



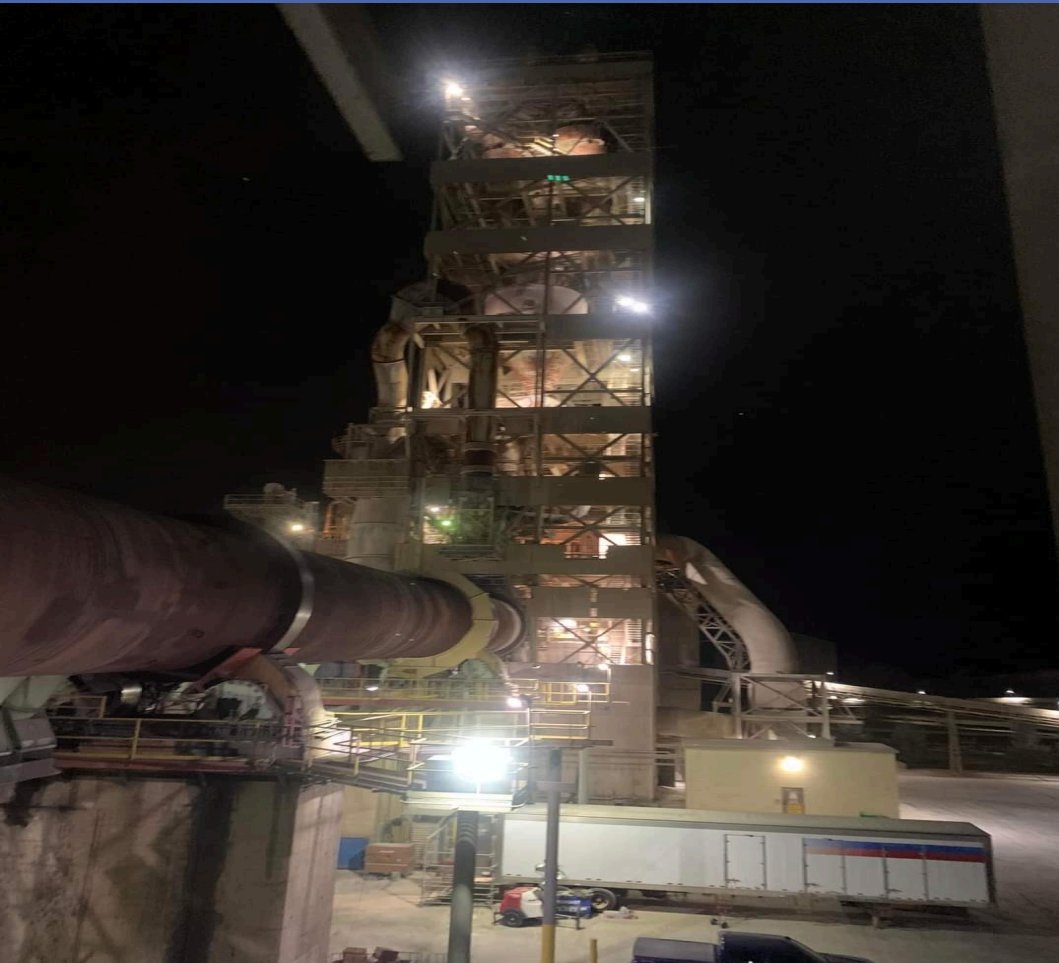
**DRACYON**  
CORP.

*Prosperity through technology*

# Changing the Industry

**Dracyon Corp's 10 Year Guarantee**

# Is a 10-Year Guarantee Feasible?



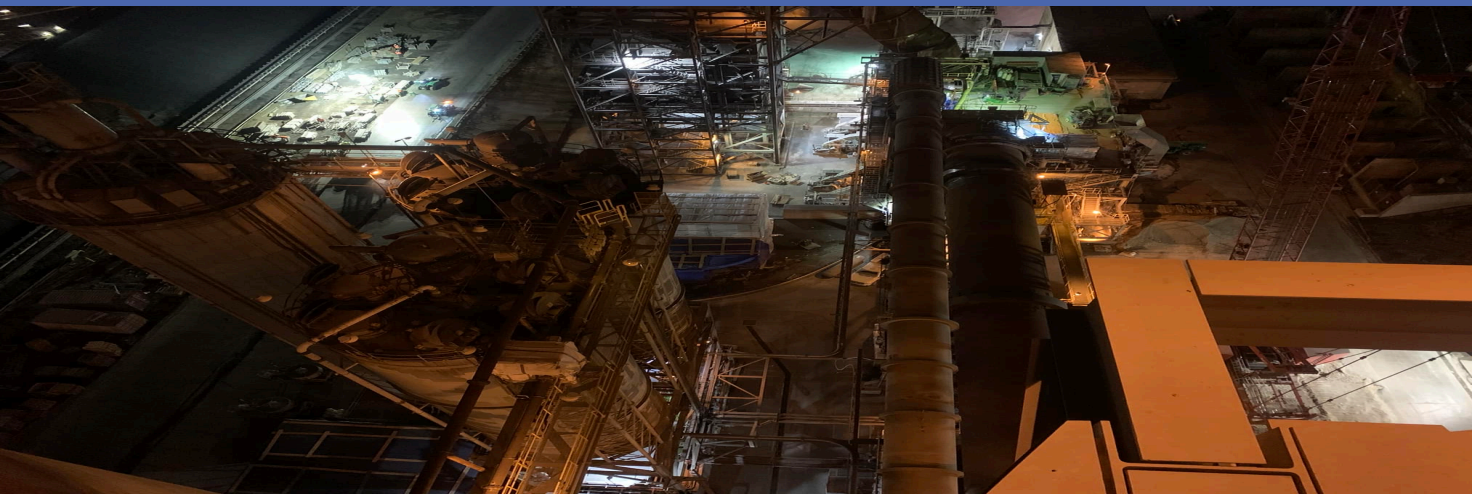
- Many are shocked at the prospect of a 10-year guarantee.
- It is only possible with two improvements
  1. Air cannon cleaning power
  2. Air cannon reliability





