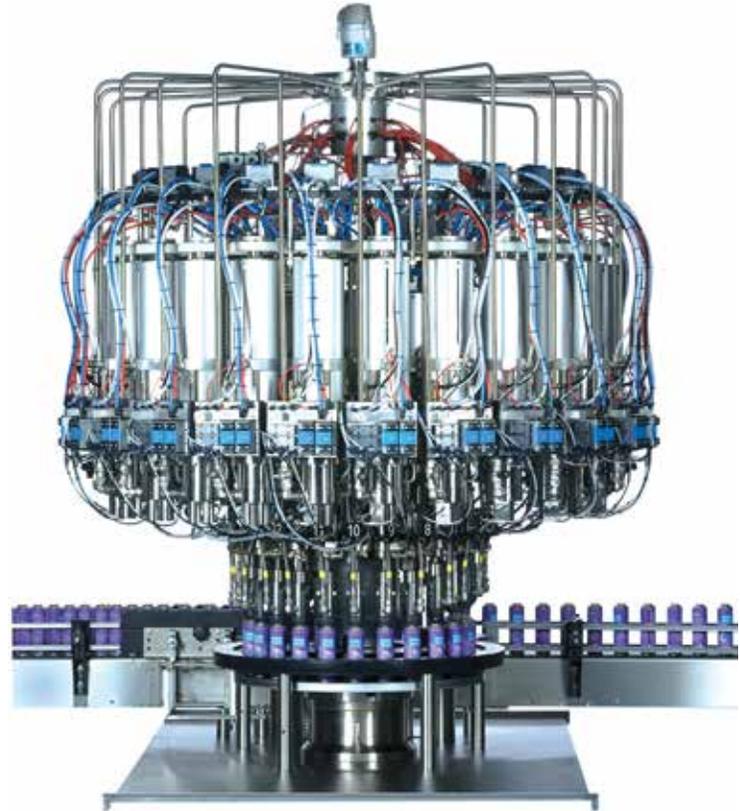


Rotary Piston Filler

# ROTARY PAK

The range of KP-Aerofill Rotary Filling and Closing machines have a worldwide reputation for efficient and reliable 3-shift continuous operation. The machine can be offered in a number of sizes giving a wide choice of output speeds, each able to handle the complete range of container and volume options.

Speed Range (CPM)	Product Fill	Valve Insert	Crimp	Propellant Fill
Up to 120	6	9	6	6
Up to 180	9	18	12	9
Up to 240	12	18	12	12
Up to 320	18	24	16	18
Up to 500	24	36	24	24



## Features

- Individual or Monobloc formations for compact layout
- ATEX positive displacement product and propellant filling rams with single seal for increased reliability accuracy and lower life-time costs
- 316 stainless steel product contact parts and thick chrome coated pistons
- Simple pneumatic logic circuits
- Air powered working heads
- Positive pick and place valve insertion
- Diptube containment to ensure correct placement of curly dip tubes
- Bag-on-Valve and Diptube-less valve capability with appropriate sorting system
- Crimper 'One Click' tool free, positive, independent adjustment of diameter and depth
- Powered height adjustment
- Gang adjustment for product and propellant rams
- Up to 500 cpm

# ROTARY PISTON FILLERS

## Versatility In Product, Container & Production Rates

KP-Aerofill Rotary Piston Fillers are designed and constructed to handle abrasive, caustic, free-flowing, or viscous products (up to 15,000 centipoise) that are warm or cold for the personal care, cosmetic, food, chemical, automotive, and household industries.

Rapid changeovers provide more production time and the durable construction assures long service life, especially in harsh environments. The small Rotary Piston Fillers can be equipped with 6 or 12 filling heads and can be easily converted in the field. The large base Rotary Piston Fillers can be equipped with either 18 or 24 filling heads providing maximum flexibility regardless of the product you are filling.



Convenient access to all grease fittings reduces maintenance in both parts and labor.

## C.I.P. Sanitary Fillers

For food, pharmaceutical and other filling applications where bacterial control must be maintained, the KP-Aerofill Liquid Filler offers a design that fully complies with the 3-A Sanitary Standards Administrative Council. This adaptation utilizes a larger product supply bowl eliminating the need for flexible hoses. The design also enables spray ball "C.I.P." procedures assuring easy and effective cleaning between runs.

All major features for the standard design of the KP-Aerofill Liquid Filler are incorporated to ensure trouble-free operation in applications where sanitary foaming and rinsing are practiced. The standard level control design is replaced with a simple and reliable electronic level controlling device. And all product contact parts are made from 316 series stainless steel, except for the UHMW nozzles, which are coupled to the product flow pipes with sanitary tri-clamp fittings and Teflon O-rings.



