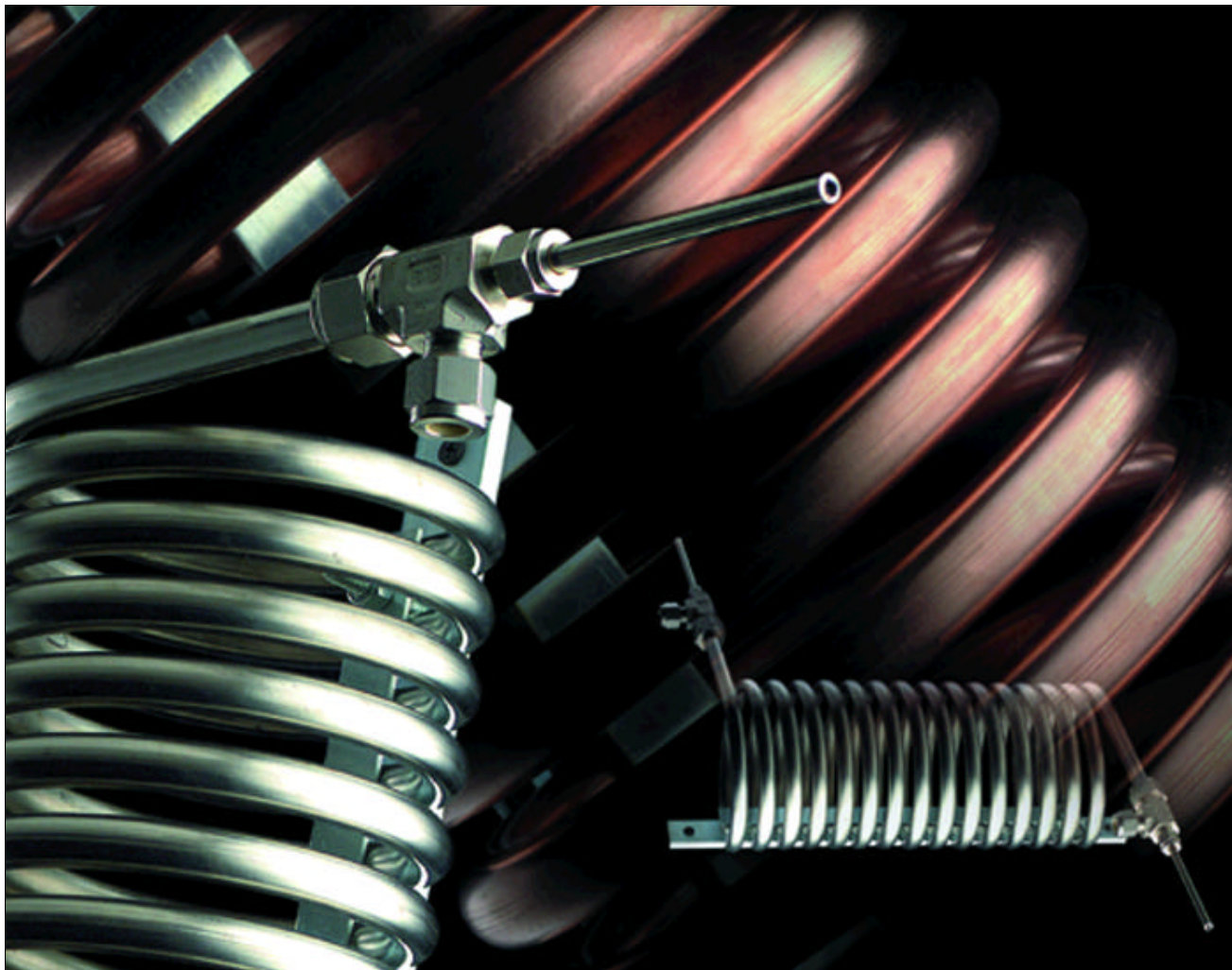




# Dual Heat Transfer Coils

*Catalog 4295  
Revised, December 1997*



# Parker Dual Heat Transfer Coils

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## Introduction

Parker Dual Heat Transfer Coils have been made at the Instrumentation Connectors Division in Huntsville, Alabama since the early 70's. These unique and reliable heat exchangers assure maximum thermal efficiency for cooling high temperature, high pressure fluid samples. Available in copper, stainless steel and other materials upon request, the Parker Dual Heat

Transfer Coils are manufactured with tube stub ends. This permits the user to choose from a broad range of end connections such as Parker CPI™, A-LOK®, Weld-lok, Automatic Buttweld, UltraSeal, VacuSeal and 37° flared fittings. Parker Dual Heat Transfer Coils: Easy to install, efficient and excellent for a variety of applications.