# How to Improve Cleaning Power?

Simple: Follow the Science



# The Science of Improved Cleaning Power

To evaluate the efficiency of an Air Cannon (AC) it is necessary to understand the following physical variables:

## **P = Pressure in the air tank of Air Cannon**

This parameter is depending on the compressed air system available at site. The higher the available pressure, the greater is the potential force.

## **V = Volume of the Air Cannons air tank/reservoir.**

Sizes from 35 to 300 Liter are typically available in cement plants. The bigger the volume of the tank , the greater is the available potential energy. The volume is the driver for the duration of an Air Cannons blast/effective cleaning time.

## **A = Area of output**

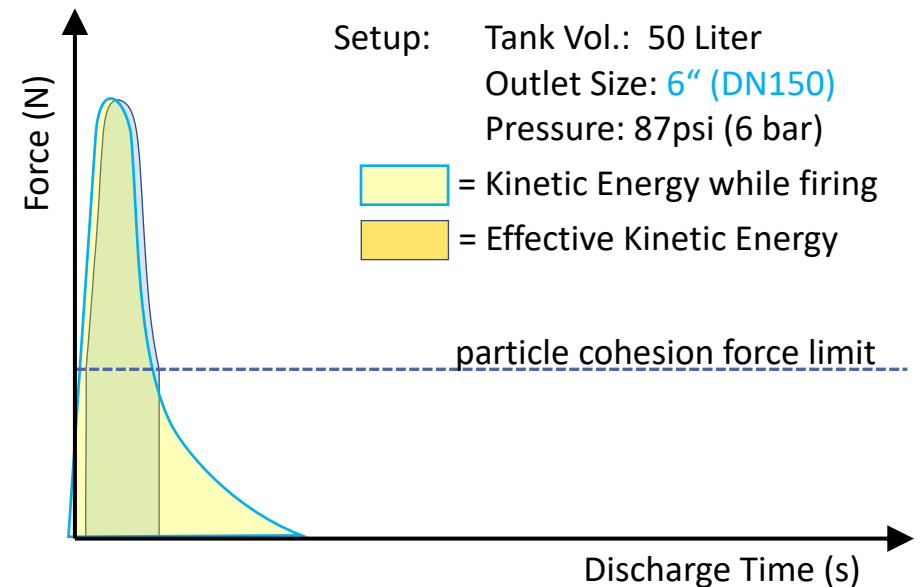
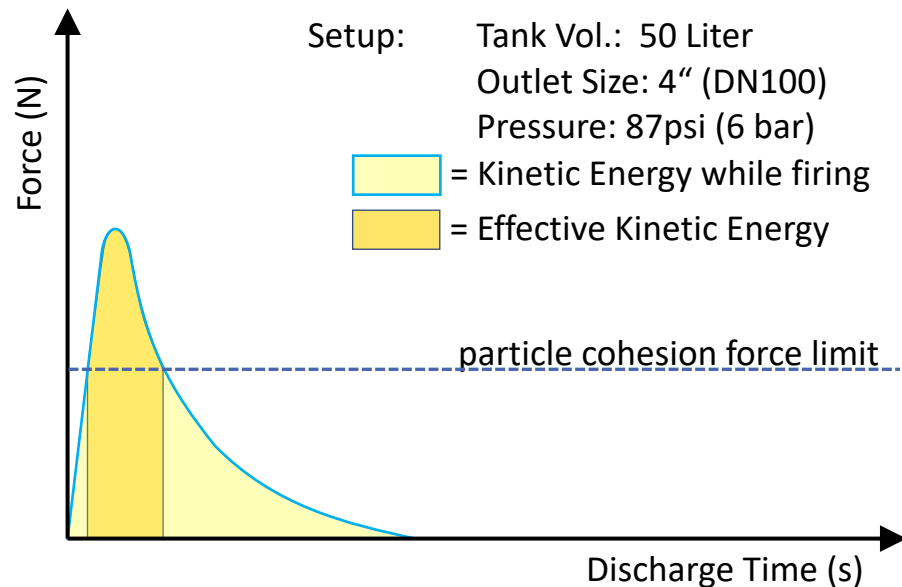
Most common sizes in cement plants are 4" (**DN100**) or 6" (DN150). The size of output area is governing the flow path and has a big impact on flow rate at the discharge of the Air Cannon.

$$\text{Kinetic Energy} = \frac{M \cdot V^2}{2}$$

M = Mass (volume) of the air  
V = Velocity at the discharge of the air cannon.



