NORTH SLOPE CHILLERS

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WORLD -CLASS CUSTOM CAPABILITIES

SHORTEST INDUSTRY LEAD TIMES

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NORTH SLOPE CHILLERS

PROTECT CRITICAL MATERIALS
Numerous industries need to protect expensive and valuable materials from excessive heat.

MAINTAIN ESSENTIAL TEMPERATURES
Precise temperature control for your processes that only requires an electrical outlet

SAVE TIME & MONEY
Reliable and efficient, North Slope Chillers products will prevent waste and lost time, protecting your bottom line.

INCREASE OPERATIONAL EFFICIENCY
Improve overall efficiency of your operation when temperature control is in your hands.

ENJOY PEACE OF MIND
Rest easy, knowing North Slope Chillers will solve your temperature dilemmas.

+

WORLD -CLASS CUSTOM CAPABILITIES

SHORTEST INDUSTRY LEAD TIMES

WHAT IS AN INDUSTRIAL CHILLER?

Industrial chillers are used to cool process fluids, typically water or a water/glycol mix. These process fluids remove heat from machinery, equipment, foods, chemicals, etc. The fluid absorbs the heat from the external source and is then recirculated through the chiller to cool again and again.

INDUSTRIAL COOLING

North Slope Chillers provides several performance levels of industrial cooling equipment with precise temperature control that is compact, yet efficient. Easy to install, remove, and relocate, you will be happy to have a chilling system that is painless and easy to use. Preserve your valuable materials and equipment while avoiding downtime when you use North Slope Chillers and Fluxwrap accessories to maintain and regulate safe temperatures.

IT'S LIKE A FRIDGE

Industrial chillers work a lot like a refrigerator, but instead of cooling the inside of a refrigerator they cool water inside of a tank. Chillers are comprised of a refrigeration circuit and a fluid circuit. The refrigeration circuit has four main components: Compressor, Condenser, Expansion Valve and Evaporator. Chillers use refrigerant such as R134a to cool fluid. The fluid circuit usually includes a process fluid reservoir, a pump, filters and a heat exchanger to remove heat as the fluid circulates. Refrigeration uses the principles of thermodynamics to efficiently move heat from one area to another. North Slope Chillers remove heat from the chilled fluid and move it to the ambient air.

INDUSTRIES WE SERVE

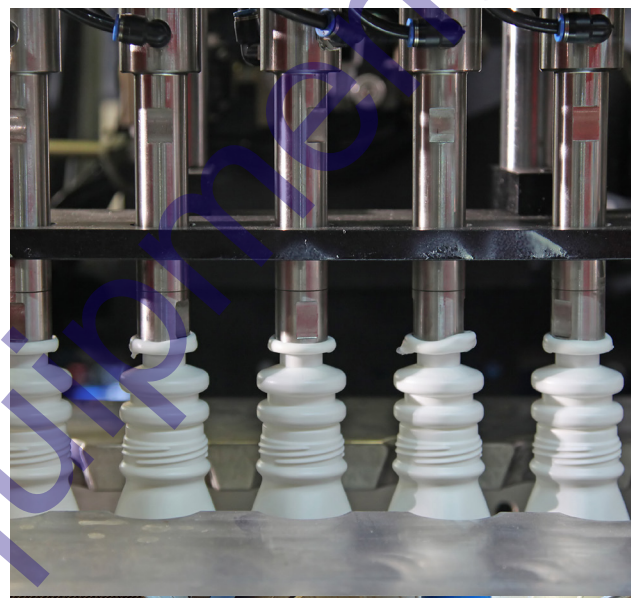
A wide variety of industries use cooling systems to preserve materials and equipment and to slow and improve processes. North Slope Chillers are an easily portable cooling solution for these industries.

CHEMICAL PROCESSING

Chemical processing is one of the most demanding industries in the world. The level of exactness in the processing and handling of chemical requires equipment that is reliable and will meet extreme processing needs. One of the most challenging aspects of processing, handling, and storage of chemicals is maintaining consistent temperatures.

