



UNIVEST[®]

Insulation Systems

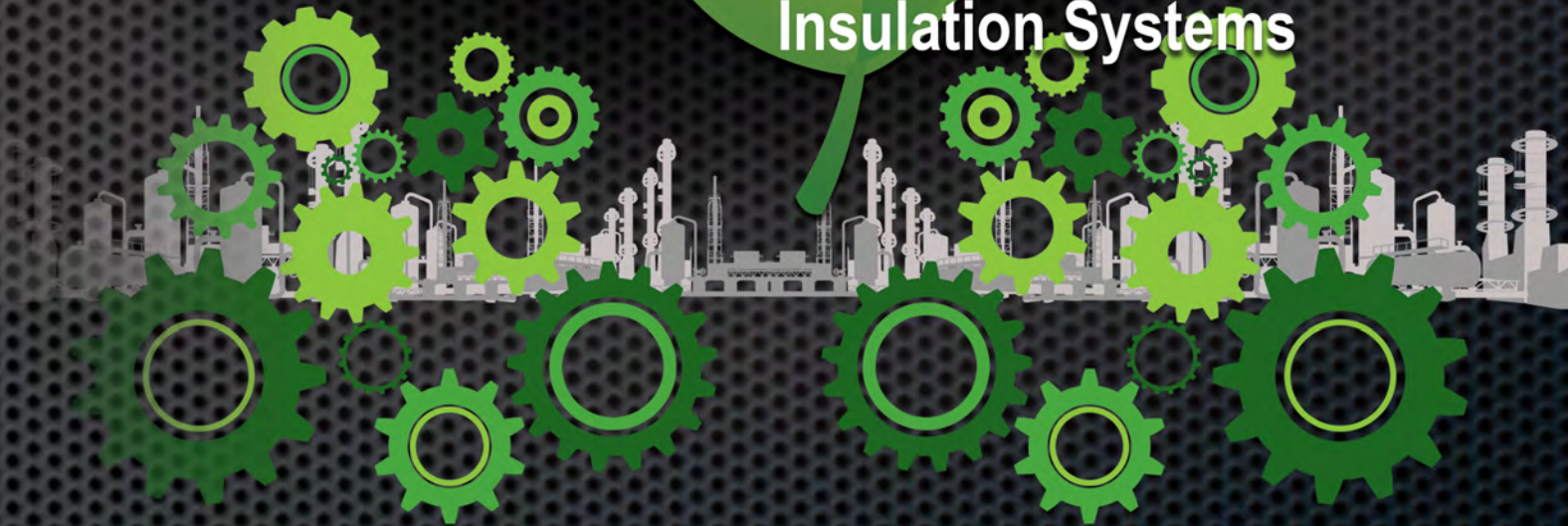


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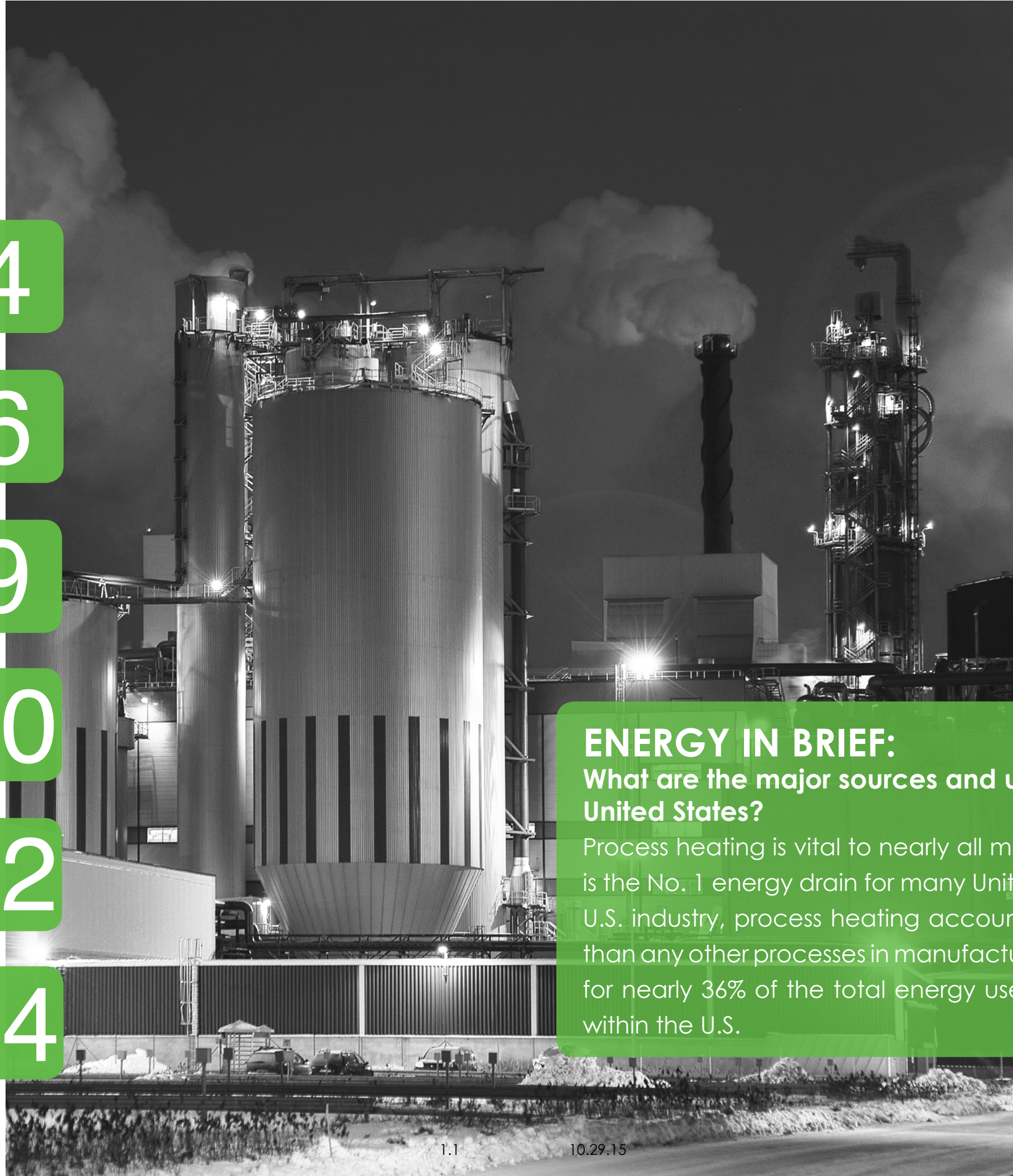
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UNIVEST® INSULATION SYSTEMS:

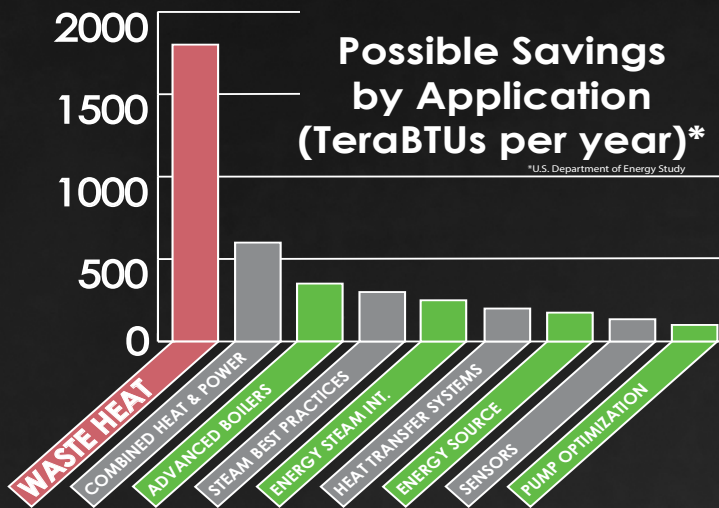
ENERGY IN BRIEF:

What are the major sources and users of energy in the United States?

Process heating is vital to nearly all manufacturing processes. Yet, it is the No. 1 energy drain for many United States industrial facilities. In U.S. industry, process heating accounts for more direct-energy use than any other processes in manufacturing. Industrywide, it accounts for nearly 36% of the total energy used in industrial manufacturing within the U.S.

The Hard Reality and a Difficult Truth:

Industrial manufacturers use a significant amount of the energy in this country. Energy and natural resources are the lifeblood of manufacturing. Yet, energy consumption in U.S. industry — and its impact on the economy — is greater than the sum of its parts.

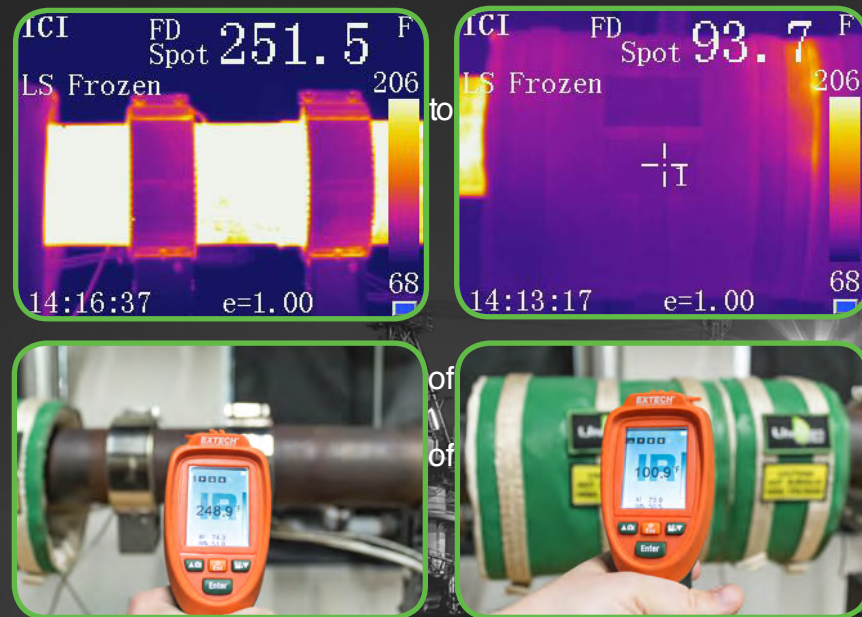


The Predicament:

In most manufacturing facilities today, more than half of the heat generated goes to waste. During these manufacturing processes, as much as 20% to 50% of the energy consumed is lost via waste heat. These discharges are the result of process inefficiencies and the inability of the existing process to recover and use the excess energy streams.