# The Science of Improved Cleaning Power

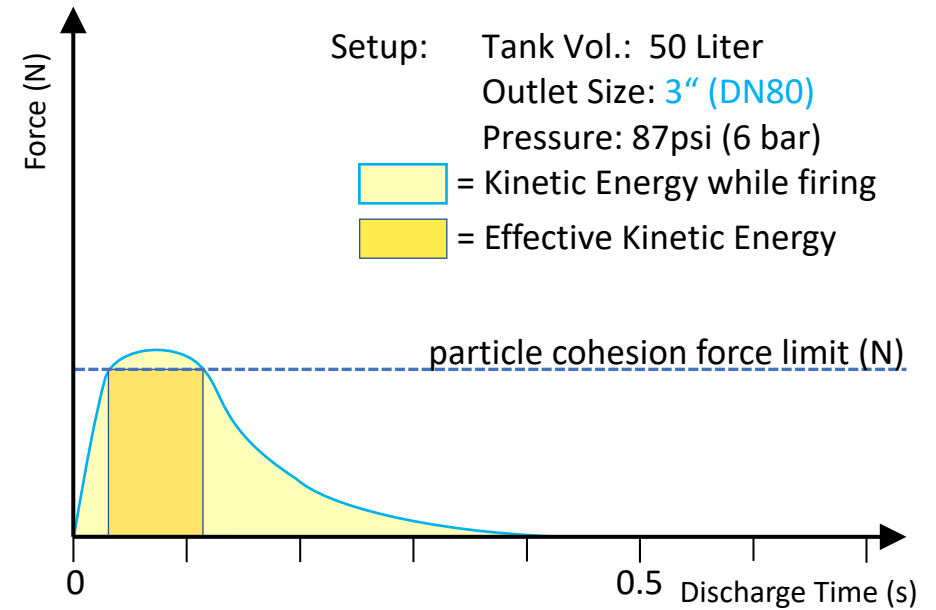
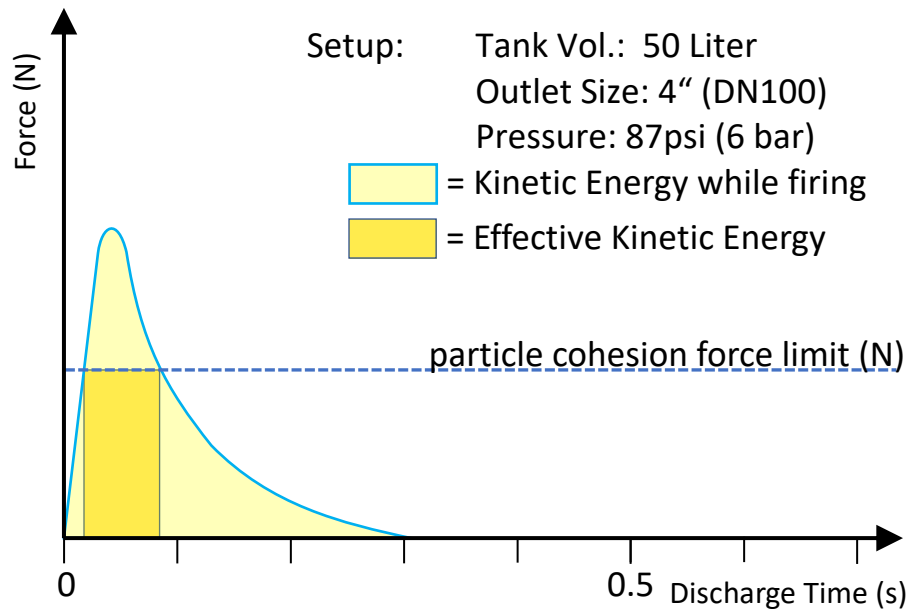


## Results with bigger outlet area:

Starting from left graph with initial Air Cannon setup, the right one shows a graph with a **higher peak force** and a **shorter duration** of the discharge time (cleaning time).

Following is the proportionate amount of utilizable energy to clean less than in the initial setup with a smaller discharge.

# The Science of Improved Cleaning Power



## Results with smaller outlet area:

Starting from left graph with initial Air Cannon setup, the right one shows a graph with a **lower peak force** but a **longer duration** of the discharge time (cleaning time).

This leads the proportionate amount of utilizable energy to clean significantly more than in the initial setup with a bigger outlet size. Pre-condition for effective cleaning demands peak force to be higher than the particle cohesion force limit.

