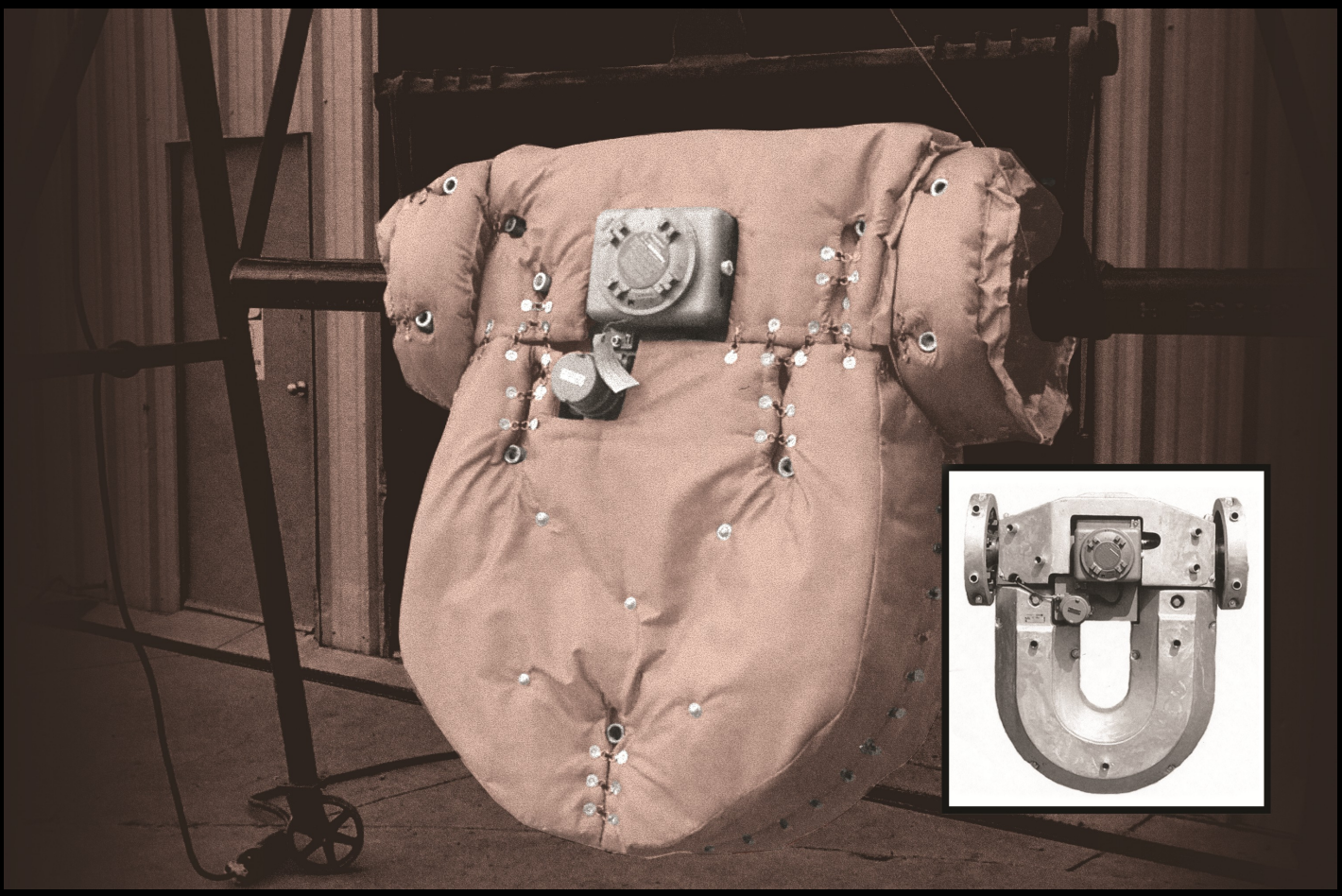
CSI ControCover Removable Insulation



•Efficient •Flexible •Economical •Removable and Reusable
•Easy to Install •Saves Time and Labor

Now it's easy to insulate jacketed components.

...with removable ControCover Insulation Jackets. They'll save you money.

Ask a 10-year insulation craftsman in any processing plant, "What's your toughest insulation job?" Chances are, he'll tell you quickly, "Steam-jacketed valves, pumps, meters and instruments."

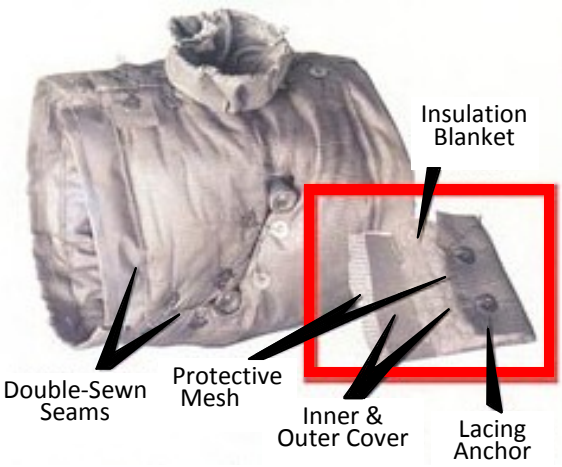
And he's talking about a very old insulation problem… for sulfur processing, chocolate processing, and asphalt processing, and many other products that must be maintained in a molten state.