### WARNING

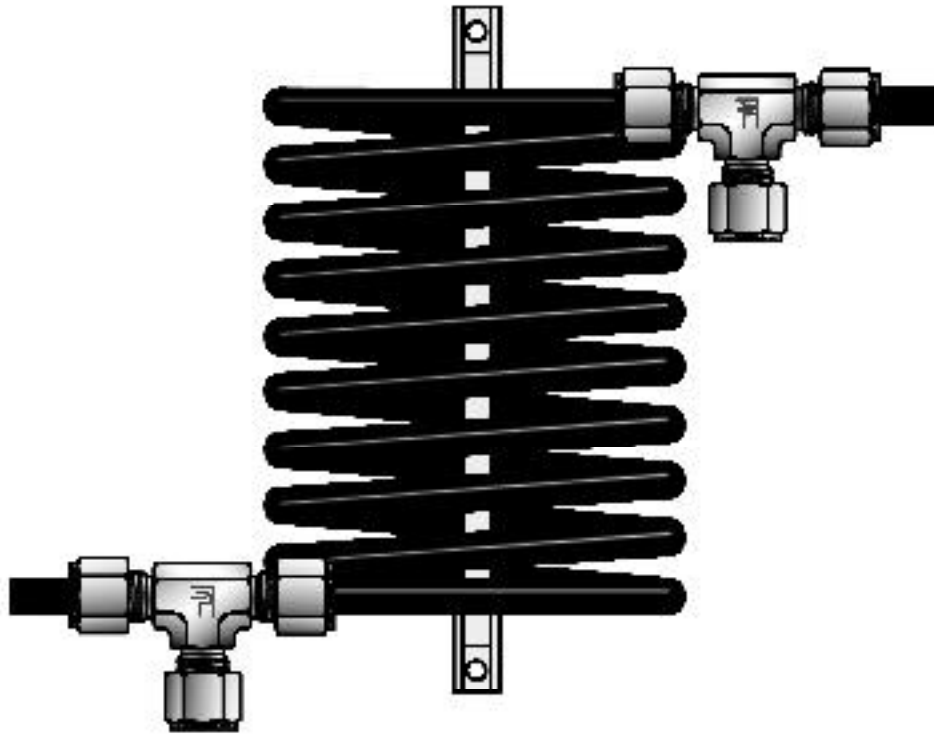
FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

### Offer of Sale

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the "Offer of Sale".



## Features

Parker Dual Heat Transfer Coils are rugged, high efficiency, counter-flow heat exchangers for cooling high temperature, high pressure fluid samples such as boiler steam, boiler feed water, superheat steam, hot chemical solutions and other process fluids.

## Applications

They allow the operator to withdraw uncontaminated samples of a process fluid for laboratory testing at room temperature. Coils can also be used in continuous sampling systems for on-line process control.

## Rugged Construction

The sturdy tube within a tube design features heavy duty forged terminal fittings.

## Tube End Extensions

Permits the installer the flexibility to utilize any connection to hook up the inner tube.

## Simple Installation

Convenient two-hole mounting bracket permits coil to be located near the point of measurement.

## No Break In Inner Tube

Terminal fittings are designed to permit the inner tube to go through in one piece, like a thermocouple connection.