# The Science of Improved Cleaning Power

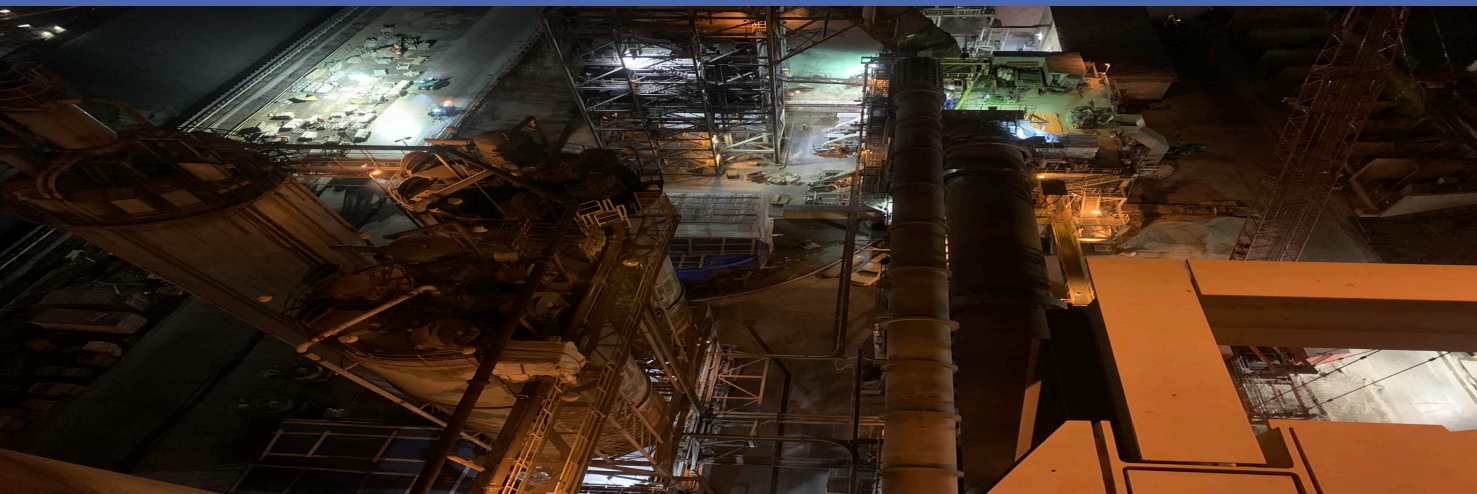


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# How to Improve Reliability

Simple: Follow the Science





# The Science of Better Reliability



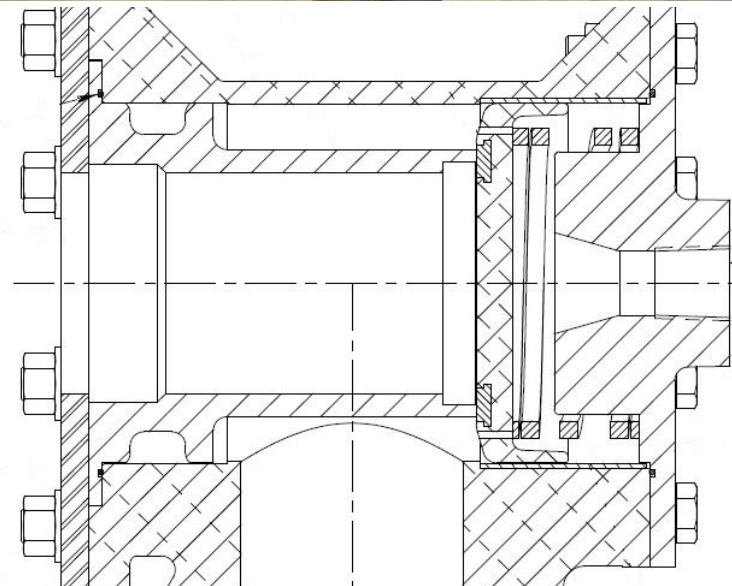
- Guide System
- Cushion System
- Superior Valves
- Duty Cycle

# The Science of Guide System



## Guiding the Piston: The Old Way

Adhesion Friction which in this case can be referred to as stiction is an issue in this old (Cave Man) design The piston is not designed as a smooth bearing which greatly increases the adhesion friction. It takes a greater force to move this piston and it is not smooth.

