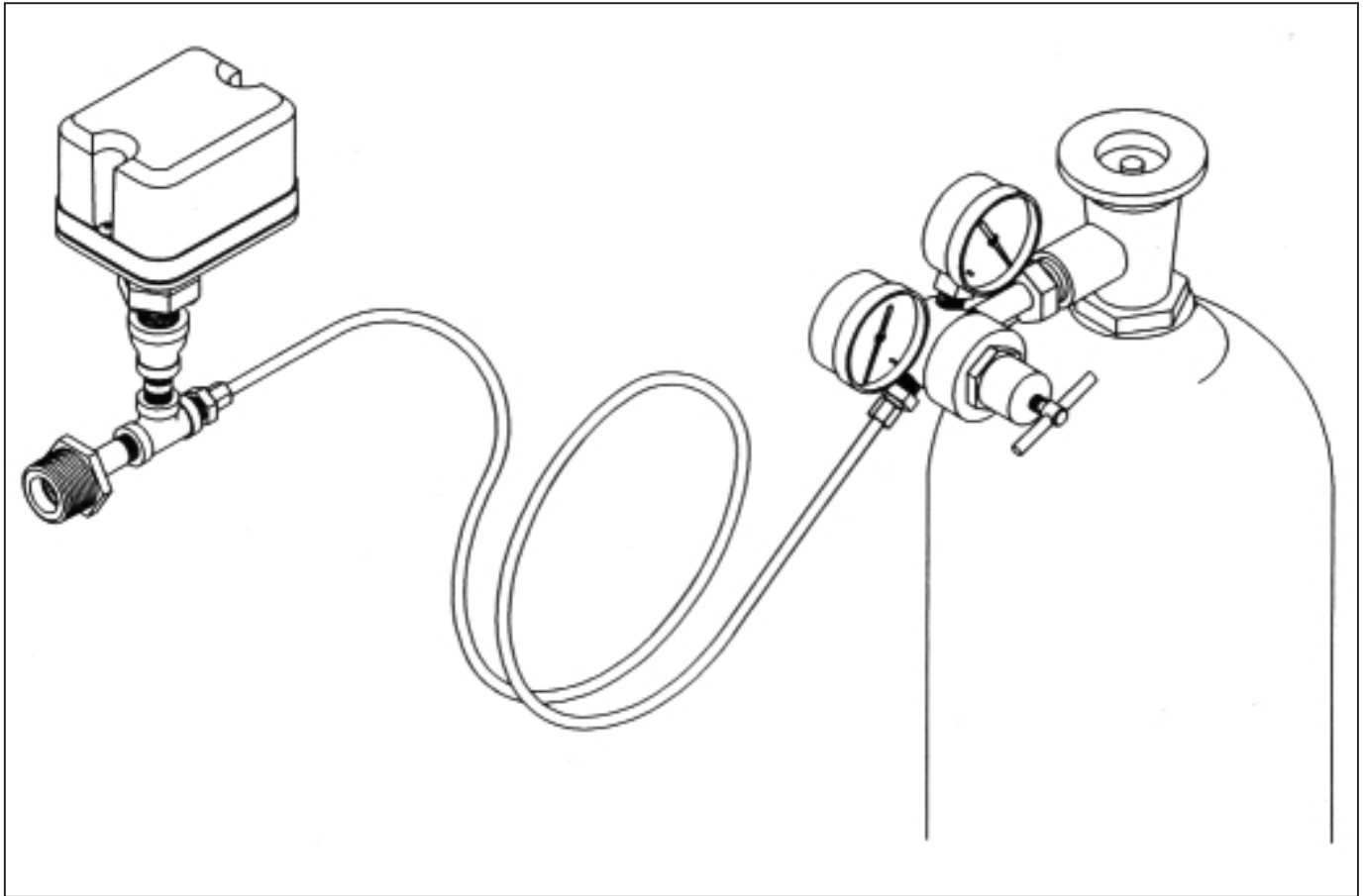


Reliable®

Nitrogen Regulating Device



Features

1. Designed for use with Reliable's Supertrol Double Interlock Preaction Type D System, sizes 1½", 2½", 4" & 6", Model LDX pipe valve system sizes 4" & 6" and other systems using Reliable Model A-2 and Model C Pressure Maintenance Devices.
2. Use of nitrogen instead of air in refrigerated area systems minimizes possibility of ice buildup inside the system piping that could prevent proper system operation.
3. Can reduce a need for additional freezer wall penetrations (required to reduce ice plugging) when using air compressors.
4. Inexpensive to install, operate and maintain.
5. System down time typically limited to a few minutes required for changing cylinders.
6. Can increase the system reliability in installations where air supply is not dependable.
7. Optional adjustable low pressure switch gives warning signal at the control panel when cylinder pressure reaches a low preset level.