## Forced Counterflow

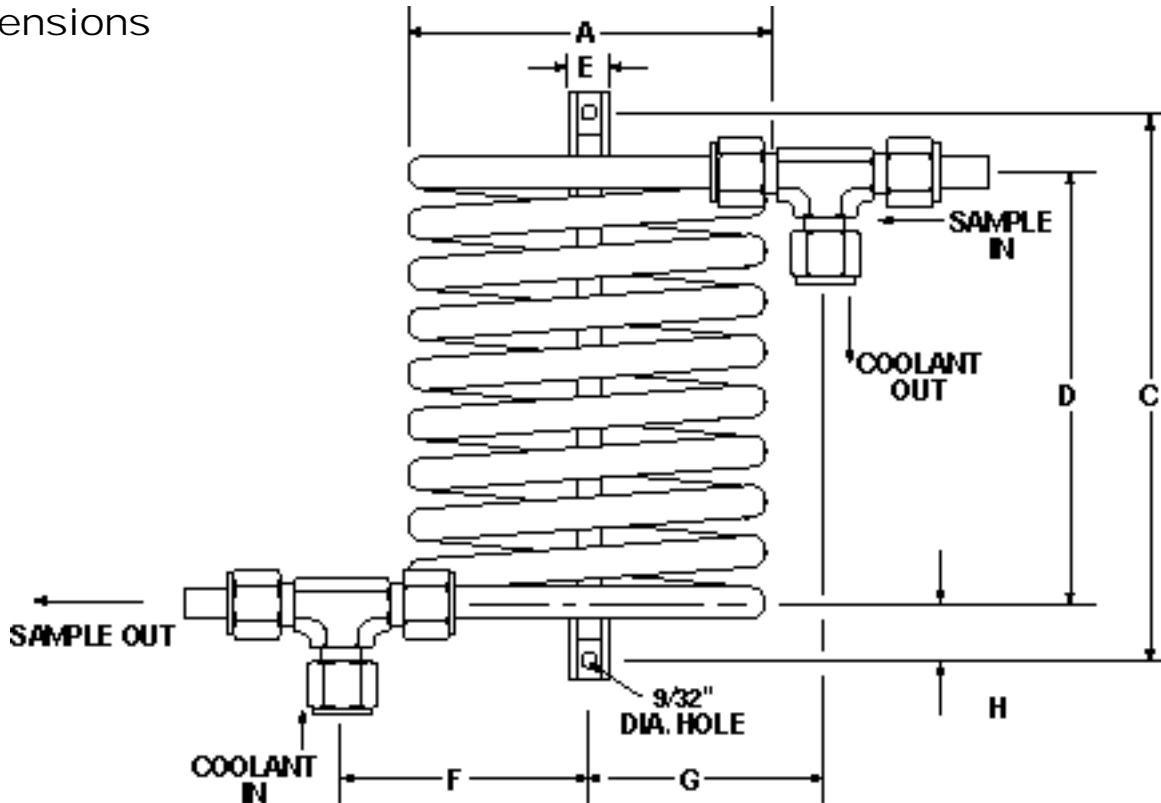
Insures maximum terminal efficiency.

## ASME Code Design

Pressure and temperature ratings conform to the applicable ASME Boiler Code allowable stress values.

# Parker Dual Heat Transfer Coils

## Dimensions



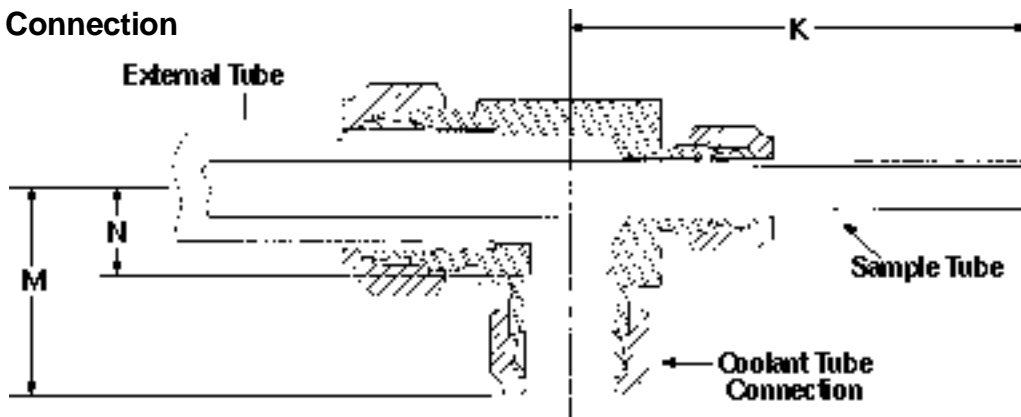
## Installation Dimensions

| Inches |             |             |              |               |             |              |           |              |             |            |         |        |       |       |       |       |
|--------|-------------|-------------|--------------|---------------|-------------|--------------|-----------|--------------|-------------|------------|---------|--------|-------|-------|-------|-------|
| Size   | Sample Tube |             |              | External Tube |             | Coolant Tube |           | No. of Coils | Weight Lbs. | Dimensions |         |        |       |       |       |       |
|        | O.D.        | Wall Thick. | Area Sq. Ft. | O.D.          | Wall Thick. | O.D.         | Max. Wall |              |             | A†         | C       | D†     | E     | F†    | G†    | H†    |
| -4     | 1/4         | .049        | .80          | 1/2           | .049        | 3/8          | .065      | 15           | 12          | 5          | 13-1/16 | 11-1/4 | 1     | 5     | 5     | 7/8   |
| -6     | 3/8         | .049        | 1.44         | 3/4           | .065        | 5/8          | .083      | 9            | 16          | 8-1/2      | 13      | 9      | 1     | 7     | 7     | 2     |
| -8     | 1/2         | .065        | 1.93         | 1             | .083        | 3/4          | .095      | 10           | 30          | 8          | 16-7/16 | 13-3/4 | 1-1/2 | 6-3/4 | 6-3/4 | 1-7/8 |