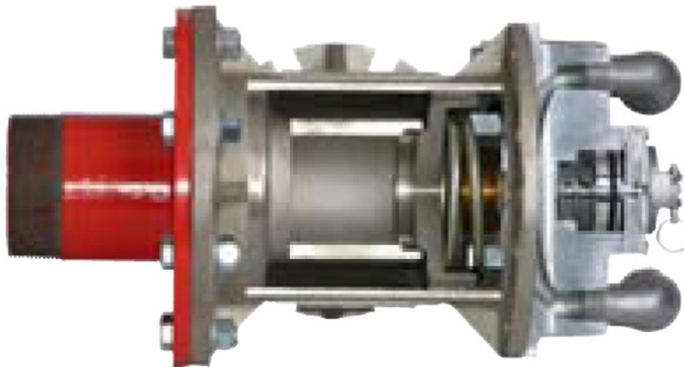


# The Science of Guide System



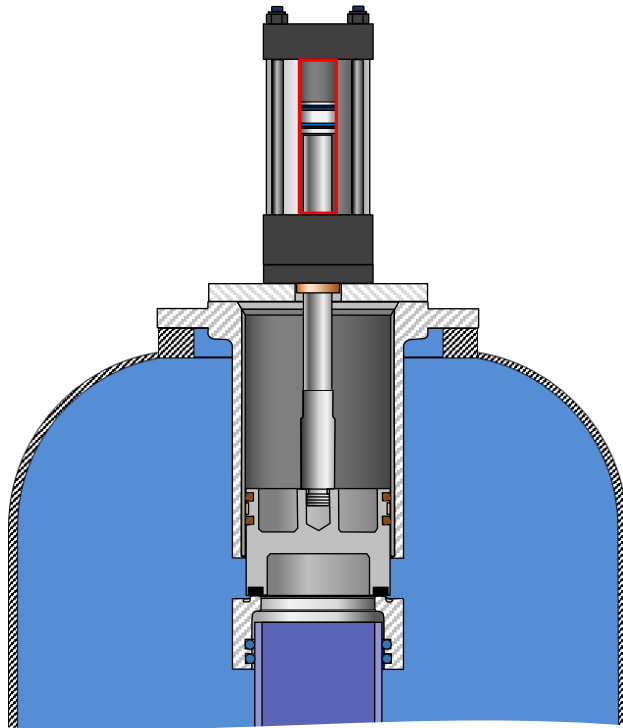
## Stopping the Piston: The Old Way

- The question is not if the spring wear out and impacts performance but only when!
- This system 100% is not designed to last 10 years. What warranty does the spring come with?

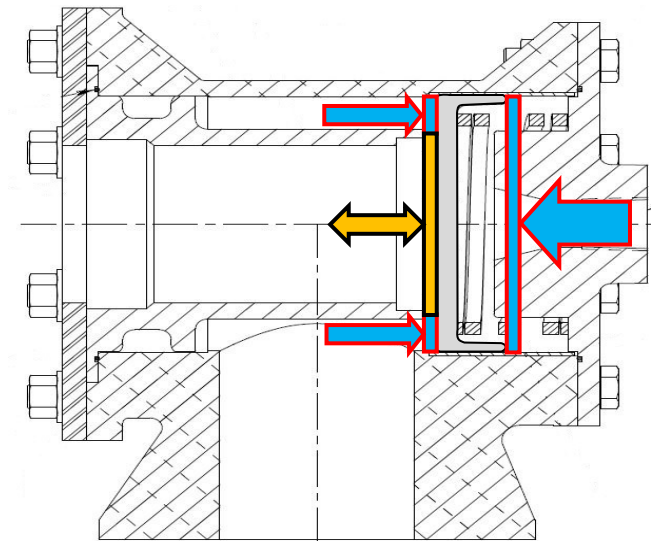


# The Science of Guide System

- Honed and chrome surface is well tested and proven. This is the material used in manufacture of air cylinders.

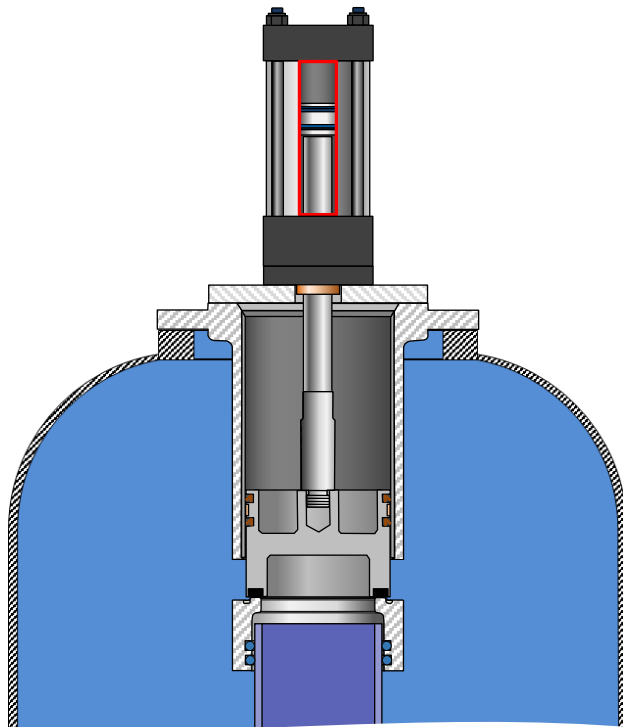


Adhesion friction in the Big Blue is far less than the competitor's system. As smooth and issue free this system is it is more expensive. The air cannon must use the best technology to be able to support a 10 Year Warranty!