FOOD & BEVERAGE

Heat is an important part of the fermentation process. If heat enters the process at the wrong time, or lasts for too long, undesired flavors and aromas develop. In food production exposure to warmer temperatures can age and spoil the product. Controlling the temperature of food and beverages will greatly extend the life and quality.



PLASTICS

Process engineers that work in plastics know that cooling effectiveness during extrusion and molding is the difference between a commercially viable product or a misshapen pile of expensive spent polymers and dissatisfied customers. Achieving and maintaining ideal temperatures is critical to success in this industry.

PROCESS COOLING

Is your state-of-the-art system producing unacceptably-high heat along certain points in the process? No one wants to remove an entire system to solve this high heat dilemma. When materials or systems overheat, you are risking damage to the materials and/or the equipment itself. Industrial cooling solutions can be big and expensive. Process cooling is less of a stress with the cooling power and temperature control of North Slope Chillers.

INDUSTRIES WE SERVE

Industrial chilling can improve the performance and efficiency of many different industries. From MRI cooling to cooling ink, the applications are varied, but all essential to each industry's success.

PRINTING

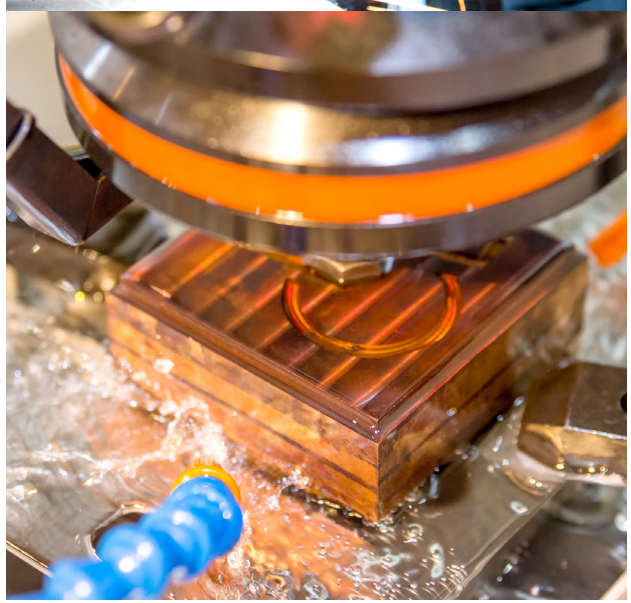
Throughout the printing process heat is generated as a result of friction between component parts and then transferred to ink and paper. There is also an elevated ambient temperature within the press room. This increased heat can deteriorate the quality of the ink and the overall quality of the printing operation. Cooling methods can preserve and improve print jobs and extend the life of printing equipment.

MEDICAL

Cooling of MRI's, CT's, X-Ray's, solenoids and helium compressors is essential and greatly affects the equipment uptime and availability. If the water pumping through your system is not cool enough, your MRI will lock-up and scanning will cease. Maintaining system safe temperatures ensures that the equipment is ready, working and available whenever it is needed.

WELDING

Effective cooling is critical to a successful welding operation. When welding equipment is cooled properly you will see longer weld tip life with decreased equipment downtime, uniform quality spot welds and prevent hot or mushroomed tips, and you will prevent SCRs from overheating. Using an industrial chiller as part of your welding operation guarantees cool, recirculating water on demand.



LASER & EDM

Both EDM and Laser Machining processes generate intensely high levels of heat. Too much heat will threaten processes altogether. Industrial chillers supply the cool water needed to regulate these processes and keep the operation running efficiently.

3 LEVELS OF CHILL TO

MEET YOUR NEEDS

North Slope Chillers offers a line of lite-industrial compact chiller units ideal for entry-level applications, standard process cooling systems, and a line of chillers for intense chilling needs. If you find that you require something not found in our Frost, Freeze, and Deep Freeze chiller lines, North Slope can build custom solutions to fit your specific needs with the same quality as our standard units and in a timely manner. Your solutions are a simple phone call away.

FROST

This ***lite-industrial portable chiller*** is a fantastic entry-level unit if you are ready to test the waters with chilling.