The Solution:

A valuable approach improving overall energy and operational efficiency is to harness and reuse the lost or waste heat that is intrinsic to all industrial manufacturing. For that reason, using thermal insulation to reduce the consumption energy in the form of heat is the most effective way accomplishing this goal.



Insulation saves over 600 times more energy each year than all of the compact fluorescent lights (CFLs), ENERGY STAR Appliances and ENERGY STAR Windows combined. (U.S. Environmental Protection Agency, ENERGY STAR Homes. Calculations performed by B. McNary, October 2006.)

Insulation and Process Control: A properly installed insulation system on bare process lines and equipment can increase the efficiency of a process system by 95% or more. By reducing the heat loss or gain, insulation can help maintain the process temperature to a pre-determined value.

PROCESS	APPLICATION	EQUIPMENT	INDUSTRY
Agglomeration-Sintering	Metals Production	Various Furnace Types, Kilns, Microwaves	Primary Metals
Calcining	Lime Calcining	Various Furnace Types	Cement, Wallboard, Pulp and Paper Manufacturing, Primary Metals
Curing and Forming	Coating, Polymer Production, Enameling	Various Furnace Types, Ovens, Kilns, Lehrs, Infrared, UV, Electron Beam, Induction	Ceramics, Stone, Glass, Primary Metals, Chemicals, Plastics and Rubber
Drying	Water and Organic Compound Removal	Fuel-Based Dryers, Infrared Resistance	Stone, Clay, Petroleum Refining, Agricultural and Food, Pulp and Paper, Textile
Forming	Extrusion, Molding	Various Ovens and Furnaces	Rubber, Plastics, Glass
Fluid Heating	Food Preparation, Chemical Production, Reforming, Distillation, Cracking, Hydrotreating, Visbreaking	Various Furnace Types, Reactors, Resistance Heaters, Microwave, Infrared, Fuel-Based Fluid Heaters, Immersion Heaters	Agricultural and Food, Chemical Manufacturing, Petroleum Refining
Heating and Melting-High-Temperature	Casting, Steelmaking, Glass Production	Fuel-Based Furnaces, Kilns, Reactors, Direct Arc, Induction, Plasma, Resistance	Primary Metals, Glass
Heating and Melting-Low-Temperature	Softening, Liquefying, Warming	Ovens, Infrared, Microwave, Resistance	Plastics Rubber, Food, Chemicals
Heat Treating	Hardening, Annealing, Tempering	Various Fuel-Based Furnaces, Ovens, Kilns, Lehrs, Laser, Resistance, Induction, Electron Beam	Primary Metals, Fabricated Metal Products, Glass, Ceramics
Incineration/Thermal Oxidation	Waste Handling/Disposal	Incinerators, Thermal Oxidizers, Resistance, Plasmas	Fabricated Metals, Food, Plastics, and Rubber, Chemicals
Metals Reheating	Forging, Rolling, Extruding, Annealing Galvanizing, Coating, Joining	Various Types of Furnace, Ovens, Kilns, Heaters, Reactors, Induction, Infrared	Primary Metals, Fabricated Metal Products
Separating	Air Separation, Refining, Chemical Cracking	Distillation, Membrane Filter Presses	Chemicals
Smelting	Steelmaking and Other Metals (e.g., Silver)	Various Types of Furnaces	Primary
Other Heating Processes	Food Production (including Baking, Roasting, and Frying), Chemical Production, Sterilization	Various Types of Furnaces, Oven, Reactors and Resistance Heaters, Microwave, Steam, Induction, Infrared	Agricultural and Food, Glass, Ceramics, Plastics and Rubber, Chemicals

Courtesy the United States Department of Energy Office of Energy Efficiency and Renewable Energy, Industrial Technologies Program, in cooperation with the Industrial Heating Equipment Association, 2007

NOTE: Many process heating applications do not fall in the preceding categories; however, they can account for a significant amount of industrial energy use, collectively. The data table above summarizes the processes and identifies the applications, equipment and industries where these processes are commonly used.

UNIVEST® INSULATION SYSTEMS ARE USED TO PERFORM ONE OR MORE OF THE FOLLOWING FUNCTIONS:

PREVENT OR REDUCE DAMAGE TO EQUIPMENT

FACILITATE TEMPERATURE CONTROL OF A PROCESS

CONTROL SURFACE TEMPERATURES FOR PERSONNEL PROTECTION AND COMFORT

CONSERVE ENERGY BY REDUCING HEAT LOSS OR GAIN

Using UniVest® Insulation Systems IN ...