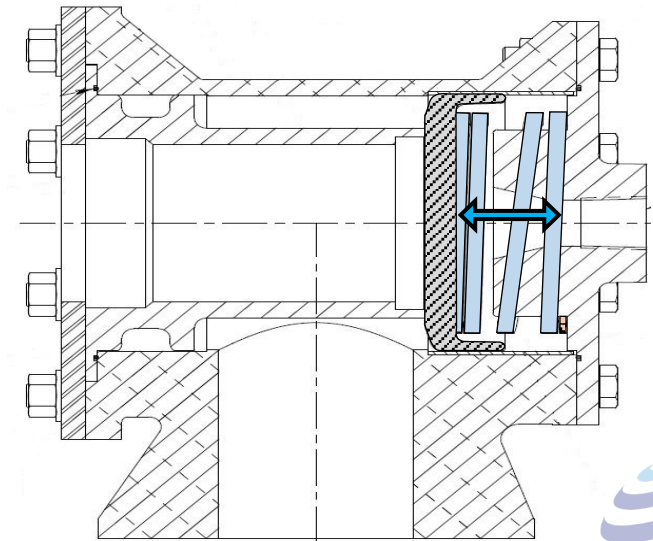


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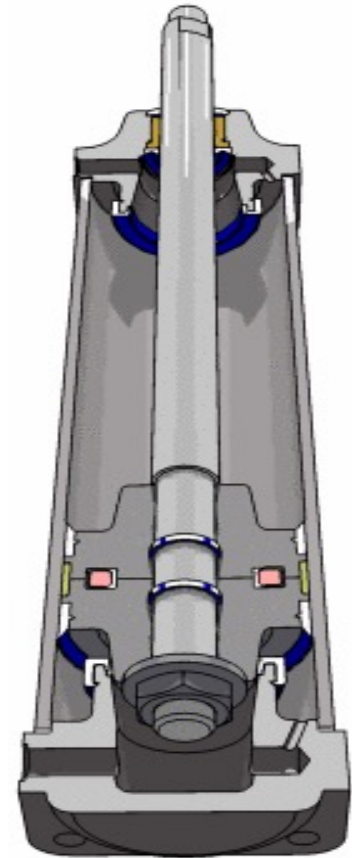


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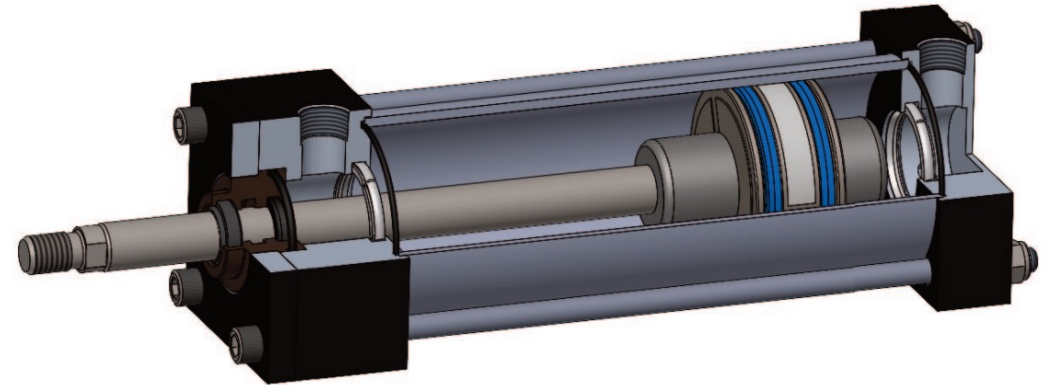
# The Science of Cushion System

- Air Cushion is designed to reduce wear and tear on the system. (allow 10 years of trouble-free service)
- We believe the life of a spring with a duty cycle of movement once every 5 minutes is 15 months.