Standard level controls are replaced with simplified electronic level controlling device.



The C.I.P. Rotary KP-Aerofill AE-600 meets all 3-A Sanitary Administrative Council standards for cleanliness and bacterial control. The Electronic No-Container No-Fill (ENCNF) System detects the presence of a container for each head. If a container is not present, the system prevents the dispensing of product eliminating waste and reducing costs.

# ROTARY LIQUID FILLING MACHINES

The Electromatic (KP-Aerofill AE-600) Liquid Filler Sets Industry Standards for Productivity, Reliability & Economy of Operation

The KP-Aerofill AE-600 Filler machine from R.A Jones features multiple fill heads and is designed to provide accurate and precise fills for a wide variety of liquid products. Digital fill head timers allow precise settings and consistent repeatability. Fill head settings can be saved and recalled reducing machine set-up time and a calibration program provides quick set-up configurations when new products are filled.



## Superior Engineering & Unmatched Application Expertise

The machine display screen for the KP-Aerofill AE-600 Liquid Filler provides lot information describing machine performance, including total number of containers filled, average running speed, and total downtime. Context-sensitive “HELP” screens are also provided simplifying maintenance, troubleshooting and changeover procedures.

## The KP-Aerofill AE-600 Simplifies The Filling Process

The timing worm carries containers to the infeed end of the machine. The worm spaces the travel of the containers providing one to each pocket of the starwheel. As the infeed starwheel turns, the containers are transported across the deadplate to the rotary dial. Here, the infeed starwheel discharges a single container directly under each head of the machine.

As each container is positioned on the dial, a timer is activated signaling the air cylinder head to actuate the filling process. As the filled container continues around the machine, the discharge starwheel pulls it off the rotary dial. As the machine rotates, the process continues until the fill timer runs out.

A unique “bowl empty” feature allows accurate fills until the remaining product is just above the nozzles in the fill tubes minimizing product waste at the end of the run.

# VALVE INSERTING & CRIMPING

Designed for Simplicity and Proven Performance

The Rotary Valve Crimper operates on a continuous rotary motion principle. Intuitive and robust hydraulic/mechanical operation eliminates the need for complicated control systems for complete head operations.

Containers are elevated via cam action. The container contacts the crimper head while it rotates around the machine. Upward motion of the head opens vacuum ports to evacuate the container. Further upward motion of the head engages the valve cup loading springs for proper valve cup preload.

A hydraulic center valve actuates the crimping function as the machine rotates through the crimping position.



Rotary Valve Crimper

## Automatic and Complete Valve Placing System

Aerofill's continual leadership in defining and meeting challenging needs in automatic valve placer systems has resulted in today's highly efficient units. It's prove

### Features

- It can be integrated into any line with continuous container flow
- It handles all one-inch diameter valves with or without dip tubes, with or without button, at speeds from 50 CPM to 500 CPM
- If a line backup occurs, or if containers or valves do not enter the system, the valve placer system automatically stops
- When normal operating conditions are restored, the system restarts automatically
- Changeover between containers is easy with a simple feedscrew change and powered height adjustment
- The system is electronically driven and controlled
- Operator touch screen HMI

## Crimper Head Features

- Pre-loaded springs compensate for irregularities in container height.
- The outer bell locates the container under the crimping collet and performs the vacuum porting function. Following this phase of operation, the can and the outer bell move upward and seats the collet in the container opening, then crimps the valve into place.
- The outer bell lever holds the outer bell to the inner bell assembly. Pushing the lever allows the outer bell assembly to be removed without tools.
- A double-acting hydraulic cylinder provides efficient, powerful crimping.
- Sliding vacuum seals provide protection from the atmosphere during the vacuum phase of operation.
- A hardened collet plunger, driven by the double-acting hydraulic cylinder, expands the collet at the crimping.
- Six and eight segment collets are available.
- A container dome seal is employed to seal the container, allowing a vacuum to be drawn in the container.
- Locator rings accommodate different container diameters and can be changed without tools quickly and easily.

## Innovative Bag-on-valve Technology

Over the years KP-Aerofill customers have been challenged with producing Green Environmentally friendly aerosol products. KP-Aerofill's Pressure Crimper has played a key role in helping our customers become more environmentally responsible in their process of how aerosol products are produced.