| Type of Connection | Inches |                  |                   |      |      |     |
|--------------------|--------|------------------|-------------------|------|------|-----|
|                    | Size   | Sample Tube O.D. | Coolant Tube O.D. | K†   | M†   | N†  |
| Tube End Extension | -4     | 1/4              | 3/8               | 4.13 | 1.26 | .57 |
|                    | -6     | 3/8              | 5/8               | 3.75 | 1.57 | .59 |
|                    | -8     | 1/2              | 3/4               | 4.63 | 1.67 | .69 |

† Average value

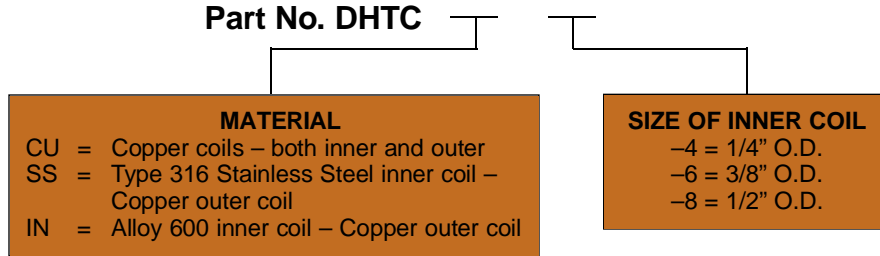
## Terminal Connection



## Sizing and Design Data

### How to order

The correct part number is easy to arrive at by following the procedure below.