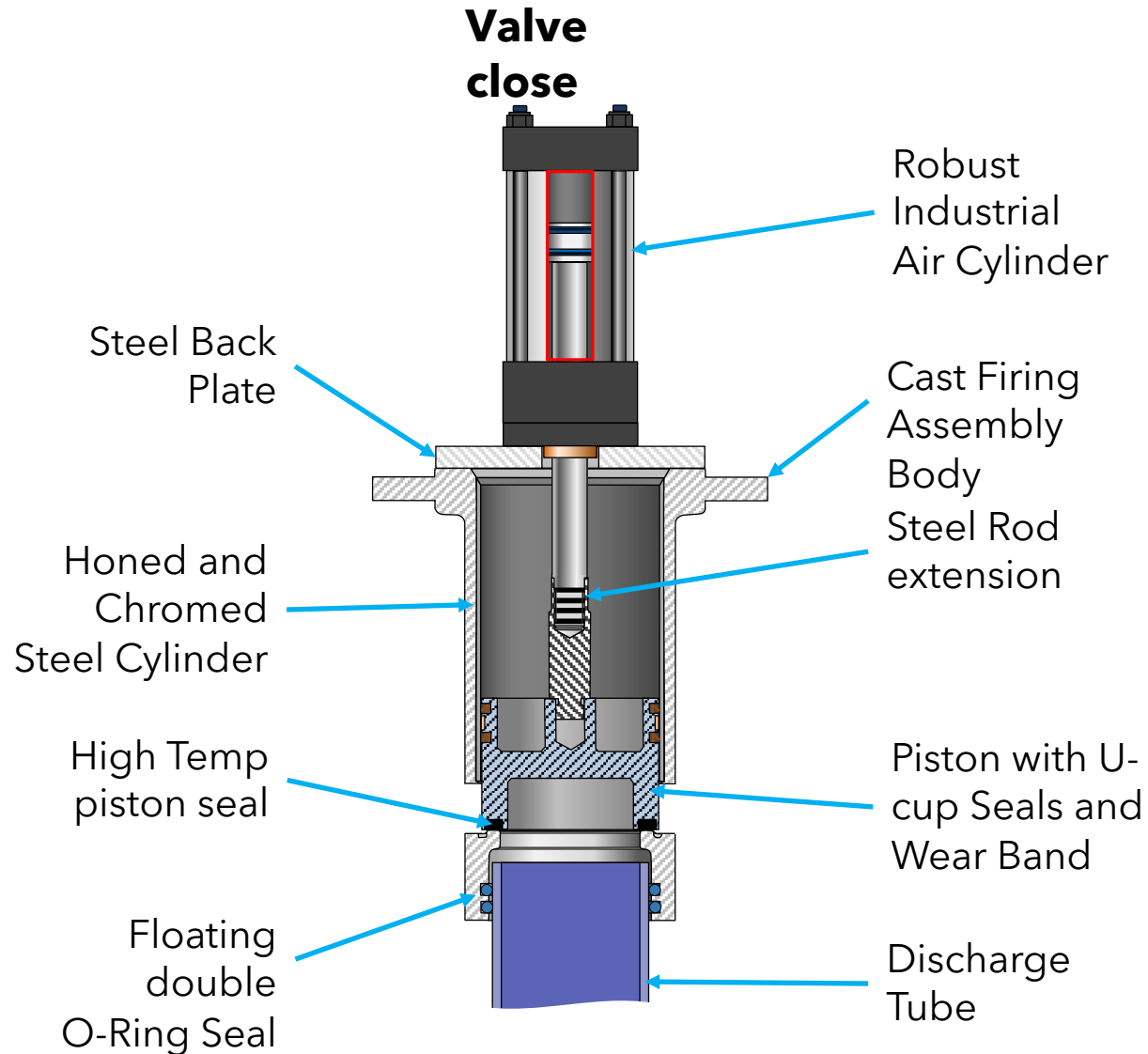


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# The Science of Superior Valves



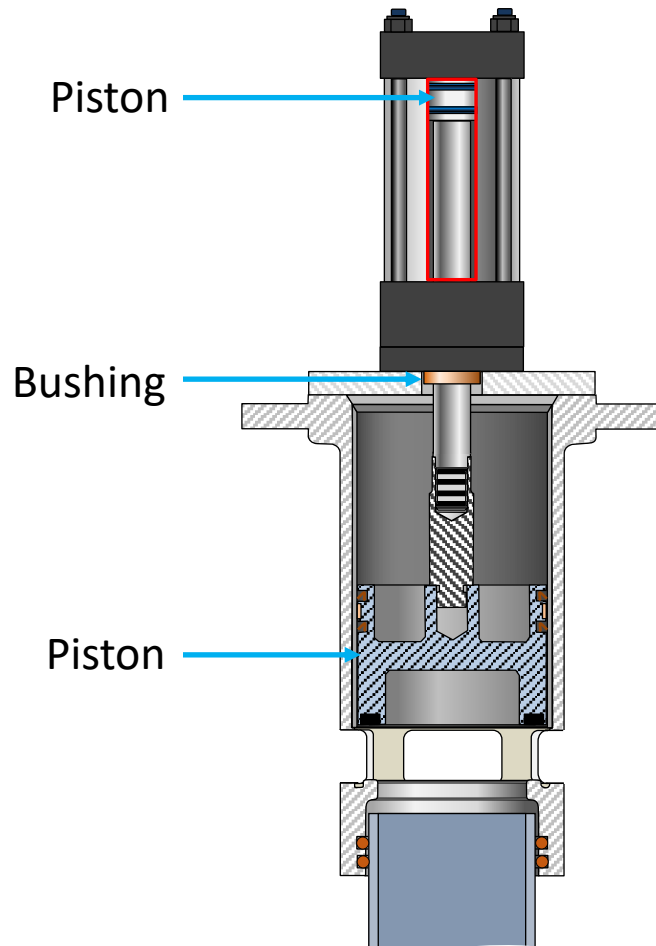
How can Dracyon provide 10 year guarantee?

1. Simple and rigid valve design
2. Industrial air cylinder with back end air cushion
3. Honed and chromed cylinder for valve piston
4. Triple guided piston assembly without any spring
5. Standard of the the shelf parts



# The Science of Superior Valves

Valve open



How can Dracyon provide 10 years guarantee?

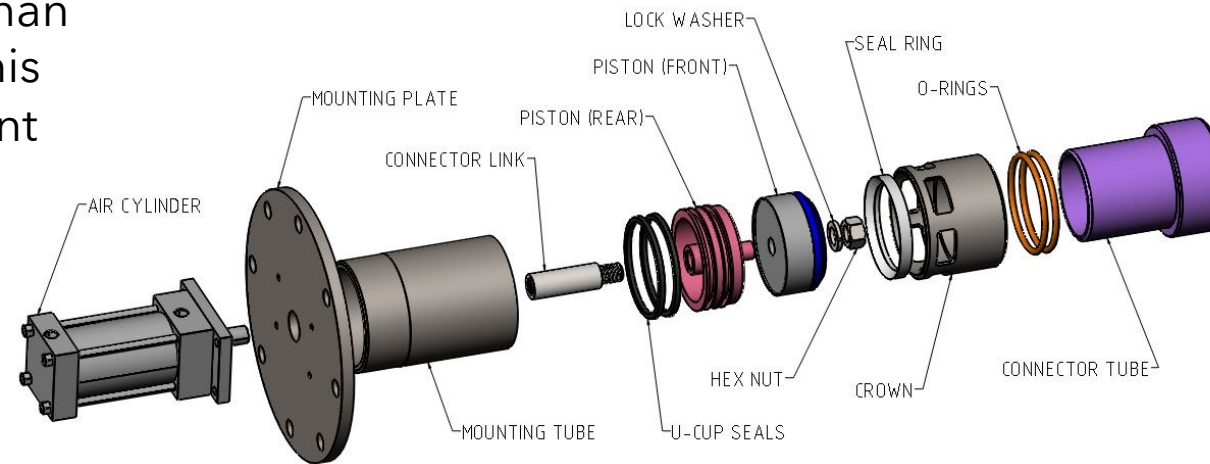
- Applied Air Cylinder known for safe operation for millions of cycles
- Back cap air cushion stops smoothly the piston without a spring
- Double cylinder design ensures maximum piston guidance allowing minimum wear on seals, pistons and cylinders
- Main valve has a honed and chromed cylinder pipe prepared for millions of operating cycles.
- **Hundreds of installations have proven that Dracyons Air Cannons have caught up to todays and future technology demands!**