The reason is, steam, or any fluid heating medium, goes into a jacketed component through one connector and it comes out another. These connectors normally are very close together. For the insulation craftsman they create laborious, time-consuming, custom-fit problems. Consider, for example, a jacketed control valve station with a jacketed block valve in front and one in back. The assembly may have six to 12 heating medium connections in a face-to-face span of only three feet. Insulators, working to standard time scales, quickly realize that doing the job right on a jacketed component takes three or four times longer than normal. Unfortunately, when these conditions exist, time and money end up on opposing sides, often resulting in shortcuts to level the playing field.

CSI ControCover Insulating Jackets address this problem head-on. The results are surprisingly positive:

- ControCover Jackets can be installed on jacketed components in a fraction of time required by conventional insulation techniques.
- The rugged construction of the jackets allows them to be installed, removed, and reused many times to facilitate quick turnarounds and unscheduled outages.
- Each ControCover Jacket is custom designed and manufactured for a particular jacketed component. All heating medium connections on the component are incorporated into the construction of a snug, flexible package of insulation.

Hundreds of insulating man-hours were saved by the flexible, reusable insulation applied to jacketed pumps and valves in this specialty chemical operation.



Shown above is a typical ControCover Jacket. Double-sewn seams at slits in the jacket accommodate heating medium connections. Various jacket components are identified.

Description

ControCover Insulating Jackets are offered in many constructions to satisfy particular process requirements. The basic design of all the jackets, however, is very similar. The core material is a needled blanket of e-type fiberglass, or fiber–glass blended with other oxide fibers such as aluminum, calcium, and magnesium. The blanket, usually 1-inch thick for most chemical plant applications, is sandwiched between an inner and outer layer of silicone-impregnated fiberglass cloth. Critical seams in the jacket are double sewn. Lacing anchors cinched together by nylon tie-wraps or soft, stainless steel wire provide jacket closure. A wire mesh of stainless steel may be fixed to the jacket to provide addition abrasion resistance to internal and/or external surfaces.

Many options. In the photo, left, jacket components identi–fied by callouts are available in an array of materials. For example, the thread used for the double-sewn seams usually

is Teflon® coated fiberglass. If the service temperatures warrant the use, Teflon® coated stainless steel or quartz threads may be recommended. Several different inner and outer jacket materials in various weights are available, including Teflon® coated fiberglass for maximum chemical resistance. The thickness of the insulation inside the jacket can be varied to satisfy heat loss or personnel protection criteria. All of these materials of construction are supported with manufacturer's data that CSI can make available to customers requesting the information. CSI application engineers are also available to assist customers in choosing the optimum combination of jacket materials for their application.

Service Conditions

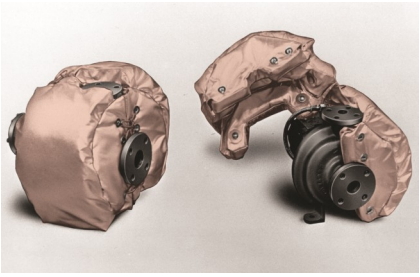
Although there are virtually no "standard" ControCover designs, the minimum continuous hot-side service temperature of a typical ControCover Jacket is 500 °F (260 °C). Higher service temperatures, to 1200 °F (649 °C), can be designed into the jacket.

ControCover Design and Production

CSI currently engages an independent manufacturer to provide ControCover Insulation for all heating jackets produced in our shops. The supplier's facilities are near the CSI plant, allowing close engineering coordination on all insulation designs. Our previous in-house production experience with ControCover Insulation Jackets has given us the first-hand knowledge to organize, design, and execute sizable projects for removable insulation.

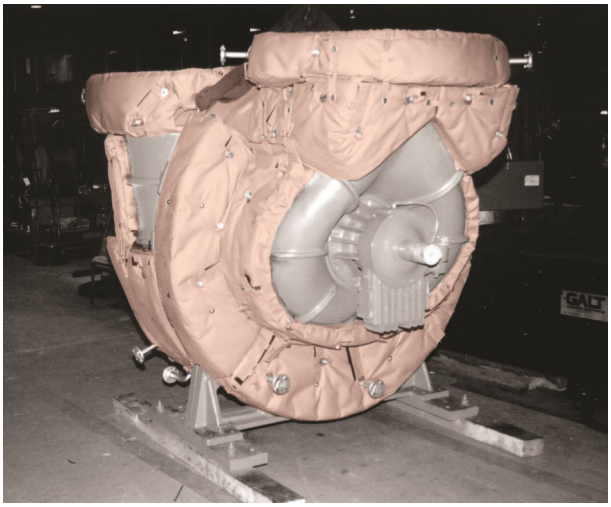
Applications

Several installations of ControCover Insulation Jackets are shown below.