» The market sectors with attractiveness for waste heat recovery include:

- Plastic processing
- Gas pipeline compressor stations
- Oil and gas extraction
- Petroleum and coal products manufacturing
- Cement plants
- Chemical plants
- Ethanol plants
- Pulp and paper mills
- Steel and metal manufacturing and refineries
- Glass manufacturing and melting
- Incinerators
- Brick manufacturing
- Artificial synthetic fibers, rubber and resin manufacturing

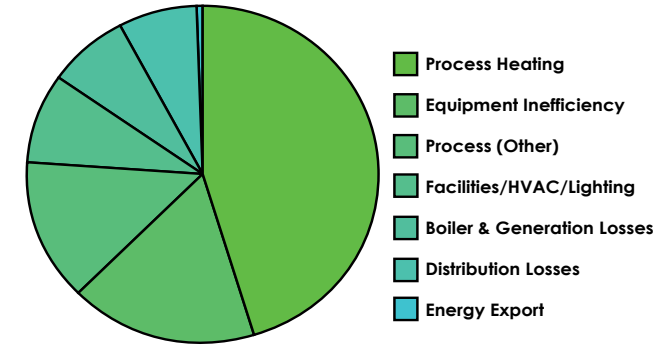
Using UniVest® Insulation Systems ON ...

» Some of the potential sources of waste heat include:

- Process heaters
- Furnaces, ovens or kilns
- Conductive, convective and radiative losses from hot equipment surfaces
- Conductive, convective and radiative losses from heated product streams
- Natural gas pipeline compressor
- Other natural gas- or oil-fired turbines
- Reciprocating engine exhaust
- Furnaces, air compressors and internal combustion engines

Industrial Energy Usage Chart

Source: U.S. Department of Energy



UniVest® Insulation Systems offer a broad base of superior, energy-saving solutions that conserve energy, preserve process temperatures and improve workplace safety. UniVest® Insulation Systems are used on various applications within the process industry where heat conservation and process temperature are concerns. Virtually any type of manufacturing process that operates at high temperatures is a potential UniVest® customer.

Unlike most removable insulation systems, UniVest® Insulation Systems are outfitted with standard, readily available off-the-shelf components to meet any custom fabricated requirement. Virtually any component in the product line can be modified for a pick-and-place application of componentized assemblies — similar to building blocks. Whether your needs are simple or highly complex, UniVest® Insulation Systems can help.

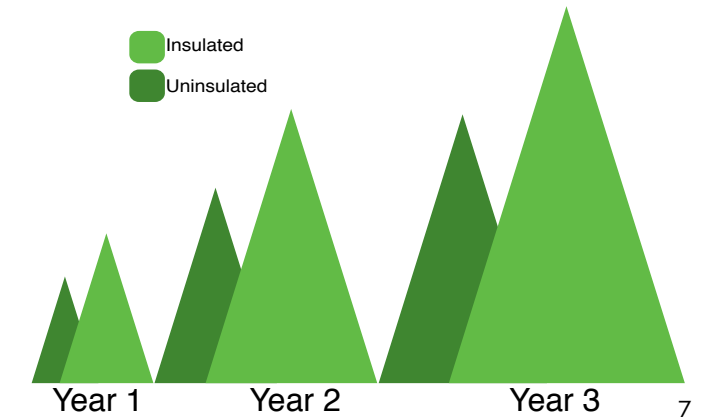


DID YOU KNOW ...

There are more than two million possible combinations of the UniVest® Insulation Jacket that can be made by using any of the products in the UniVest® Insulation Systems line.

UniVest® Insulation Systems will generally pay for themselves in less than 12 months. No other energy project will pay for itself as quickly — and with as little upfront effort — as UniVest® Insulation Systems.

In our energy studies, we have found that efficiency can increase up to 59% by adding insulation to a process heating line. This translates to a seven-month return on investment (ROI) with more than \$500 in savings per year.



UNIVEST® INSULATION JACKETS:

UniVest® Insulation Jackets are cost-effective thermal insulation systems that help improve facilities in a variety of ways by minimizing costs and establishing greater operational stability. UniVest® Insulation Jackets are removable/reusable for easy installation, easy removal and easy reinstallation, making access to equipment and applications simple. These collective advantages allow you to save on energy costs while reducing your organization's overall carbon footprint.



- » UniVest® Insulation Jackets create a **SAFER WORKING ENVIRONMENT** for your employees and increase equipment lifespan by protecting key components from high temperatures.
- » UniVest® Insulation Jackets are made with **STANDARD, READILY AVAILABLE, OFF-THE-SHELF COMPONENTS** that can be easily configured for any custom configuration requirement.
- » UniVest® Insulation Jackets are **COMPLIANT WITH OSHA SAFE-TOUCH STANDARDS** for exposed heated surfaces (if there is a potential for injury).
- » UniVest® Insulation Jackets deliver an **INCREASED CONTROL OF PROCESS TEMPERATURES** to enhance production capacity by reducing the amount of energy needed to keep equipment running at high temperatures.