- *Single container/application chilling*
- *Pumps Max flow rate is 18 LPM. fluid temperature range 45°F - 85°F*
- *Cool contents down to 55°F with ease*

FREEZE

Meet the dependable and powerful compact chiller. Freeze is North Slopes' standard industrial chiller. It's a lot of chilling power in a little package.

- *Cools fluids between 42°F-80°F*
- *Robust condensing unit*
- *Stainless steel reservoir*
- *High horsepower.*

DEEP FREEZE

Bring on Deep Freeze for ultimate industrial cooling. Intended to provide supreme industrial chilling, Deep Freeze shares many of the same hefty qualities of Freeze, PLUS . . .

- *The capacity to cool from 10°F to 60°F*
- *Fully insulated internal parts to ensure no internal temperature loss*

NEED A CUSTOM SOLUTION?
we've got you covered!

CATCH A COLD WITH FROST

This lite industrial portable chiller system is a fantastic entry-level unit if you are ready to test the waters with chilling. Ideal for single container/ application chilling, Frost pumps 3.5 gallons per minute. Frost's fluid temperature range is 45°F - 85°F.

CHILLER: Air-cooled, stand-alone chiller designed for indoor operation. Capacity is 3,000 BTU's/hr at rated conditions. Set up for ambient temperatures 35° F to 100° F (for higher or lower ambient conditions please consult North Slope).

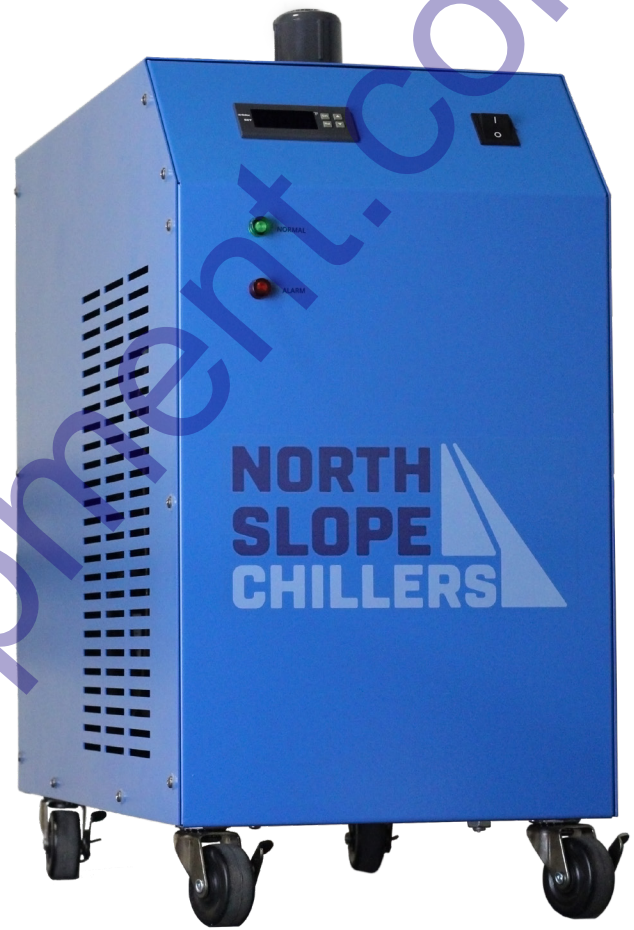
PUMP: This chiller is equipped with a continuous duty, non-ferrous pump. Max flow rate is 2.5 GPM. The fluid types are to be water or water/glycol (for other fluids consult manufacturer.

EVAPORATOR: Submersed copper coil continuously formed is the most reliable design in the industry. It is less susceptible to freezing and fluid contaminations.

RESERVOIR: Corrosion resistant insulated tank; It will include: drain, sight glass and manual fill port. Sight glass is easily visible from the exterior of the chiller.