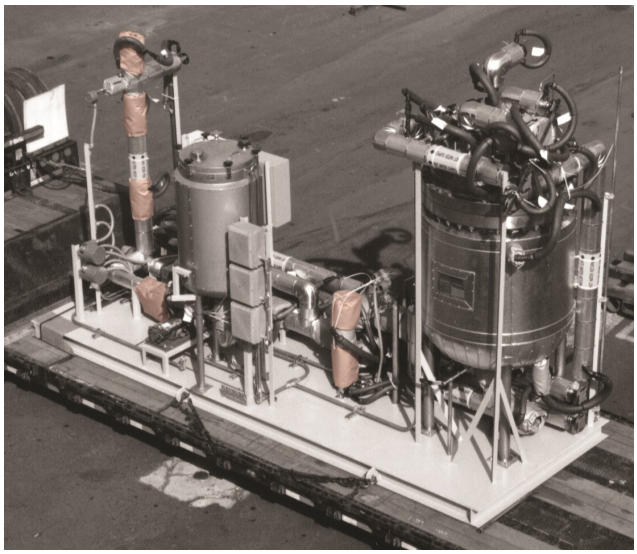
ControCover Jackets are an excellent insulation choice for rotating equipment subject to frequent maintenance checks.

ControCover Jackets on flow meter at asphalt distribution station allows quick access to unit for calibration.



This large blower fitted with special heating elements fabricated by CSI provides sweeping gas for sulfur storage pits. The ControCover Jackets help prevent sulfur condensation on the blower walls.

Flexible ControCover Insulation on jacketed swivel joint of loading station maintains thermal integrity despite angular displacement of the joint.



Manufactured by CSI, this modular unit uses ControCover Insulation on several jacketed components requiring frequent inspection.

Considerations for Using ControCover Insulating Jackets

Solving customers' process heating problems is the primary business of Controls Southeast, Inc. We take great pride in our ability to marshal innovative engineering, design, and fabrication skills to meet difficult challenges of time and performance. Our developed expertise resides in two technologies: 1) Metal fabrication to the highest standards of jacketed process piping and components, and 2) Bolt-on thermal maintenance products for various processing components manufactured throughout the world. Each of these technologies focuses on making heat avail-able to the process on demand. Naturally, we were aware that controlling heat loss from a process with insulation directly affects our efforts to put heat into the process. We also recognized another nagging problem with jacketed systems: Effective insulation on jacketed components diminishes with each maintenance cycle. We developed removable ControCover Insulation Jackets to improve this regression. The basic concept of the ControCover Jacket is to offer our customers an insulation product that can be installed quickly and removed many times from process heating products that we manufacture. Each ControCover Jacket is custom made to accommodate the heating medium connections on the jacketed component to which it is fitted. On many of the products we manufacture, standard insulation performs very well. On jacketed components that require frequent checks, inspections, or maintenance, ControCover Jackets offer substantial savings in labor and energy.

Material Data and Manufacturers

The following information is presented for typical constructions of ControCover Insulation Jackets. Variations of material thicknesses, content, and performance preclude an extensive review herein. However, approximately 94% of the ControCover Jackets supplied to customers by CSI are inside the parameters listed here.

1. **Inner and outer jacket materials:** Silicon-impregnated fiberglass cloth, 17 oz/sq yd to 32 oz/sq yd. Producer: Alpha Associates, Inc., Woodbridge, NJ

2. **Core insulation blanket:** 1) Type-E fiberglass insulation mat; density, 11.25 lb/cu ft; k=0.41 btu-in/hr-sq ft-F@500 °F. Producer: PPG, Pittsburgh, PA. 2) Composite blanket of fiberglass, and fibers of MgO, CaO, Al_2O_3, Fe_2O_3, and other trace oxides; density, 8 to 10 lb/cu ft; k=0.417 btu-in/hr-sq ft-F@500 °F. Producer: Tritex, LLC, Independence, VA.

3. **Sewing Thread:** Teflon® coated fiberglass thread. Producer: Alpha Associates, Inc., Woodbridge, NJ.

4. **Lacing Anchors:** 1) Aluminum (stakes, washers, and rings). Producer: AGM Industries, Inc., Brockton, ME. 2) Stainless Steel (stakes, washers, and hooks). Producer: AGM Industries, Inc., Brockton, ME.

5. **Wire Mesh:** Knitted stainless steel wire; Type 304; wire size, 0.011". Producer: Great Lakes Textiles, Inc., Walton Hills, OH.

Data sheets for specific materials from manufacturers are available through your CSI representative.

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and Plant Facilities
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