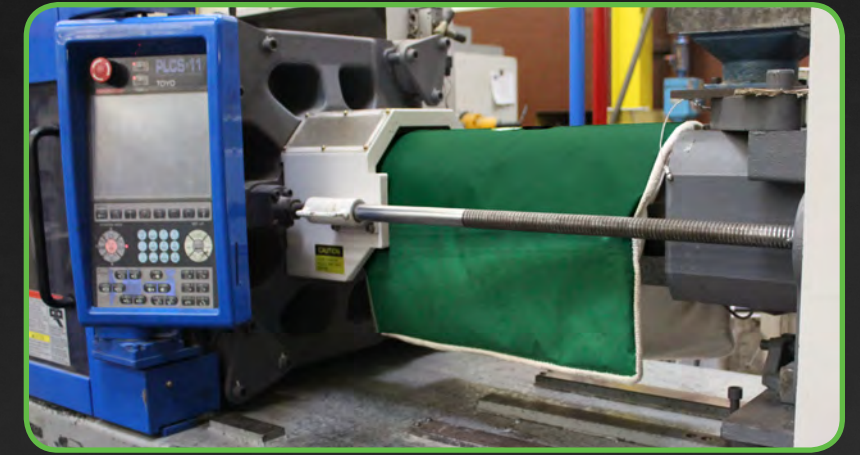
UniVest® Insulation Jackets are constructed in three layers:

- The primary inner layer (hot face) is made of Silica cloth (1800°F).
- The middle layer is made of high-density ceramic fiber (2000°F).
- The outer covering layer (cold face) is made of PTFE coated fiberglass cloth (550°F).



THROW BLANKETS:

UniVest® Throw Blankets are the most basic and simplified version of an insulation system in the UniVest® Insulation Systems line. Throw Blankets are removable/reusable insulation covers that provide temperature protection up to 1500°F. Throw Blankets are ideal for applications that need to be easily and readily accessed.



With the added advantage of being modular, easy to maneuver and simple to install/reinstall, Throw Blankets offer 98% of all the insulation benefits of a UniVest® Insulation Jacket. The ability to drape and/or magnetize Throw Blankets to a desired object makes its application virtually limitless.



Simply measure the area of the desired application and choose from one of our standard sizes.

As per specification, Throw Blankets are manufactured with or without magnets to better suit your requirements for placement, protection and energy efficiency.

WARNING: MAGNETS ARE NOT TO BE USED AROUND ELECTRICAL CONNECTIONS!



For every Btu consumed in the production of insulation, 12 Btus are saved each year by the use of insulation. (Green and Competitive Report: Energy Conservation Management, June 1996)

HOW TO MEASURE FOR UNIVEST®:

Selecting the right size UniVest® Insulation Jacket for your machine is a lot easier than you might think. All you need is a tape measure, and you are ready to go!

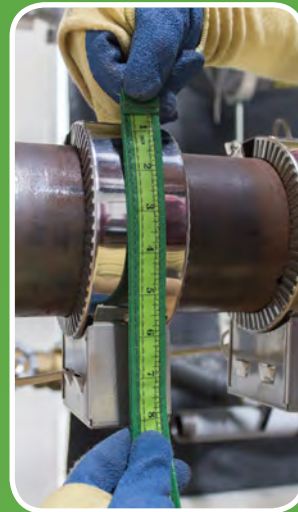
[Click Here For Video Tutorial: How to Measure UniVest®](#)

1. Measure for either the (1) CIRCUMFERENCE OR (2) DIAMETER.



CIRCUMFERENCE

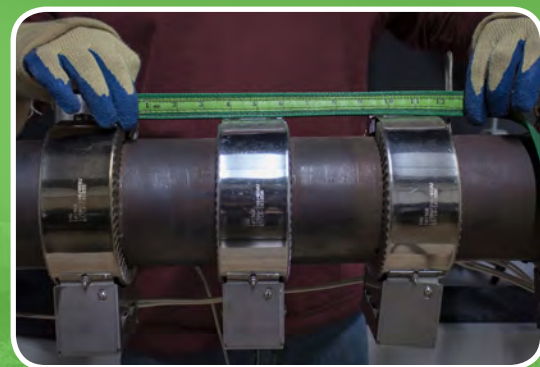
OR



DIAMETER

NOTE: It does not matter which method of measurement you decide to use, just remember that you only need to find your measurement using one of the two ways mentioned above.

2. Measure for the DESIRED WIDTH.



WIDTH

NOTE: After measuring either the circumference or diameter, you also need to measure for the desired width to determine the width of the application you want to insulate.

Warning: When installing or measuring for UniVest®, please follow all safety precautions and use proper and adequate protective safety aids, such as protective gloves and suitable protective clothing. Keep all metal objects away from heater bands. Never use a metal tape for measuring purposes. Failure to do so may result in injury.

3. Find the right UniVest® Insulation Jacket.

NOTE: Now that you have your measurements, you can use the graph below to help you find the appropriate UniVest® Insulation Jacket. Circumference and Diameter (length) measurements are listed in the vertical table rows and width measurements are listed in the horizontal column rows.