## Customer Benefits

**Greater flexibility for hard-to-solve crimping**

**Faster line changeover**

**External adjustable depth and diameter**

**Substantial increase in production rates**

**Easy maintenance and upkeep**

**Accommodates all CSPA and standard-millimeter-size containers**

**Reliable R.A Jones total systems support**

## Applications include, but not limited to:

- Continuous-spray sunscreens and sunless tanning systems
- Shave gels
- Creams
- Air fresheners
- Insect repellent
- Household cleaners
- Many other pharmaceutical and cosmetic products

# ROTARY PROPELLENT FILLING MACHINES AND EQUIPMENT

Our TTV Pressure Filler Is Designed For Your Rapidly Changing World

Efficient aerosol production has taken a giant leap forward with widespread use of Through-The-Valve (TTV) propellant filling technology from R.A Jones KP-Aerofill.

Included in our pressure filler are features designed to reduce required maintenance, increase operator safety and assure the efficiency demanded by today's world-class manufacturing operations. Rapid changeover, for instance, is assured by a combination of features, including fully calibrated and powered gang can height and fill adjustments.

A long, trouble-free life is an essential feature of our design. In addition to stout drive components, our rugged steel base sits atop large tapered roller bearings. Service requirements are further reduced through the incorporation of a reliable cog belt drive for the infeed worm and starwheels. Safety clutches protect valuable drive components.

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Through-The-Valve (TTV) Propellant Filler



Through-The-Valve (TTV) Air-Powered Propellant Filler

# ULTRAFLEX (KP-Aerofill AG-275)

## The Ultimate In Flexibility For Propellant Filling

Blending propellant and products has become more challenging. The KP-Aerofill AG-275 propellant filler helps you meet the challenge with the ability to fill liquified or gaseous propellants volumetrically while shaking the container in an orbital motion. Orbital shaking, combined with propellant impacting, provides the action required to promote the absorption of propellant into the new generation of viscous and water-based concentrates. This method has been proven to result in the superior performance of a packaged aerosol product.

### Features

- No container - no fill feature mechanically opens the poppet when the adaptor contacts the valve, eliminating excess emissions. Propellant waste and associated hazards are minimized.
- Unique orbital shaking motion provides 1.5 inches of stroke. This style of agitation results in better absorption of the propellant into the product during the propellant fill.
- The shaking motion is powered by a proven hydraulic method. Shaking speed and machine turret speed are independently adjustable.
- The KP-Aerofill AG-275 can operate in three modes. Use as a gasser/shaker, lockout the shaking to allow operation of the UltraFlex as a standard Through-The-Valve pressure filler, or operate without propellant filling as a shaker only.



Positive displacement propellant powered metering cylinders ensure precision fills. Cylinders have a capacity of 550cc and are propellant powered eliminating heat buildup typical with air powered cylinders when using compressed gasses such as CO<sub>2</sub> and N<sub>2</sub>O. KP-Aerofill AG-275 offers 249 degrees of rotation for propellant filling and 226 degrees of rotation for shaking.



KP-Aerofill AG-275 is available in 12- and 18-head configurations. The heavy-duty base construction provides a rugged foundation which helps minimize vibration and noise levels, even at maximum output. The 5 hp explosion-proof-rated, variable frequency drive controls machine rotational speed, delivering up to 17 RPM.

### Customer Benefits

**KP-Aerofill AG-275 unique orbital motion allows for better product and propellant mixing**

**The process enables you to work with more viscous products, as well as low VOC products other systems can't handle**

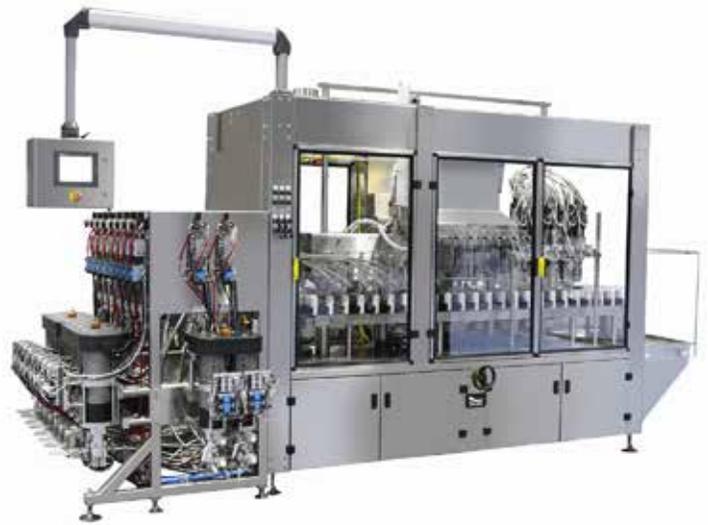
**Gasser/shaker, propellant filling only and shaker only capabilities offer unmatched equipment flexibility**

# FLEXI PAK (KP-Aerofill AM-160)

The KP-Aerofill AM-160 machine is a complete aerosol production line in a compact, easy changeover package including product filling, automatic valve insertion, crimping and UTC pressure crimping, gassing, and checkweighing with reject.

