

# FLOW LOOP SYSTEMS

## FLOW LOOP SYSTEMS

### OVERVIEW

Cortest Flow Loop Systems are used to simulate flow conditions inside a pipeline. A wide range of applications can be simulated, such as: **Single Phase Liquid Flow, Single Phase Gas Flow, Multiphase (Liquid/Gas) Flow, Laminar Flow, and Various Hydrodynamic Conditions including Corrosion Flow, Slug Flow, Annular Flow, and Stratified Flow.** The flow loops are used to measure the effectiveness of corrosion inhibitors and drag reducers in various environments and flow regimes. Customers can specify operating parameters such as flow rate, temperature, pressure, single or multiphase, piping diameter, and a selection of corrosion probes and sensors to customize the system for their specific requirements.

**CATEGORIES :** OIL & GAS | STEEL | DESALINATION | NUCLEAR | RESEARCH

**MEDIA TYPE**  
LIQUID, GAS, OR MULTIPHASE

**FLOW RATES UP TO**

**10 m/s**

(Liquid Flow Loop)

**FLOW RATES UP TO**

**20 m/s**

(Gas Flow Loop)

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### SYSTEM FEATURES

#### -Liquid Flow Loop Features

Flow Rates Up to: 10 m/s  
Operating Temperatures Up to: 300°C  
Operating Pressures Up to: 30 MPa  
316 Stainless Steel or Hastelloy C-276 Construction  
Variable Speed Pumps  
In-Line Test Spool Sections for Insertion of Corrosion Monitoring Probes and/or Coupons  
Removable Test Sections for Customer Supplied Material Test Studies

#### -Gas Flow Loop Features

Flow Rates Up to: 20 m/s  
Operating Temperatures Up to: 150°C  
Operating Pressures Up to: 10 MPa  
316 Stainless Steel or Hastelloy C-276 Construction  
Variable Speed Gas Blowers/Pumps  
In-Line Test Spool Sections for Insertion of Corrosion Monitoring Probes and/or Coupons  
Removable Test Sections for Customer Supplied Material Test Studies

#### -Multiphase Flow Loop Features

Liquid Flow Rates Up to: 10 m/s  
Gas Flow Rates Up to: 20 m/s  
Operating Temperatures Up to: 150°C  
Operating Pressures Up to: 10 MPa  
316 Stainless Steel or Hastelloy C-276 Construction  
Variable Speed Gas Blowers/Pumps  
In-Line Test Spool Sections for Insertion of Corrosion Monitoring Probes and/or Coupons  
Removable Test Sections for Customer Supplied Material test Studies  
Fully Inclined Test Section to Simulate Different Flow Regimes

### CONTROLS

-Programmable Logic Controller (PLC) Based Control Systems

-Temperature and Variable Speed Flow Control

-Analog Outputs for Temperature and Pressure Recording

-Over Temperature and Variable Pressure Safety and Alarms

-Default Data Acquisition System Records the Following Data:

Solution Temperature(s)  
Heater Band Temperature(s)  
System Pressure(s)  
Flow Rate  
Corrosion Rate  
Test Duration

### TYPICAL APPLICATIONS

-Corrosion Inhibitor Evaluation

-Electrochemical Studies

-New Product Development/Testing

-Flow Studies

-Field Simulations

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