WIDTH

CIRCUMFERENCE	DIAMETER	2in (51mm)	4in (102mm)	5in (127mm)	6in (152mm)	8in (203mm)	10in (254mm)	12in (305mm)	14in (356mm)	16in (406mm)
0in-6in (0mm-152mm)	0in-2in (0mm-51mm)	UVST 1302	UVST 1304	UVST 1305	UVST 1306	UVST 1308	UVST 1310	UVST 1312	UVST 1314	UVST 1316
6in-13in (152mm-330mm)	2in-4in (51mm-120mm)	UVST 1902	UVST 1904	UVST 1905	UVST 1906	UVST 1908	UVST 1910	UVST 1912	UVST 1914	UVST 1916
13in-19in (330mm-483mm)	4in-6in (120mm-152mm)	UVST 2502	UVST 2504	UVST 2505	UVST 2506	UVST 2508	UVST 2510	UVST 2512	UVST 2514	UVST 2516
19in-25in (483mm-635mm)	6in-8in (152mm-203mm)	UVST 3102	UVST 3104	UVST 3105	UVST 3106	UVST 3108	UVST 3110	UVST 3112	UVST 3114	UVST 3116
25in-31in (635mm-787mm)	8in-10in (203mm-254mm)	UVST 3802	UVST 3804	UVST 3805	UVST 3806	UVST 3808	UVST 3810	UVST 3812	UVST 3814	UVST 3816
31in-38in (787mm-965mm)	10in-12in (254mm-305mm)	UVST 4302	UVST 4304	UVST 4305	UVST 4306	UVST 4308	UVST 4310	UVST 4312	UVST 4314	UVST 4316
38in-44in (965mm-1118mm)	12in-14in (305mm-356mm)	UVST 5002	UVST 5004	UVST 5005	UVST 5006	UVST 5008	UVST 5010	UVST 5012	UVST 5014	UVST 5016
44in-50in (1118mm-1270mm)	14in-16in (356mm-406mm)	UVST 5602	UVST 5604	UVST 5605	UVST 5606	UVST 5608	UVST 5610	UVST 5612	UVST 5614	UVST 5616
50in-57in (1270mm-1448mm)	16in-18in (406mm-457mm)	UVST 6302	UVST 6304	UVST 6305	UVST 6306	UVST 6308	UVST 6310	UVST 6312	UVST 6314	UVST 6316
57in-63in (1448mm-1600mm)	18in-20in (457mm-508mm)	UVST 6802	UVST 6804	UVST 6805	UVST 6806	UVST 6808	UVST 6810	UVST 6812	UVST 6814	UVST 6816

The CIRCUMFERENCE (length) is 25in, and the desired width is 12in = **UVST 3112**.

FOR EXAMPLE:

OR

The DIAMETER (length) is 8in, and the desired width is 12in = **UVST 3112**.

REMEMBER: It does not matter whether you measure for the CIRCUMFERENCE or the DIAMETER. Your results will still be the same.

HOW TO INSTALL A UNIVEST®:

[Click Here For Video Tutorial: How to Install UniVest®](#)

1.



2.



3.



4.



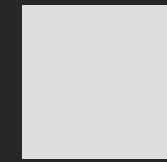
STRAPS & BUCKLES:

UniVest® Straps & Buckles provide added versatility for UniVest® Insulation Jackets and Throw Blankets. Straps & Buckles can be used to accomplish the following benefits:

1. Extend the reach of a UniVest® Insulation Jacket
2. Daisy chain multiple UniVest® Insulation Jackets together
3. Fasten UniVest® Throw Blankets to any surface for added stability

Straps & Buckles are carefully spun using fiberglass yarns. The strength and flexibility of the nickel steel roller buckles allow for an easy adjustment or added extension to provide a secure fit.

Straps & Buckles are resistant to most chemicals and can withstand temperatures up to 1000°F. This creates a perfect fit when combined with UniVest® Insulation Jackets or Throw Blankets.