ELECTRICAL:

- Available as 115v/1/60Hz
- On/Off
- Current = 5.7A @ 110V



STANDARD CHILLER FEATURES

- Rated at ambient temperatures from 35° F to 100° F
- Hermetically sealed compressor
- Lite industrial 2.5 GPM centrifugal pump
- Non-ferrous piping system
- Submersed copper coil evaporator
- 1.5 Gallon corrosion resistant thermally insulated reservoir
- Environmentally acceptable r410a refrigerant
- Powder-coated steel cabinet
- Available voltage: 110v
- Standard 110V cord and plug for electrical connections
- Mounted on 4casters for easy mobility

THE COLD STANDARD

Meet the compact chiller that is both dependable and powerful. Freeze is North Slopes' standard industrial chiller that cools fluids between 42°F-80°F. A small workhorse, Freeze boasts a robust condensing unit, a stainless steel reservoir, and high horsepower. It's a lot of chilling power in a little package.

CHILLER: Air-cooled, stand-alone chiller designed for indoor operation. Capacity is up to 24,000 BTU's/hr at rated conditions. Set up for ambient temperatures 35° F to 100° F (for higher or lower ambient conditions please consult North Slope).

COMPRESSOR/CONDENSING UNIT: The Copeland Condensing Unit is the most energy efficient and reliable of its size.

PUMP: This chiller is equipped with a continuous duty, non-ferrous pump. The fluid types are to be water or water/glycol (for other fluids consult factory). Output pressure gauge is standard.

RESERVOIR: Stainless steel tank with fully welded stainless steel couplers; it will include: drain, sight glass, and manual fill tube. The sight glass is easily visible from the exterior of the chiller.

ELECTRICAL:

- Available as 115v/1/50-60Hz or 230/1/50-60Hz
- On/Off

STANDARD CHILLER FEATURES

- Rated at ambient temperatures from 35° F to 100° F
- Hermetically sealed compressor
- Continuous duty, non-ferrous pump
- Non-ferrous piping system
- Stainless steel tank with fully welded stainless steel couplers
- Environmentally acceptable R134a refrigerant
- Powder-coated steel cabinet (stainless steel is also available)

NEED A CUSTOM SOLUTION?
we've got you covered!

THE COLDEST OF THE COLD

Bring on Deep Freeze for ultimate industrial cooling. Intended to provide supreme industrial chilling, Deep Freeze shares many of the same hefty qualities of Freeze, along with the capacity to cool from 10°F to 60°F and fully insulated internal parts to ensure no internal temperature loss. Keep your critical materials and equipment cool even in hot conditions.

CHILLER: Air-cooled, stand-alone chiller designed for indoor operation. Capacity is up to 24,000 BTU's/hr at rated conditions. Set up for ambient temperatures 35° F to 100° F (for higher or lower ambient conditions please consult North Slope).

COMPRESSOR/CONDENSING UNIT: The Copeland Condensing Unit is the most energy efficient and reliable of its size.

PUMP: This chiller is equipped with a continuous duty, non-ferrous pump. The fluid types are to be water or water/glycol (for other fluids consult factory). Output pressure gauge is standard.

RESERVOIR: Stainless steel tank with fully welded stainless steel couplers; it will include: drain, sight glass, and manual fill tube. The sight glass is easily visible from the exterior of the chiller.

ELECTRICAL:

- Available as 115v/1/50-60Hz or 230/1/50-60Hz
- On/Off

STANDARD CHILLER FEATURES

- Rated at ambient temperatures from 35° F to 100° F
- Hermetically sealed compressor
- Continuous duty, non-ferrous pump
- Non-ferrous piping system
- Corrosion resistant, thermally insulated reservoir
- Environmentally acceptable r404a refrigerant
- Powder-coated steel cabinet
- Available voltage: 230/1, 230/3, 460/3
- Mounted on 4 casters for easy mobility

NEED A CUSTOM SOLUTION?
we've got you covered!

COLD ← FLUXWRAP DOES DOUBLE-DUTY → HOT

NORTH SLOPE CHILLERS' FAVORITE ACCESSORY

FLUXWRAP

Flux wrap can chill materials in drums, totes, tanks and all manner of vessels even when a heat exchanger is not currently present. Fluxwrap applies chilling to many vessels that were previously difficult or financially unfeasible to chill. Do your temperature needs change? Simply change the temperature of the fluid running through Fluxwrap and you have an effective medium for heating. Fluxwrap is a versatile fluid temperature control solution.