General Description

Reliable Nitrogen Regulating Device is used to provide nitrogen pressure in Reliable Supertrol Double Interlock Preaction Type D Systems or any other Reliable system installation using Reliable Model A-2 or Model C Pressure Maintenance Devices. The nitrogen supply is obtained from a high pressure nitrogen cylinder.

Installed at the supervisory pressure port of the system, the Nitrogen Regulating Device includes a single stage pressure regulator equipped with high pressure inlet and low pressure outlet gages. As the nitrogen is gradually depleted and the pressure inside the cylinder drops, the low pressure regulated output remains stable. Connected to the regulator is a coiled copper tubing with connector and adapter for a flexible and direct connection to the above mentioned Reliable pressure maintenance devices.

If desired, an optional adjustable low pressure switch kit is available. Installed between the Nitrogen Regulating Device outlet and the Model A-2 or Model C Pressure Maintenance Device inlet, it signals a control panel such as the Notifier RP1001 the approaching depletion of the nitrogen supply.

The Reliable Nitrogen Regulating Device is available assembled, ready for connection to the system.

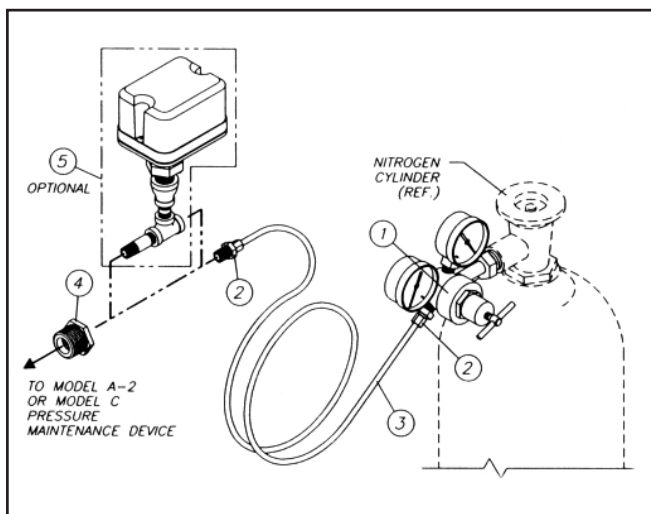


Figure 1—Nitrogen Regulating Device

Nitrogen Regulating Device

P/N 6304030101 (Item 5 included)

P/N 6304030100 (Without Item 5)

P/N 6304030107 (Item 5 included - Canadian)

Item No.	Part Number	Description	Qty. Req'd
1	6999991570	Pressure Regulator	1
2	98085630	Connector, 1/4" Tubing x 1/4" NPT	2
3	98768004	Tubing, 1/4" O.D. x 6 ft. — Copper	1
4	98048025	Reducer Bushing, 3/4" x 1/4"— Galv.	1
5	6501200100	Optional— Low Pressure Switch Kit	1
	6501200107	Optional— Low Pressure Switch Kit (CAN)	

Technical Data

The Reliable Nitrogen Regulating Device consists of components shown in Fig. 1.

The single stage pressure regulator, made of brass, has a 200-4000 psi cylinder pressure gauge and a 10-200 psi outlet pressure gauge. A coiled 1/4" copper tubing allows for flexibility in connecting the Device to the System air supply inlet.

The low pressure switch kit consisting of galvanized tee, outlet nipple, branch nipple, branch coupling reducer and adjustable low pressure switch is optional. Mounted between the Nitrogen Regulating Device and the supervisory pressure inlet, it sends a warning signal to replace a nitrogen cylinder that is approaching a pre-set pressure depletion level.

The high pressure nitrogen cylinder can typically be rented from a local source, with rental fees varying by supplier and cylinder sizes. Typical cylinders are:

Cylinder Size	: "Q"	"S"	"K"	"T"
Nitrogen Weight (lbs.)	: 5.50	10.28	16.51	22.01
Nitrogen Volume (cu. ft.):	76	142	228	304
Pressurized at (psig)*	: 2200	2200	2200	2640

*Note: Initial pressure and thus nitrogen weight and volume can vary slightly. Check with your local supplier.