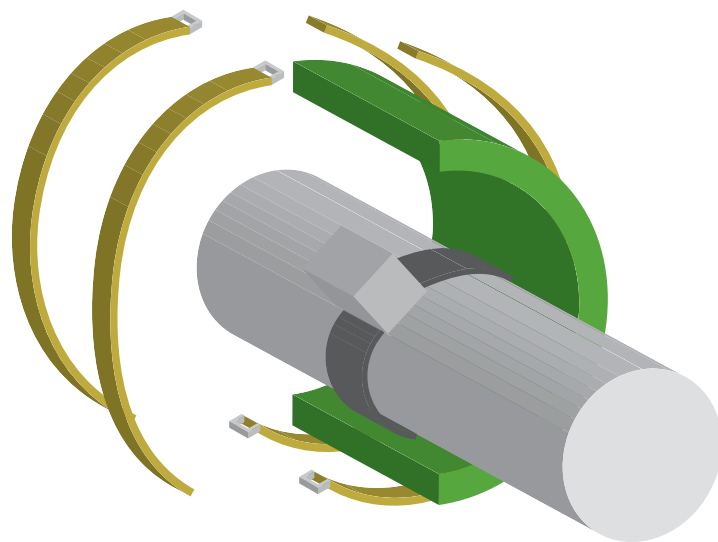
SIMPLICITY

BREEDS

USABILITY

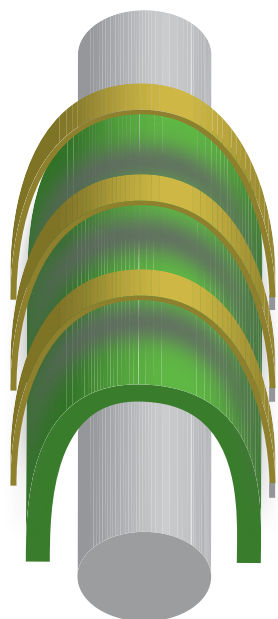
USER-FOCUSED DESIGN

UNIVEST®
+
STRAPS & BUCKLES



1. Extend the reach of a UniVest® Insulation Jacket.

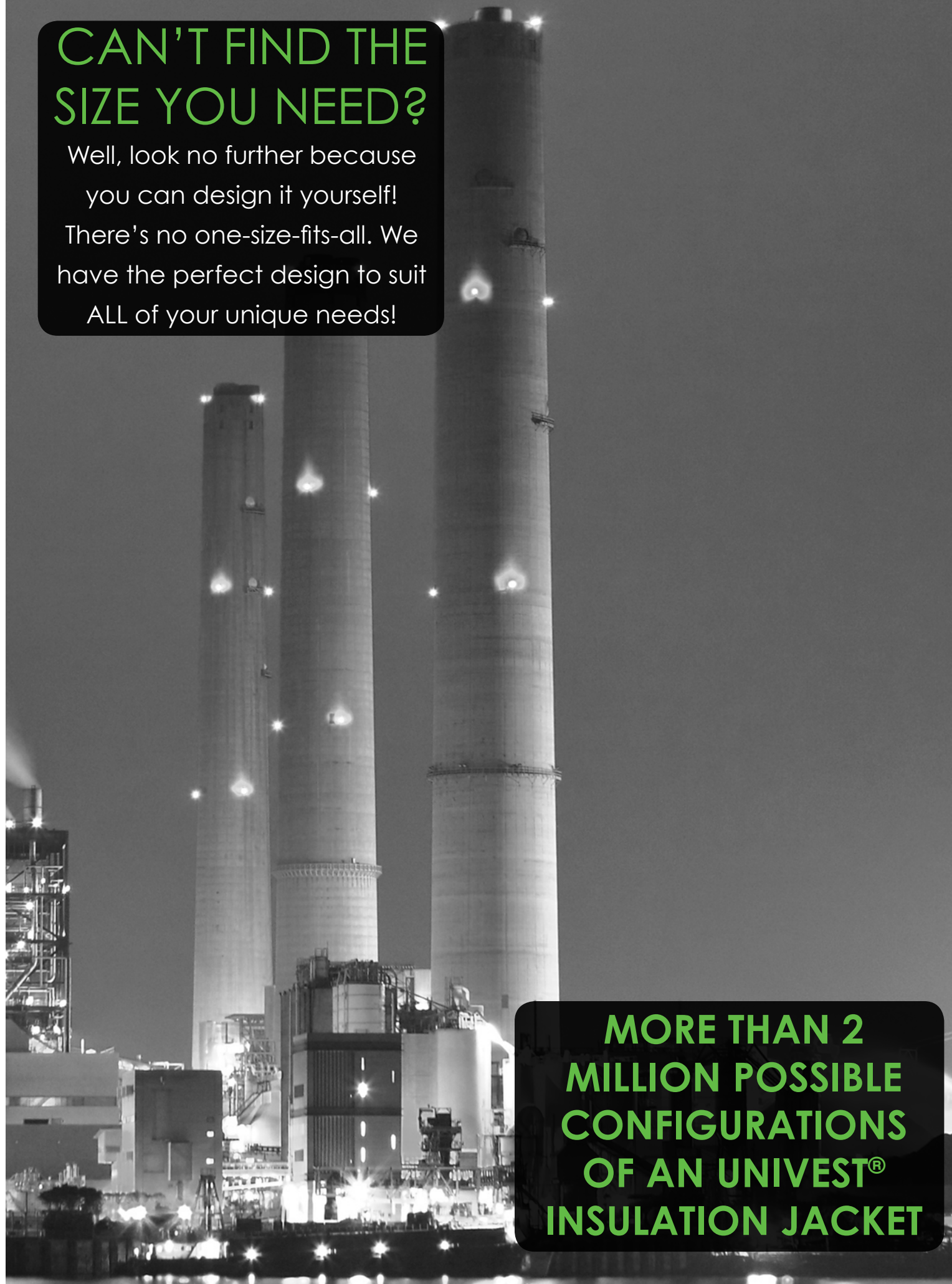
THROW BLANKETS
+
STRAPS & BUCKLES



2. Fasten UniVest® Throw Blankets to any surface for added stability.

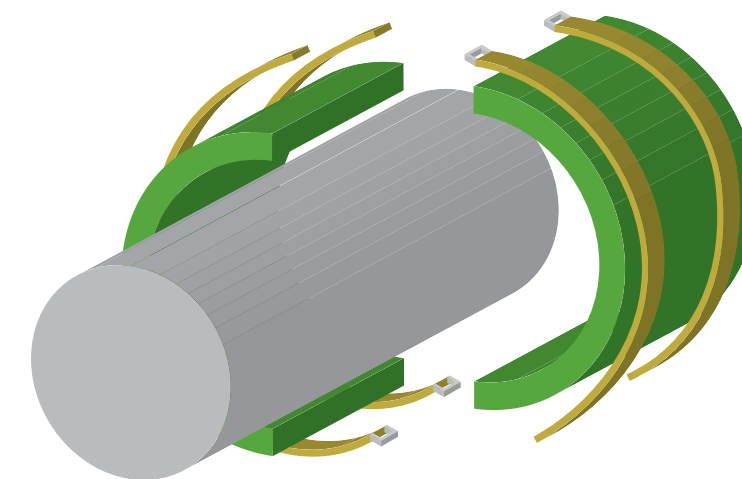
CAN'T FIND THE
SIZE YOU NEED?

