

Dairy Components

providing innovative solutions for the dairy industry

production automation specialists



www.rmlengineering.com

welcome to RML



rml Engineering - New Zealand

RML Engineering are industry leaders in process and production line automation solutions. An innovative range of dairy components is also part of our product portfolio.

Since 1982 RML Engineering has developed a strong reputation for innovation and a 'can do' attitude. We have developed into a multi disciplinary engineering and manufacturing company with a range of quality rml branded machinery and components.

Our humble New Zealand beginnings provided us with the major advantage of being surrounded by a world leading agricultural industry requiring the very best systems to compete on the world stage. Over the years our operations and reputation have grown significantly. Over the years we have successfully supplied a range of dairy components such as Retractable CIP Nozzles, Tanker Reception Swivel Strainers, Sampler Valves and Drier winches to name a few to some of the largest and most successful companies in the world including Fonterra and Tetra-Pak.

Often described as 'problem solvers' we have built our design capabilities around our own innovative solutions, delivering exceptional levels of customer service and value. Our attitude is that we will consider any engineering challenge. We are motivated by the desire to be solution providers.



Engineering

The range of RML retractable CIP nozzles are specifically designed to remain in place during production for sanitary and hygienic food processing.

They feature a liquid/air activated spray head that fully extends under liquid/air pressure during the CIP cycle. The nozzle is rotated by liquid pressure and the force of rotating spray jets and the wide spray angle provides a high impact scrubbing action to ensure complete cleaning. Upon completion of the CIP cycle, the spray head fully retracts flush with the inner wall of the vessel.

Typical applications include evaporators, spray dryers, bag houses, wet scrubbers, fluid beds, tanks, agitated tanks, process vessels, ducts and more.

As part of our quality assurance programme, all rml CIP nozzles are tested on our purpose built test rig prior to being despatched.

Features and Benefits

- Fully retractable spray head. Allows nozzle to remain in place during production without causing process disturbance.
- Available in liquid or air open/close.
- Wide spray angle cleans hard to reach areas.
- Stainless Steel construction.
- Permanently mounted, eliminating installing and removing before and after cleaning.
- Visual nozzle position indicators.
- Technically innovative design with the latest addition to the range offering positional feedback capabilities for control systems.
- Full service back up and a full range of spare parts available.



CIP Nozzle test machine



CIP Nozzles installed in ducting

RML offers a range of models to suit the particular needs of the end user. The range is not limited to what has been described here and any customer variations can be discussed with our design team.

M901 - 0137

This model is opened pneumatically. It has a fast acting spring close when the pneumatic and fluid pressure is withdrawn. The clear polysulphone barrel allows a visual indication of the nozzle position.

A benefit of this model is that the air can be left on even after CIP is complete to ensure the unit remains open for the drying phase. This model requires an air supply through a solenoid valve.

M901 - 0200

This model is actuated to both open and close pneumatically (i.e. no spring close). This allows the draining time to be accurately controlled by factory automation. The pneumatic barrel is stainless steel and the magnetic piston uses standard replacement parts.

Positional feedback is available via standard reed switches mounted externally. This means the position of the nozzle can be monitored in the control logic for the driver. An air supply and solenoid valves are required to operate this unit.

M901 - 0300

The same as the M901-0200 but includes an indication flag extending from the top of the unit providing a visual indication of the stem position.

M901 - 0700

This model is principally the same as the M901-300 Model M901 - 0200 although it has a fully machined external body, compared with the standard stainless steel cast finish.







Model M901 - 0137



Model M901 - 0700

Engineering



M901 - 0800 (Deluge Nozzle)

The Deluge Nozzle is primarily used on spray dryers for fire systems. It follows the same concept as our CIP spray nozzle and is opened and closed by a pneumatic cylinder.

It has a directional nozzle that sprays in a 180 degree arc and remains stationery providing a constant water deluge as long as the system is activated.

The cast body is fully machined internally. Positional feedback is provided via standard reed switches mounted externally.

Deluge Nozzle

M902 - 0900 (AS-I Certified)

This is the AS-I certified model, similar to the M902-200 model. It is actuated pneumatically (open & close) and has positional feedback using an integrated RML circuit board with AS-I capabilities.

