

TECHNICAL NOTE

NITROGEN-PAC™ CONDENSATE DRAINAGE

The purpose of this Technical Note is to provide information for those users of **NITROGEN-PAC™** products who wish to add condensate drainage to their installation.

Compressing ambient air causes normal humidity to condense out of the air stream. Drying the air is necessary for proper operation of a **NITROGEN-PAC™** membrane-based nitrogen generator. Water can accumulate at and be discharged from several places in the **NITROGEN-PAC™** system:

- Compressed air tank (M Series only)
- Air regulator (M Series only)
- Refrigerated dryer
- Coalescing and particulate filters
- Nitrogen receiver

Because **NITROGEN-PAC™** systems use a refrigerated dryer, the likelihood of water discharge from the filters and the nitrogen receiver is low, but provisions for the possibility of water discharge from all drain points should be made. The water could be permitted to discharge onto the floor, but piping the system drain(s) to a floor drain or other suitable disposal point is desirable.

See Figure 1. **NITROGEN-PAC™ SC Series** systems have all drain points connected to a common outlet, so there is only one connection point to be piped to a drain.

See Figure 2. **NITROGEN-PAC™ M Series** systems are modular for maximum installation flexibility. Each module has its own drain point.

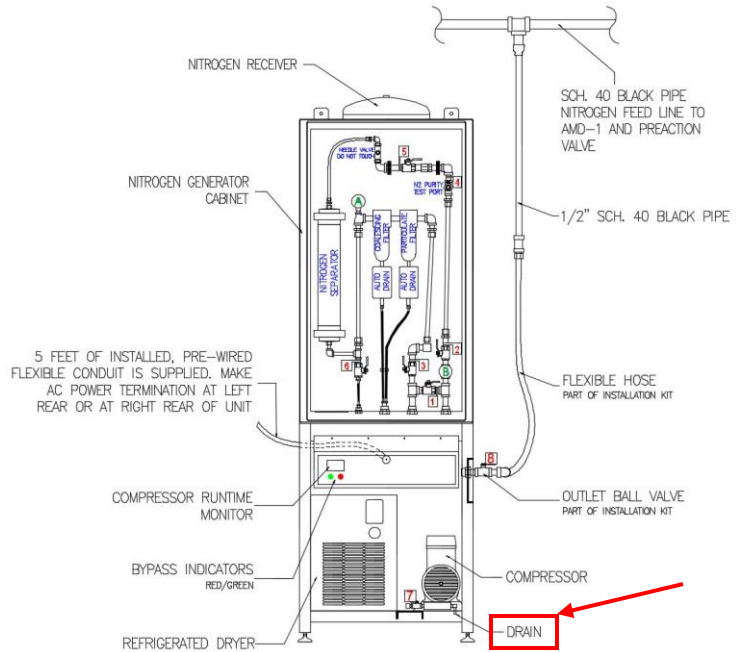


FIGURE 1 – NITROGEN-PAC™ SC

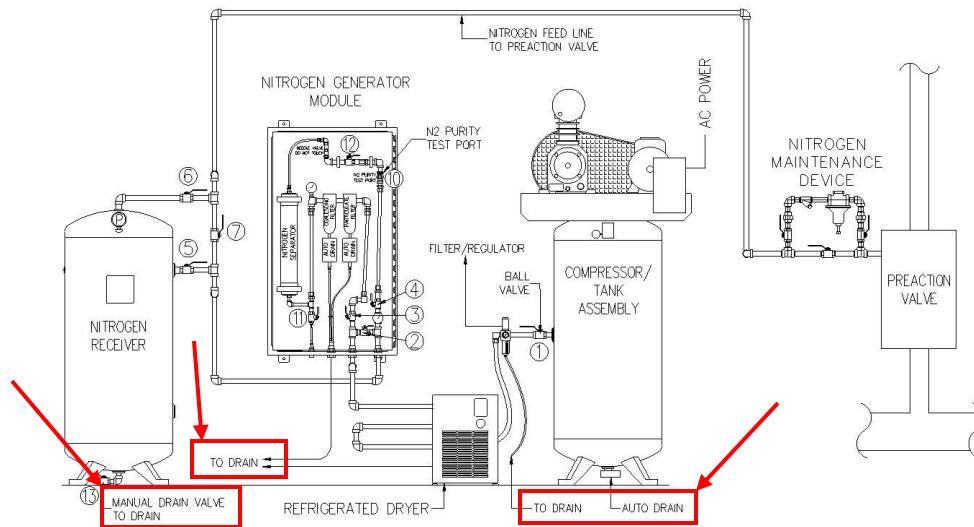


FIGURE 2 – NITROGEN-PAC™ M SERIES

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Occasionally, the **NITROGEN-PAC™** equipment will not be in reasonably close proximity to a floor drain, slop sink, or other convenient disposal point. Also, the nearest convenient drain point may be elevated above the **NITROGEN-PAC™** drain outlet(s), rendering simple gravity drainage impractical. In these cases, a small tank and condensate pump assembly may be used to move the drained water. The pump need not be large or elaborate. An example of one manufacturer's pump that has been successfully used is shown in Figure 3, with typical specifications in Figure 4.



NOTE

UNITED Fire Systems does not supply condensate pumps.



IMPORTANT

Power for the condensate pump should be provided from a properly installed and grounded 115 VAC 60 Hz 3-prong receptacle. **DO NOT** attempt to provide power from the receptacle on the rear of the **NITROGEN-PAC™ SC** control box (intended **ONLY** for the refrigerated dryer) or from any terminals or connections inside the **NITROGEN-PAC™ SC** control box.



IMPORTANT

Local regulations may require the installation of an oil / water separator in condensate drain piping. Verify local requirements before completing installation.



FIGURE 3
TYPICAL CONDENSATE PUMP

More information on **NITROGEN-PAC™** condensate drain connections can be found in the respective UNITED Fire Systems Installation, Commissioning, and Maintenance Manuals, which are available for download at no charge from our website:

[NITROGEN-PAC™ SC Series Manual](#)
P/N 30-NPSICM-000

[NITROGEN-PAC™ M Series Manual](#)
P/N 30-NPMICM-000

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HP	Volts	Hz	Amps	Running Watts	Gallons per Hour at Ht.				Shut Off	Weight (lb.)
					1'	5'	9'	15'		
1/50	115	60	1	60	65	50	30	—	15'	4.4
<ul style="list-style-type: none"> • ABS tank, motor cover, and volute • 1/2 gallon rustproof ABS tank capacity • Stainless steel shaft • Automatic Snap-action switch • Removable 3/8" (9.5 mm) barbed check valve • Reversible tank cover with 3 inlet drain holes for flexible installation. 					<ul style="list-style-type: none"> • Intermittent Liquid temp. up to 140°F • 3 inlet drain holes • Thermal overload protection • Safety switch • 6' power cord with 3 prong molded plug 					

FIGURE 4
SPECIFICATIONS - TYPICAL CONDENSATE PUMP

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This literature is provided for informational purposes only. United Fire Protection Corporation assumes no responsibility for the product's suitability for a particular application. The product must be properly applied to perform as intended.