- Proprietary multi-channel fluid path allows maximum flow with minimal pressure
- Elastic strap design ensures good thermal conductivity between blanket and drum
- Wrap conforms to drum or tote to maintain thermal contact over uneven surfaces
- Lightweight compact design
- Full coverage cooling
- Comes standard with insulated wrap for thermal control and to reduce condensation

PERFECT PARTNERS

Ideal for process cooling, food and beverage, chemicals, plastics, and industries looking to control high temperatures.

Small footprint and easily installed and removed

Available in a variety of performance levels from lite industrial to heavy-duty low temperature

Innovative system removes heat from container and transfers it to the air using water or water/glycol fluid combinations

Chillers are stand-alone units requiring only an electrical hookup

Fluxwrap elastic strap design ensures good thermal conductivity between wrap and container creating full-coverage cooling

SAVE MATERIALS & MONEY

GE found Powerblanket through a third party distributor to seek a cooling solution for a plant in Mexico. They had 55 gallon drums of varnish, epoxy, and resins and were losing up to eight barrels (each valued at $5,000.00) each week. The ambient conditions of roughly 125°F caused the material in the drum to cure while still in the barrel. Powerblanket supplied six chillers and six wraps to stage on production line to eliminate loss.

THE COMPLETE SOLUTION

Often, a cooling solution requires engineering expertise and custom attention. As a premier industrial chiller manufacturer, North Slope Chillers is happy to create the complete cooling solution to quickly meet your needs.

WATER FILTER

Add a filter on the inlet to keep the inside of the process chiller clean, even if the fluid is dirty. UL or CE rated.

ANTI BACKFLOW

If the chilling fluid is located above the chiller, anti-backflow prevents fluid from flowing back into the system when the process chiller is turned off.

HEATER

Add a heater to the commercial chiller. Whether you need increased or decreased temperatures, your commercial water chiller will be equipped to do both jobs. Maintain desired temperatures for your critical materials without changing equipment.

DEIONIZED CHILLER

Deionized water is one of the most aggressive solvents known, and corrodes many metals including copper. However, even copper-free cooling systems have purity limits of >0.5 µS/cm to avoid the dissolution of deposits, which may impair functionality. Deionized chillers are an effective application for lasers, medical equipment, semiconductor manufacturing, laboratory instrumentation, pharmaceutics, cosmetics, food processing, plating, and other chemical processing.

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North Slope Chillers' world-class engineering team solve every kind of temperature problem from simple to very complex. Our expertise guarantees satisfied customers in a very short turnaround time.

FOR MORE CONTROL ADD BEACON

Beacon is an advanced smart temperature control system that allows you to monitor and control North Slope Chillers products remotely from your smart phone or computer. Enjoy greater peace of mind.

HOW TO DETERMINE CHILLER SIZE

STEP 1

Calculate Temperature Differential (ΔT°F)

ΔT°F = Incoming Water Temperature (°F) - Required Chilled Water Temperature

Example: 85°F - 75°F = 10°F

STEP 2

Calculate BTU/HR

BTU/hr = Gallons per hr x 8.33 x ΔT°F

Example: (4 gpm x 60) x 8.33 x 10°F = 19,992 BTU/hr

STEP 3

Calculate Tons of Cooling Capacity

Tons = BTU/hr ÷ 12,000

Example: 19,992 BTU/hr ÷ 12,000 = 1.666 tons

STEP 4

Oversize the Chiller by 20% and Round Up

Ideal Size in Tons = Tons x 1.2

Example: 1.666 tons x 1.2 = 1.9992 tons ; a 2 ton chiller is needed

CHILLER NEEDS WORKSHEET

1. What process or process equipment needs to be cooled?
2. Is there one large machine or several smaller machines that need cooling?
3. What is your desired supply temperature?
4. What is the heat load?
5. What are the lowest and highest possible ambient temperatures?
6. What is the total flow required by the process?
7. Is the flow to the process steady or varied?
8. What is the maximum fluid pressure required by the process?
9. What fluid is being cooled? (water, water/glycol, deionized water)

USING FLUXWRAP WITH NORTH SLOPE CHILLERS

IT'S SIMPLE

1. Wrap the jacket around your container and attach the flexible neoprene ends to secure the Fluxwrap.
2. Attach the hoses to the temperature control unit
3. Install the provided insulation to increase thermal control and reduce condensation.
4. Turn on the temperature control unit and begin regulating temperatures.

