

Sure Seal™ Pipeline Systems

Standard Operating Principles

On pipeline construction, all aspects of installation are subject to stringent quality and documentation standards. Because of this lack of control, the coating of the girth weld is one area that has caused pipeline owners difficulty. To alleviate this problem, CCI Thermal developed the Sure Seal™ Pipeline System. This significant advance in shrink sleeve application minimizes operator error in the installation of this critical coating. With high output infrared heaters, the Sure Seal™ unit will uniformly preheat the entire circumference of the joint area. The unit also allows for complete and uniform heat recovery of both mastic and epoxy primed shrink sleeve systems.

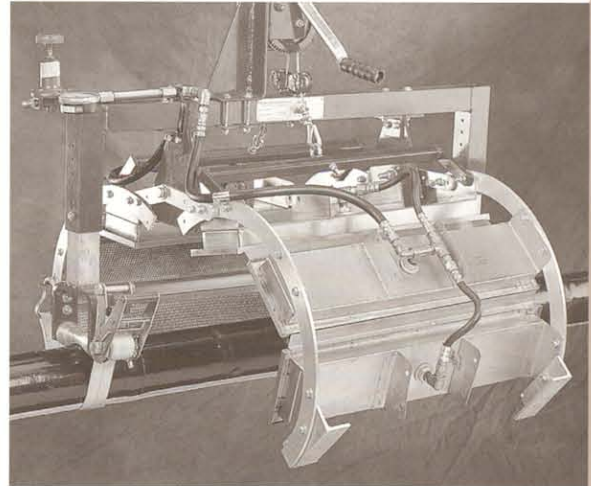
Field Operations

Sure Seal™ Description

The Sure Seal™ consists of six or eight infrared catalytic heaters mounted on a clamshell. On units up to NPS12, there are three heaters in each of the half shells. The heater box is 61 cm (24 in. long). The heaters are suspended via an aluminum cross member by hinged supports in two locations. For ease of use, the aluminum frame has an adjustable extension and an integral roller. The adjustable extension is to allow the unit to be centered on various diameters of pipe. The rollers are to aid in the transport of the unit along the pipeline. The Sure Seal™ unit is also available with a removable wind guard. A ratchet strap is available on request, which can be used to secure the unit to the pipe. This is used for extended preheat operation or with the clamshell open, for periods of operator rest.

Accessories

- Propane bottle (20 lb. minimum recommended)
- Temperature Probe



Basic Features

Sure Seal™ Pipeline Systems

CCI Thermal developed the Sure Seal™ Pipeline Systems in order to provide high quality heating solutions for the pipeline industry. Sure Seal™ is an innovative infrared system designed to be a safe and fast method of pipe preheat, shrink sleeve application and hydrogen removal. It can eliminate improperly applied sleeves that are a costly environmental liability for pipeline owners and contractors alike.

Used successfully in the extreme conditions of both Canadian winters and New Mexican summers, Sure Seal™ has proven that its design and construction are able to withstand the rigors of the pipeline right-of-way. Operating economically on propane, the system utilizes CCI's advanced gas catalytic technology to produce flameless infrared heat. Penetrating long wave infrared rays provide 360° uniform heat around the pipe for all applications.

Although originally designed for preheat and sleeve shrinking processes, Sure Seal™ is now routinely used in a variety of pipe coating applications and for high heat baking to eliminate hydrogen induced cracking. When compared to traditional tiger torch methods, Sure Seal™ is faster, more economical, and provides a previously unachievable consistency. Its uniform application of shrink sleeves can minimize the risk of defective sleeve applications, which compromise the economics of pipeline construction.

Sure Seal™ is specified for sleeve installation by numerous oil and gas companies and pipeline owners. They can be confident that they have exercised due diligence in their efforts to avoid the significant environmental damage that can result from leakage or spills due to joint corrosion.

Product

Product Specification

- Durable aluminum support frame
- 6 or more Cata-Dyne™ catalytic gas infrared heaters
- Heater operating temperature of 600°C (1100°F)
- Heavy duty cable winch for operation of clamshell mechanism
- 0 to 35 psi adjustable gas pressure regulator
- Removable aluminum wind guards
- Custom built equipment and other options are available upon special request

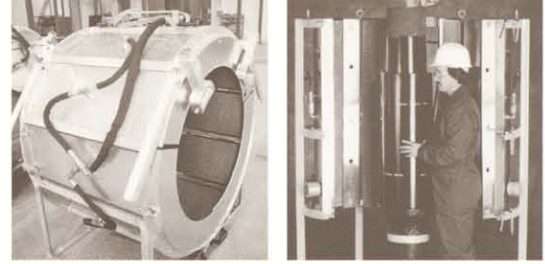
TABLE 1 Product Dimensions & Data

Part #	Pipe Diameter	Dimensions			Weight (lbs.)	Approx. Propane Consumption
		L	H	W		
SS2-4/24	2 in. - 4 in.	40 in.	30 in.	15 in.	78	2.2 lb./hr
SS6-8/24	6 in. - 8 in.	40 in.	32 in.	19 in.	85	2.2 lb./hr
SS10-12/24	10 in. - 12 in.	40 in.	34 in.	23 in.	93	2.2 lb./hr
SS16-18/24	16 in. - 18 in.	40 in.	40 in.	28 in.	122	3.8 lb./hr
SS20-24/36	20 in. - 24 in.	52 in.	52 in.	40 in.	205	5.5 lb./hr

Models for larger pipe diameters and custom applications available upon request.

The Sure Seal™ Advantage High Quality

- Durable construction
- Produces controlled and uniform heat around the entire circumference of the pipe
- No rejects due to trapped air, voiding or poor operator technique
- Consistent results at every joint
- Quality workmanship and materials



Economical

- Faster than tiger torch methods
- Uses less propane than tiger torch methods
- User friendly; operator training costs are minimal
- Easily operated by one person depending on line diameters
- Portable and easily fitted to pipe
- Requires no water, electricity or compressed air

Versatile

- Models available for 2 in. diameter and greater
- Suitable for preformed or wrap around sleeves
- Ideal for both preheat and sleeve shrink processes
- Can be used for baking to remove hydrogen induced cracking
- Appropriate for a variety of manufacturers' sleeves

Safe

- No open flame
- Can be used even in windy or poor weather conditions

Custom Engineering Custom Built Equipment

Our product line is further complemented by Sure Seal™'s ability to provide custom manufactured solutions for its customers. Upon request, our engineers and technicians will design and build a Sure Seal™ unit specifically to meet your requirements, as we did for Shell Offshore Inc.

Every time Shell fitted a vertical connector protector sleeve, they were required to shut down adjacent work areas and operations due to high risk of fire inherent in the tiger torch application method. Shell asked CCI Thermal to find a safer and more cost effective solution. After extensive research and testing with Shell's personnel, CCI Thermal designed and built an explosion-proof Sure Seal™ unit to heat shrink the sleeve in place in a vertical position. This provides the ability to perform higher quality, faster sleeve application with consistent results and to do so without any significant safety risk.



Systems, Inc.

International Measurement and Control Systems