Well, look no further because you can design it yourself! There's no one-size-fits-all. We have the perfect design to suit ALL of your unique needs!



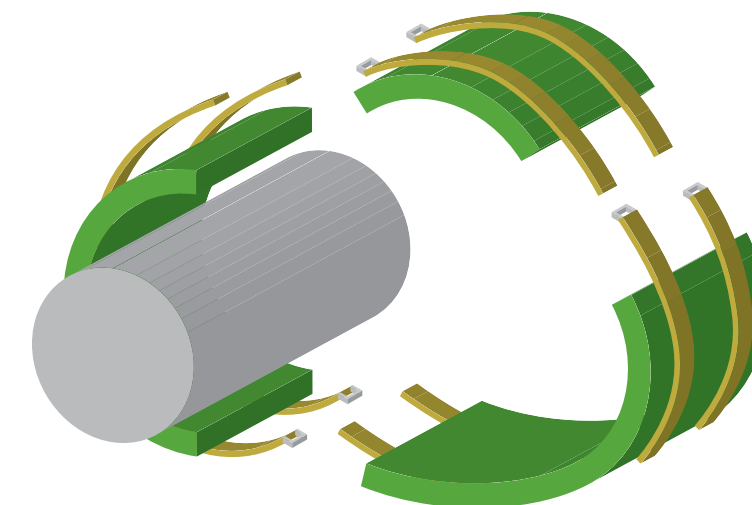
MORE THAN 2
MILLION POSSIBLE
CONFIGURATIONS
OF AN UNIVEST®
INSULATION JACKET

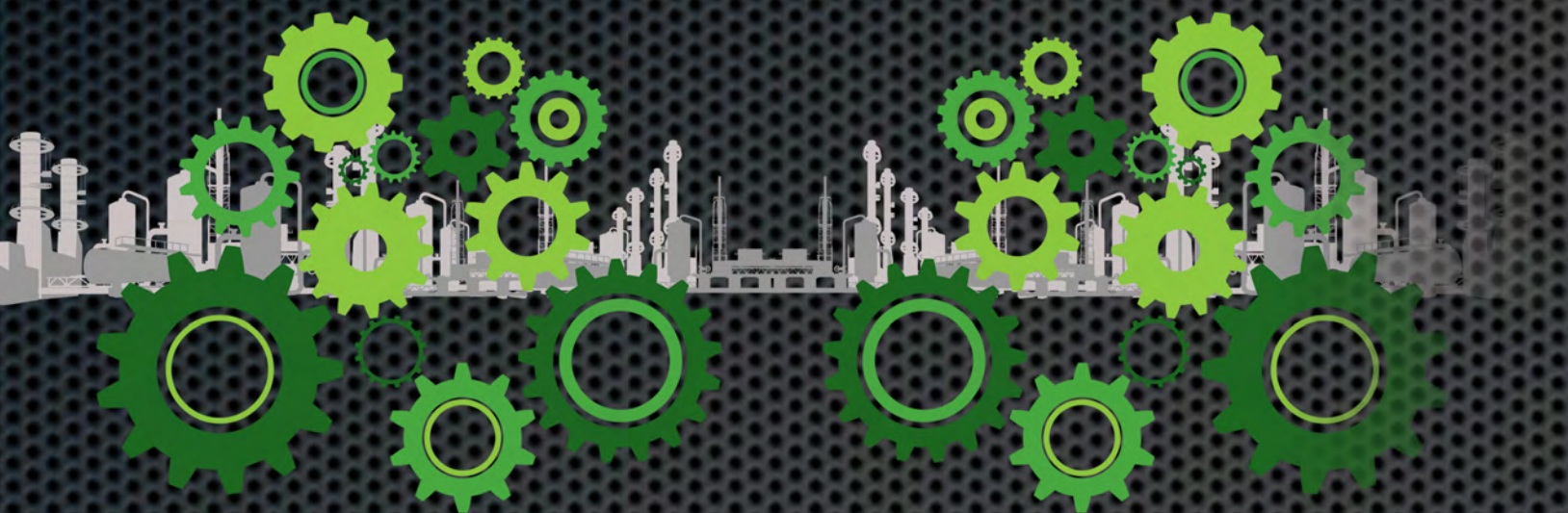
UNIVEST®
+
UNIVEST®



3. Daisy chain multiple UniVest® Insulation Jackets together.

UNIVEST®
+
UNIVEST®
+
ALL UNIVEST® INSULATION
SYSTEMS PRODUCT LINE





ISOCOVERS Insulation Systems:

Specifically designed to meet heat and process requirements for high-pressure steam applications.



FirePro® Fire Protection Systems:

Specifically designed for passive fire protection and fireproof applications compliant with the UL 1709 testing standard.



FreezePro® Frost Protection Systems:

Specifically designed to safeguard applications that are vulnerable to freezing or subjected to harsh environmental conditions.