NORTH SLOPE CHILLERS

Product Type	Model Number	Fluid Temperature Range (°F)	Refrigerant	Pump	Reservoir Capacity	Cooling Capacity	Capacity (BTU/hr) *	Dimensions	Weight (Approx)	Amps
FROST	NSC0250-FROST	45°F - 85°F	r410a	2.5 GPM MAX	1.5 GALLON	3,000	3,000	22"L x 11"W x 21.5"H	64 lbs	6.5
	NSC1000-FROST	45°F - 85°F	r410a	3.5 GPM MAX	4 GALLON	12,000	12,000	26"L x 18.5"W x 35"H	74 lbs	8

Product Type	Model Number	Fluid Temperature Range (F)	Refrigerant	Pump	Reservoir Capacity	Cooling Capacity (BTU/hr)	Dimensions	Weight (Approx)	Amps	Voltage
FREEZE	NSC0500	42°F - 80°F	r134a	4 GPM @ 50 PSI	3.5 GALLON	6,000	28¼"L x 22½"W x 32½"H	175 lbs	15A @ 110V	110V
	NSC1000	42°F - 80°F	r134a	4 GPM @ 50 PSI	12 GALLON	12,000	34½"L x 28¼"W x 39"H	260 lbs	14A @ 230V/1	230/1(standard), 230/3 or 460/3
	NSC2000	42°F - 80°F	r134a	0 GPM @ 28 PSI	12 GALLON	24,00	34¾"L x 43¼"W x 40"H	390 lbs	22A @ 230V/1	230/1(standard), 230/3 or 460/3

Product Type	Model Number	Fluid Temperature Range (F)	Refrigerant	Pump	Reservoir Capacity	Cooling Capacity (BTU/hr)	Dimensions	Weight (Approx)	Amps	Voltage
DEEP FREEZE	NSC1000-LT	10°F - 60°F	r404a	4 GPM @ 50 PSI	12 GALLON	12,000	34½"L x 28¼"W x 39"H	260 lbs	14A @ 230V/1	230/1(standard), 230/3 or 460/3
	NSC2000-LT	10°F - 60°F	r404a	10 GPM @ 28 PSI	12 GALLON	24,000	34¾"L x 43¼"W x 40"H	390 lbs	22A @ 230V/1	230/1(standard), 230/3 or 460/3

fluxwrap

Product Type	Model #	Maximum Pressure Rating	Flow Rate	Connection	Max Temperature	Cooling Fluid	Approx Fluid Volume	Wrap Dimensions	Min/Max Surface Temperature
FLUXWRAPS	PBICE05-FC	6 PSI @ inlet	4 GPM @ 5 PSI	¾" Barbed Fitting	120°F (50°F Water/Glycol mix)	Water (if fluid temp is greater than 45F) -OR- Propylene Glycol / Water (50/50 max concentration) -OR- Ethylene Glycol / Water (50/50 max concentration)	1/8 Gallon	38" x 8 1/4"	-10°F/150°F -23.3°C/65.5°C
	PBICE15-FC						3/4 Gallon	47" x 22 3/4"	
	PBICE30-FC						5/8 Gallon	60" x 23 1/4"	
	PBICE55-FC						1 ½ Gallon	76" x 30 1/4	
	PBICE275-FC						4 Gallons	Panel a - 1x) 44" x 38 1/2" Panel b - 2x) 45 3/4" x 38 1/2" Panel c - 1x) 39" x 30 3/4"	