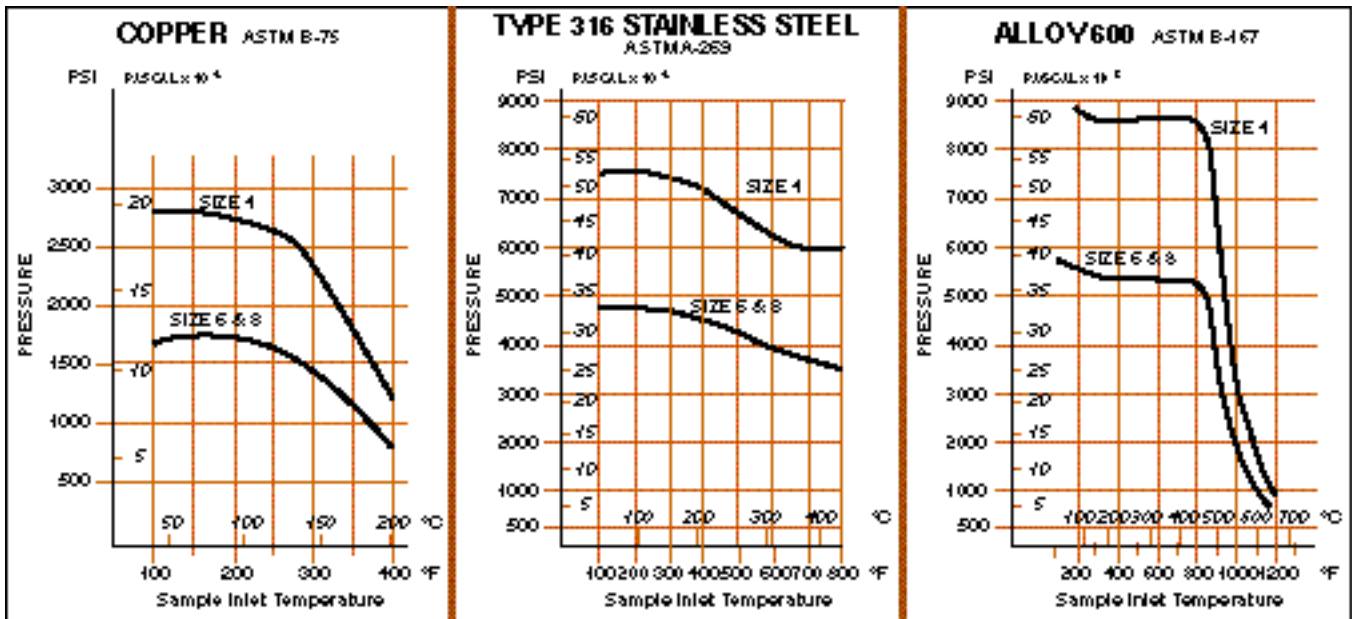


### Typical Sample Capacity of Saturated Steam

| DHTC Size | Lbs./Hr. Steam Sample |                             |                    |                    |                    | Cooling Water Flow, GPM<br>$\Delta P=15\text{psi}$ | Max. Outer Coil Pressure Psi<br>(Up TO 200°F) |
|-----------|-----------------------|-----------------------------|--------------------|--------------------|--------------------|--|---|
|           | Inner Coil Material   |                             |                    |                    |                    |  |   |
|           | Copper                | Stainless Steel & Alloy 600 |                    |                    |                    |  |   |
|           | 200 Psia<br>390°F     | 200 Psia<br>390°F           | 1000 Psia<br>540°F | 2500 Psia<br>665°F | 3500 Psia<br>730°F |  |   |
| 4         | 80                    | 80                          | 81                 | 89                 | 94                 | 1.8  | 1200  |
| 6         | 202                   | 188                         | 203                | 223                | 236                | 4.5  | 1100  |
| 8         | 305                   | 200                         | 270                | 496                | 525                | 10   | 1000  |

### Maximum Pressure / Temperature Rating of Sample Side Tube

Based on ASME Section VIII Allowable Stress Values



### Availability

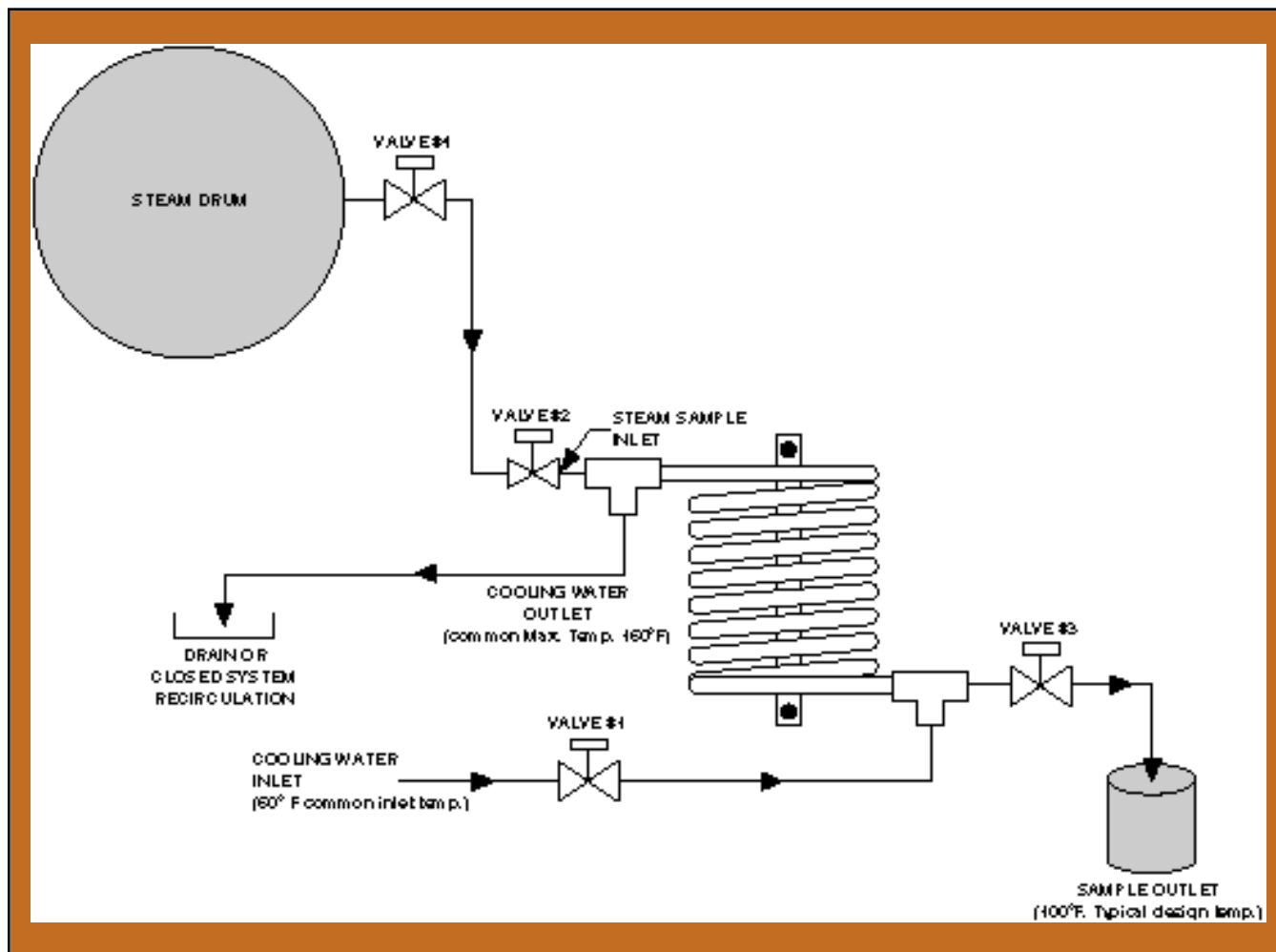
**Copper Sample Tube:** Available in 1/4", 3/8" and 1/2" with tube end extension.