The magnetic position location sensing ensures the operation of the valve is fully monitored and any faults can be detected by the plant AS-I system. As a secondary fault indicator, three externally visible LED's (open=green, closed=amber & red=fault) are fitted to the PML circuit board and can be used as a visual indicator to determine the state of the CIP nozzle.

This model is the most recent technical advancement in the evolution of fully machined RML CIP nozzles.



This is the USDA accepted model, designed to 3A sanitary standards, for use in factories requiring USDA status. It is pneumatically actuated (open & close) and has positional feedback using standard reed switches mounted externally.



M902 - 0900

M902 - 0900

Technical Information

- Stainless steel 304 body, spray stem and mounting adaptor
- Stainless steel body is from a casting which is machined internally to achieve appropriate surface finish
- Teflon bearings for durability
- EPDM Seals (Viton optional)
- Polysulphone top barrel (M901-0137 only)
- Grilamid TR90 top cover tube (M901-900 only)
- CIP inlet connection RJT, DIN, or SMS



CIP Nozzle with head extended

Mounting Adaptors

The RML Retractable CIP Nozzles are mounted to the duct or vessel by means of a special weld adaptor.

M901 - 0108 Type A (Pulled T Mounted

The same as the M901-0200 but includes an indication flag extending from the top of the unit providing a visual indication of the stem position.

M901 - 0101 Type B (Flush Mounted)

This adaptor is recommended for ducts over 1 meter in diameter and for flat surfaces. Fabricating this adaptor requires a 100mm diameter hole, to be cut and flush welded inside and out.



Model M901 - 0108



Model M901 - 0101









RML Rngineering CIP Nozzle Quick Reference Guide

Model	Liquid Open	Liquid Close	Pneumatic Open	Pneumatic close	Spring Close	Position Indicator	Position Feedback	AS-i	Optimum Operating Pressure	Flow Rate	Opening Pressure
M901 - 0100	•	•			•				3 - 4 bar	3500L/H	2.6 bar
M901 - 0137			• 6 bar		•	•			3 - 4 bar	3500L/H	6 bar
M901 - 0200			• 6 bar	•			*		3 - 4 bar	3500L/H	6 bar
M901 - 0300			• 6 bar	•		•	*		3 - 4 bar	3500L/H	6 bar
M901 - 0700			• 6 bar	•		•	*		3 - 4 bar	3500L/H	6 bar
M901 - 0800			• 6 bar	•					3 - 4 bar	3500L/H	6 bar
M901 - 0901			• 6 bar	•		•	•	•	3 - 4 bar	3500L/H	6 bar

- ★ With externally mounted reed switches
 - Positional indicator can be fitted

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The M901 - 0700 essentially operates the same as the M901 - 0300 but has a fully machined external body.

CIP Nozzle Spare Parts Guide

Model	Service Kit	Stem Assembly	Spring	Wiper Seal	Barrel	Piston	Piston Base	Piston Top	Actuated Barrel	Piston Kit	Cap Seal
M901 - 0100	M901 - 0101	M901 - 0103	•	•	•	•	•	•			
M901 - 0137	M901 - 0137	M901 - 0130	•	•		•	•	•	•		
M901 - 0200	M901 - 0201	M901 - 0202		•				•	•	•	•
M901 - 0300	M901 - 0301	M901 - 0307		•	•			•	•	•	•
M901 - 0700	M901 - 0701	M901 - 0705		•	•			•	•	•	•
M901 - 0800	M901 - 0801		•	•	•	•					
M901 - 0901	M901 - 0901	M901 - 0902		•					•	•	•

All RML Engineering CIP Nozzles have been designed as refurbishable units. They can be fully rebuilt and a new 3 year warranty applied

RML Dryer Winch

- Available in 1.5 inch, 2.5 inch and 3.0 inch sizes (hose diameter)
- 304 Stainless steel construction
- Fully guarded
- IP 67 complete wash down
- Operated via remote control
- Internal safety cable attached to rotary head
- Full range of spare parts are available.



Dryer winch in operation



RML High Pressure Sets



Air Purge Valve Assemblies

We customise high pressure sets for powder driers dependant on the application.