Its unique and patented change part free container handling system is first choice when investing in new flexible medium speed aerosol filling lines.

Responding to ever increasing requirements for fast and accurate changeover, the KP-Aerofill AM-160 has servo-drives fitted to the axis of all the critical motions to facilitate "right first time" positioning and high-speed accuracy during cycling.



## Aerosol Filling & Closing

The Flexi Pak is available in a 4 index or 6 index version for speeds up to 160 cpm and includes a machine mounted touch screen HMI to provide a comprehensive machine control package, menu driven container changeovers, and minimal operator intervention.

As well as standard aerosol production, to demonstrate the versatility of this machine, R.A Jones & Co. has supplied Flexi Pak machine solutions for Bag-on-Valve, compressed gas and TTV filling with actuator and cap placing, together with solutions for non-aerosol liquid filling.

## Features

- Change part free container handling system
- Servo control positive pick & place valve inserting
- Servo control, high speed, accurate indexing
- 4 or 6 index for speeds up to 160 cpm
- Flexible head configuration for a wide range of applications
- Touch screen container diameter change
- Minimal operator intervention
- Operator touch screen HMI



# UNDER-THE-CUP (UTC) FILLER

The KP-Aerofill Rotary UTC Propellant Filler draws a vacuum, fills propellant and crimps the valve in sequential operation on one machine.

## Unique Advantages

- Requires no valve adapters
- Assures faster line changeovers
- Saves valuable production space
- Handles all standard valves and containers
- External crimp depth and diameter are easily adjustable
- Complete freedom from valve orifice fill speed limitations; increases fill rates
- No need to purge the diptube
- Allows versatility in choice of propellants and mixtures
- Ability to fill products that have been pre-saturated with compressed gas



Rotary Under-The-Cup (UTC) Propellant Filler

## Features

Cam and hydraulic operation

Crimping collet expanded by the plunger

Easily accessed and simplified timing belt to drive to the container handling components

Fill size changes for the piston, undercap and pressure fillers accomplished with a motorized gang fill adjustment system

Motorized, self-locking jackscrew gang head adjustment for container height changeover

Hydraulic double acting cylinder

Propellant powered metering cylinders

Quick-change container handling component mounting. No tools or re-timing required

Rack and pinion feedscrew back up rail adjustor with locking handle and jam indicator

Individual overload clutches for starwheel and feedscrew drive

Single unit base clad with stainless steel

Standard head configurations hold 6, 12, and 18 heads

State-of-the-art operator's panel and remote programmable logic controller

Timing-belt variable frequency drive

## Benefits

Rugged, reliable, trouble-free

Long-life and precision crimping of valves

Reduced maintenance in both parts and labor

Extremely rapid changeovers provide more production time availability

Fast, foolproof changeover

Drives the collet plunger for efficient, powerful crimping of aerosol valves without complicated control systems

Does not require a compressed air system or complicated control systems. No heat of compression issues with compressed gases

Fast, no-adjust changeover

Allows for quick clearance and restart

Eliminates machine damage from jammed or tipped over cans

Total machine safety enclosure with stainless steel and aluminum construction with choice of plastic, safety glass or wire mesh

High speed to ultra high-speed production capability

Local machine full function controls, as well as remote diagnostic information for reduced down time and ease of troubleshooting

Reduces noise and improves service life

# PROPELLANT FILLING FOR EVERY APPLICATION

## Propellant Booster Pumps

Proven design preserves maximum productivity and addresses emission concerns

To accomplish these two important goals, our customer-proven booster pumps have been equipped with an impressive list of performance enhancing features, which result in environmental safety, as well as production levels as high as 33 gallons per minutes (2.09 liters/second). Includes:

- Zero leakage diaphragm pumping system
- Pentaplex design for smooth, low pulsation delivery
- Variable frequency drive for reliable output control
- Direct drive, eliminating all drive belts



Propellant Booster Pump

## Propellant Heater

Custom designed to enhance any propellant filling operation

Inherent to any propellant filling operation is a small release of liquefied propellant with every container filled. The refrigeration effect of the release can cause filling head seals to stiffen and leak. By heating the propellant with the KP-Aerofill propellant heater this effect is eliminated. An additional benefit to heating the propellant is reduction of immersion time required in the hot water test tank.

The KP-Aerofill propellant heater consists of a water-to-propellant heat exchanger, a water circulation pump, a temperature controller, and a floor mounted frame assembly. Simply supply hot water to the heat exchanger and connect the heated piping to the propellant supply to the filler. If hot water is not available, an enhanced version is available that adds a closed-loop, steam-to-water heat exchanger for safe, efficient propellant heating.