# The Science of Superior Valves

Air Cylinders are used extensively in Industry today and withstanding 2 millions cycles is common. Air Cushion System is designed to stop a load larger than what it stops with this system. Replacement parts are standard internet offering.

Air Cannon piston is designed after an air cylinder piston. Replacement parts are also standard internet offering



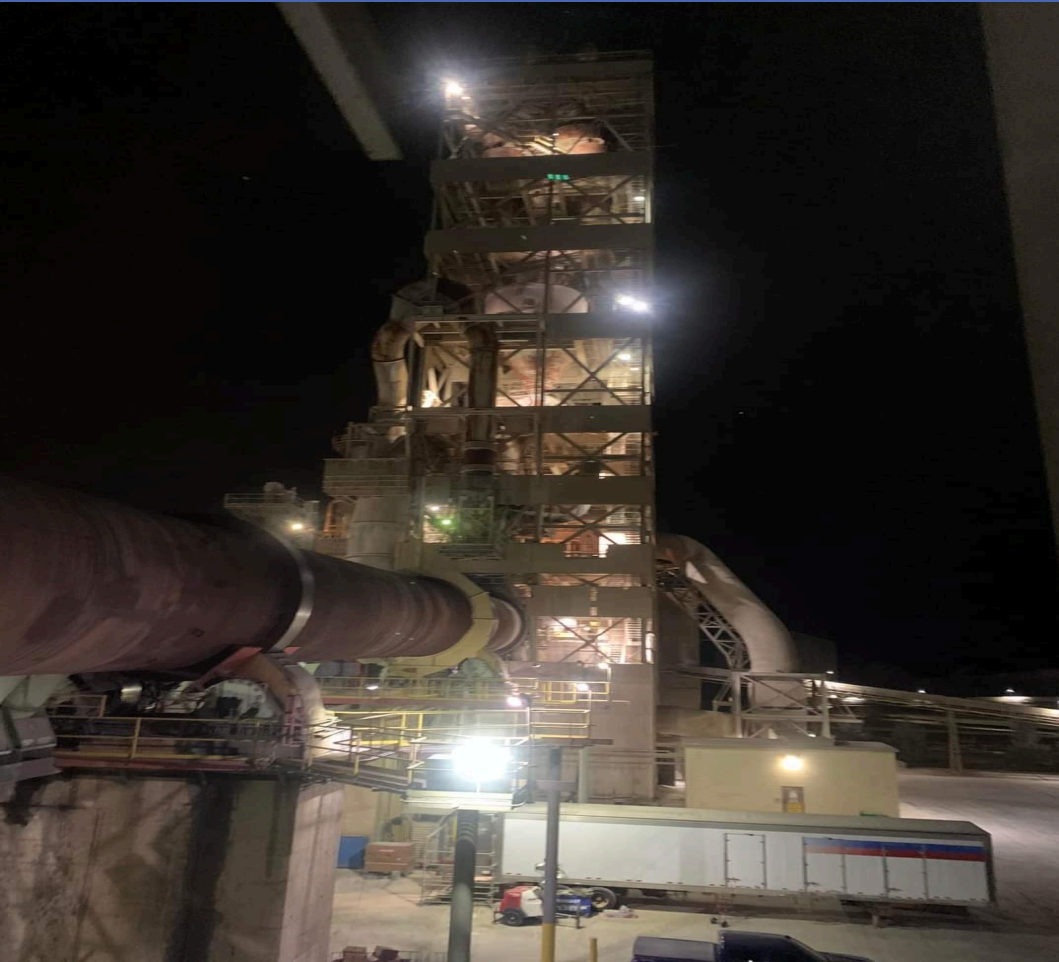
**IGS Valve Assembly**

# The Science of Duty Cycle

- The duty cycle of a spring refers to the number of cycles it can undergo before it fails. The number of cycles depends on the type of spring and its intended use.
- For example, a standard cycle spring can undergo 10,000 cycles, while a high cycle spring can undergo 25,000 cycles and the highest cycle springs can undergo 50,000 cycles
- Operational cycle of air cannon
- Fires every 5 minutes
- This equals 12 firing per hour, 288 firing per day.
- Based on this those numbers, the spring hit its duty cycle after only 174 days.



# Summary



- A 10-Year Guarantee is Possible
- With greater improved cleaning power and reliability, Dracyon Corp can guarantee a successful installation that will stand the test of time.



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# Thank you



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