RML Sampler Valves

Pneumatic Process Sampler 2ml (Formerly Type C)

Function:

The PPS-2 CIP sampler valve is a three position valve. It is a pneumatic air operated valve. The three positions are closed, open (to take the sample) and CIP which allows the valve to be cleaned by the CIP cleaning agent running through the plants pipe work. This valve takes a 2ml sample of liquid with each cycle.

Construction:

The body is manufactured from 304 stainless steel. The internal components are 304 stainless steel and engineering plastics.

Applications:

The typical application of this version is for time based sampling of trade waste liquids. As this valve can be cleaned via CIP it is also widely used for process liquid sampling in the food and beverage industry.

Options:

The mounting adaptor can be machined to suit a multitude of customer pipe sizes in either horizontal or vertical orientation.

Pneumatic Process Sampler 10ml

Function:

The PPS-10 sampler valve is a two position valve. It is a pneumatic air open and air close valve. This valve takes a 10ml sample of liquid with each cycle.

Construction:

The body is manufactured from 304 stainless steel. The internal components are 304 stainless steel and engineering plastics.

Applications:

The typical application of this version is for time based sampling of trade waste liquids.

Semi Pneumatic Process Sampler (Formerly Type B)

Function:

The SPS-2 sampler valve is a two position valve. It is a pneumatic air open and spring close valve. This valve takes a 2ml sample of liquid with each cycle.

Construction:

The body is manufactured from 304 stainless steel. The internal components are 304 stainless steel and engineering plastics.

Applications:

The typical application for this version is for time based sampling of trade waste liquids.

Options:

The mounting adaptor can be machined to suit a multitude of customer pipe sizes in either horizontal or vertical orientation.

Designed to take fluid samples of a specific volume













RML Tanker Reception Swivel Strainer

The RML Tanker Reception Swivel Strainer is designed to enable a tanker hose to swivel toward a truck. It is also equipped with a CIP swivel joint which cleans the union after use. A removable stainless steel strainer allows for easy cleaning and the protection of the down stream pump.

4 Inch Swivel Strainer

The 4 inch Swivel Strainer contains a removable 4 inch strainer. The 4 inch inlet rotates through 360 degrees via a PTFE rotary gland with a CIP function. Construction material is 304 stainless steel.

8 Inch Swivel Strainer

The 8 inch Swivel Strainer is equipped with a 6 inch inlet/ outlet for larger volumes. The 6 inch inlet rotates through 360 degrees via a PTFE rotary gland with a CIP function. Construction material is 304 stainless steel.

The 4inch and 8 inch swivel union can be purchased separately.



4 Inch Swivel Strainer



8 Inch Swivel Strainer

RML Sanitary Flanges

These weldable sanitary pipe joiners range from 4 to 12 inches in diameter. They have the ability to join short or long lengths of pipe together with sanitary fittings.



Engineering

- Constructed from 304 or 316 stainless steel with a nitrile sanitary seal.
- Orifice plates can be added which reduce fluid flow.



RML Plenum Valves

Models

RML have many versions of isolation valves. They are constructed to suit each application. The two main styles are:

- RML M911 Sanitary Isolation valve with automatic actuation.
- RML M915 CIP compatible Isolation valve, automatic actuation.

RML M911 Sanitary Isolation Valve - Automatic Actuation



Functional Detail

The RML M911 is designed to provide a simple and effective method for isolating ducting with a barrier during CIP of powder driers.

Our unique manufacturing process ensures a very close tolerance sliding fit between the valve seals and the sliding plate. This means the pneumatic cylinders and the valve plate are the only moving parts resulting in a long service life with minimal maintenance.

Construction

- Stainless steel for long life appearance and easy cleaning
- UHMWPE slides for durability and a smooth operation
- Non corrosive pneumatic cylinders
- FDA approved seals and lubricants
- Fully guarded for operator safety

RML M915 CIP Compatible Sanitary Isolation Valve - Automatic Actuation



Functional Detail

The RML M915 is designed to provide a simple and effective method for isolating ducting with a barrier during CIP of powder driers.

The blade retracts into a CIP compatible cavity ensuring the highest hygiene in applications such as baby food plants.



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