**Stainless Steel Sample Tube:** Available in 1/4", 3/8" and 1/2" with tube end extension.

**Alloy 600 Sample Tube:** Available in 1/4", 3/8" and 1/2" with tube end extension.

# Parker Dual Heat Transfer Coils

## Typical Installation Diagram



### Start Up Sequence

(All Valves Closed)

- Open cooling water valve #1.
- After adequate cooling water flow is established, gradually open valve #4, then sample inlet valve #2.
- Gradually open sample outlet valve #3 until desired sample flow rate is obtained (without exceeding suitable sample temperature).
- The position of sample outlet valve #3 should be maintained for all future sampling.

### Shut-Off Sequence

- Close sample inlet valve #2.
- Close cooling water inlet valve #1.

### Sampling Sequence

- Open cooling water inlet valve #1.
- After adequate cooling water flow is established, gradually open sample inlet valve #2 (keeping sample outlet valve #3 at its previously determined setting).

Note: Always open cooling water first and shut it off last. (It is good practice to occasionally cycle valve #4 so that when needed, it will be operable.)

Alloy 600 tubing is recommended for DHTC applications where halides may be present in the media.



**Parker Hannifin Corporation**  
 6035 Parkland Blvd.  
 Cleveland, Ohio 44124-4141  
 Telephone: (216) 896-3000  
 Fax: (216) 896-4000  
 Web site: www.parker.com

# Parker Hannifin Corporation

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To be a leading worldwide manufacturer of components and systems for the builders and users of durable goods. More specifically, we will design, market and manufacture products controlling motion, flow and pressure. We will achieve profitable growth through premier customer service.

North American customers seeking product information, the location of a nearby distributor, or repair services will receive prompt attention by calling the Parker Product Information Center at our toll-free number: 1-800-C-PARKER (1-800-272-7537). In the UK, a similar service is available by calling 0500-103-203.

The Aerospace Group is a leader in the development, design, manufacture and servicing of control systems and components for aerospace and related high-technology markets, while achieving growth through premier customer service.



The Climate & Industrial Controls Group designs, manufactures and markets system-control and fluid-handling components and systems to refrigeration, air conditioning and industrial customers worldwide.

The Fluid Connectors Group designs, manufactures and markets rigid and flexible connectors, and associated products used in pneumatic and fluid systems.



The Seal Group designs, manufactures and distributes industrial and commercial sealing devices and related products by providing superior quality and total customer satisfaction.

The Hydraulics Group designs, produces and markets a full spectrum of hydraulic components and systems to builders and users of industrial and mobile machinery and equipment.



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The Automation Group is a leading supplier of pneumatic and electromechanical components and systems to automation customers worldwide.



The Instrumentation Group is a global leader in the design, manufacture and distribution of high-quality critical flow components for worldwide process instrumentation, ultra-high-purity, medical and analytical applications.



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**Parker Hannifin Corporation**  
Instrumentation Connectors Division  
P.O. Box 400004-1504  
Huntsville, AL 35815-1504  
USA  
Phone: (256) 881-2040  
Fax: (256) 881-5730  
[www.parker.com/ICD](http://www.parker.com/ICD)

**Parker Hannifin plc**  
Instrumentation Products Division  
Riverside Road  
Pottington Industrial Estate  
Barnstaple, Devon EX31 1NP  
England  
Phone: (44) (1271) 313131  
Fax: (44) (1271) 373636  
[www.parker.com/instrumentation](http://www.parker.com/instrumentation)