When used in conjunction with the Reliable Double Interlock Type D Preaction System in a refrigerated area, the calculated nitrogen supply (lbs.) to pressurize various system capacities to 10 psig at different freezer temperatures is as follows:

System Capacity (Gal.)	Freezer Temperature (°F)					Approx. Fill Time (min.)**
	20°	0°	-20°	-40°	-60°	
	Nitrogen Supply in lbs.					
250	4.49	4.69	4.90	5.13	5.39	1
500	8.98	9.37	9.80	10.27	10.78	2
750	13.47	14.06	14.70	15.40	16.17	3
1000	17.97	18.75	19.60	20.54	21.56	4

**Note: When used in conjunction with the Reliable Model A-2 Pressure Maintenance Device having bypass line open.

The nitrogen used in refrigerated area systems minimizes a possibility of ice buildup and blockage inside the system pipes that could prevent proper system operation. **The dewpoint of nitrogen compressed to maximum 10 psig pressure in the Reliable Double Interlock Type D Preaction System is -52°F.**

The following list of bulletins describes the systems and devices which are used in conjunction with this Device:

Supertrol Double Interlock Type D Preaction System	Bulletin(s)
4" & 6" size	714
2 1/2" size	713
1 1/2" size	720
Control Panel	707/708
Model A-2 Pressure Maintenance Device	251
Model C Pressure Maintenance Device	252
Low Pneumatic Pressure Switch (System Sensor)	D770-08-00

Operation (Ref. Figure 1)

The high pressure nitrogen contained in a cylinder is reduced by the adjustable pressure regulator (Item 1) to a recommended setting of 80 psig. The optional adjustable low pressure switch (Item 5) recommended pressure setting is 50 psig. Should cylinder pressure drop below this level, the low pressure switch sends a warning signal to the Notifier RP1001 Control Panel used with Supertrol systems.

Installation

To prevent damage to the equipment or a personal injury, retaining straps must be used to secure the nitrogen cylinder to the wall or a beam. A second cylinder, used as a backup, must also be secured.

Before mounting the pressure regulator, inspect both the cylinder outlet and the regulator inlet for damaged threads or foreign matter (contaminated threads, oil and grease). Remove foreign matter with a clean cloth, replace the cylinder having damaged threads and return the pressure regulator with damaged threads to Reliable.

Carefully open the cylinder control valve a small amount to dislodge any foreign matter from inside the valve and prepare it for the pressure regulator mounting.

Apply thread sealant to male threads and tighten the regulator to the cylinder control valve securely with a wrench. Do not over tighten. Use a soap solution at all joints to verify leak-tight connections. In a similar way, install and test the rest of the Regulating Device and connect it to the system supervisory pressure port.

Adjust the optional low pressure switch to actuate at 50 psig and wire it to the Model RP1001 Control Panel.

It is strongly recommended that the first nitrogen cylinder be used for the initial system charge only and then replaced with a second fully charged cylinder for supervisory pressure maintenance.

Inspection and Maintenance

The Reliable Nitrogen Regulating Device should be checked for its proper operation and condition at least annually and parts cleaned, adjusted or replaced as necessary.

Verify that the pressure regulator output is set to 80 psig and adjust the regulator if required. No field repairs are allowed on the pressure regulator. Return it to Reliable or its representatives for a replacement.

Verify that the optional adjustable low pressure switch is set to operate at 50 psig, wired to the control panel and the wiring insulation is in good condition.

Verify that the backup nitrogen cylinder is fully charged and both cylinders are securely strapped in their position.

When used in conjunction with the Reliable Model A-2 Pressure Maintenance Device, verify that its bypass valve is fully closed.

Inspection should be performed by qualified personnel only.

Reliable...For Complete Protection

Reliable offers a wide selection of sprinkler components. Following are some of the many precision-made Reliable products that guard life and property from fire around the clock.

- Automatic sprinklers
- Flush automatic sprinklers
- Recessed automatic sprinklers
- Concealed automatic sprinklers
- Adjustable automatic sprinklers
- Dry automatic sprinklers
- Intermediate level sprinklers
- Open sprinklers
- Spray nozzles
- Alarm valves
- Retarding chambers
- Dry pipe valves
- Accelerators for dry pipe valves
- Mechanical sprinkler alarms
- Electrical sprinkler alarm switches
- Water flow detectors
- Deluge valves
- Detector check valves
- Check valves
- Electrical system
- Sprinkler emergency cabinets
- Sprinkler wrenches
- Sprinkler escutcheons and guards
- Inspectors test connections
- Sight drains
- Ball drips and drum drips
- Control valve seals
- Air maintenance devices
- Air compressors
- Pressure gauges
- Identification signs
- Fire department connection

The equipment presented in this bulletin is to be installed in accordance with the latest pertinent Standards of the National Fire Protection Association, Factory Mutual Research Corporation, or other similar organizations and also with the provisions of governmental codes or ordinances whenever applicable.

Products manufactured and distributed by Reliable have been protecting life and property for over 80 years, and are installed and serviced by the most highly qualified and reputable sprinkler contractors located throughout the United States, Canada and foreign countries.

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