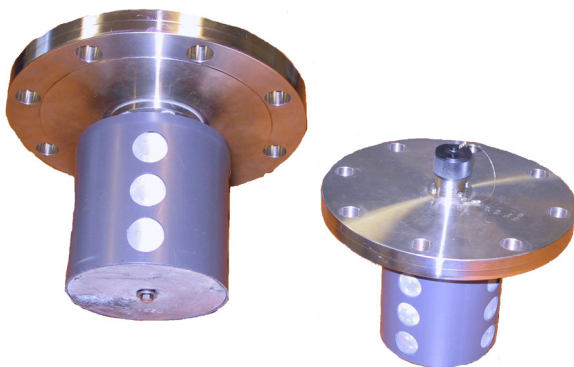


# The RCP™ System

**A cost effective method of INTERNAL cathodic protection of stainless steels in sea water systems.**



*RCP anode mounted on standardized blind flanges of all types up to 2500 lbs rating*

## Features and advantages

Resistor controlled Cathodic Protection (RCP™) prevents corrosion of stainless steels in seawater systems. Highly applicable for chlorinated seawater and produced water systems causing severe corrosion that may increase maintenance costs.

RCP is a cathodic protection method utilizing sacrificial anodes with anode potential controlled with a resistor of designed value to eliminate corrosion. RCP extends the life of existing stainless steel piping systems and allows for use of inexpensive, low alloyed, stainless steels in expensive components.

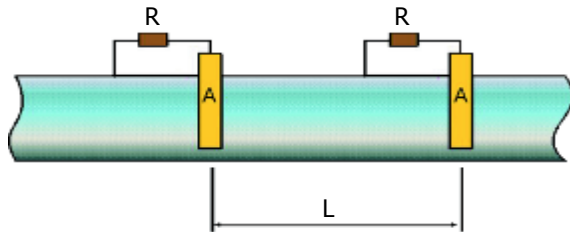


*The RCP anodes comprise interchangeable zinc to reduce the client's replacement costs. A special developed zinc alloy allows for seawater temperatures up to 80°C*

- RCP is a reliable and robust means of internal corrosion protection of stainless steels in seawater systems
- The RCP allows more cost effective material selection
- RCP expands the operating window (temperature range, chlorine level) for stainless steels in seawater systems
- RCP anodes protect piping and components such as pumps, valves, deluge skids, strainers and heat exchangers made from stainless steel
- RCP prevents localized galvanic corrosion in couplings between different alloys
- RCP anodes have low consumption rate and thereby a long life
- RCP promotes a high level of operational safety, simple maintenance procedure with no shut down
- 10 years of experience and improvements of the RCP system delivered world wide ensure product quality
- RCPSim is a modeling programme that provides optimal RCP anode placing and protection level.

## The Principle

The basic principle of the RCP method is to apply cathodic protection to a stainless steel system using a resistor in series with the anode to control both the potential of the stainless steel and the anode current output.



The RCP principle

The method is based on the observation that the protection potential for the prevention of localized corrosion of stainless steel is more positive than the typical potentials of sacrificial anodes. The voltage drop over the resistor is therefore designed to obtain a sufficient, but not excessive, negative polarization of the stainless steel.

The resistor control keeps the stainless steel in a protective potential range where the current requirements are low.

Due to the low current requirements in the relevant potential range, a single anode can protect large lengths of a pipe system at a very low anode consumption rate.

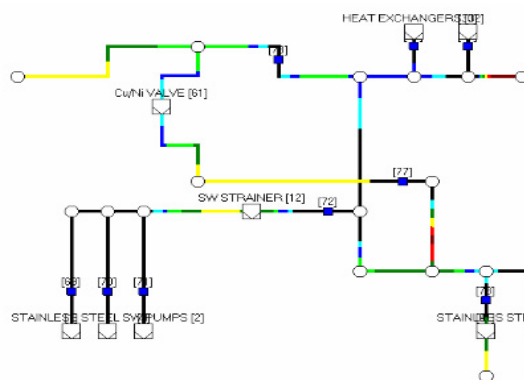


The interchangeable resistor module allows for flexible current output if process parameters should deviate from the design basis during service time

## RCPSim - Detailed Modeling for Optimal Design

RCPSim design tool is specially designed by FORCE Technology Norway AS. Modeling by use of this programme will result in an optimized design with respect to anode distribution, protection capability and protection life. The design tool allows for modeling complex seawater systems with piping, valves, strainers and heat exchangers integrated in one model. The mathematic core is based on data from 10 years experience with RCP design and applications world wide.

## RCPSim - RCP Model for seawater piping



### Value Range

Black	< -300
Cyan	-300 -250
Blue	-250 -200
Green	-200 -150
Light Green	-150 -100
Yellow	-100 -50
Red	-50 0
Dark Red	0 >

### Symbols

	Pipe
	Anode
	Sink

Project Number a3102020-0300  
 Customer INTERNAL  
 Responsible FORCE TECHNOLOGY NORWAY AS  
 Filename Data sheet.rcp  
 Description MODEL OF SEAWATER SYSTEM

Version Number 1  
 Version Date 17.02.2004 16:25:48  
 Designer (Active Version)  
 State



Further information: FORCE Technology Norway AS  
 Harald Osvoll, tel. (direct) +47 64 00 37 09, ho@forcetechnology.no  
 Svern Magne Wigen, tel. (direct) +47 64 00 37 18, smw@forcetechnology.no

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FORCE Technology USA Inc.  
 Tel. +1 713 975 8300  
 FORCE Technology Rusland LLC  
 Tel. +7(812) 326 80 92

FORCE Technology Norway AS  
 Claude Monets allé 5  
 1338 Sandvika, Norway  
 Tel. +47 64 00 35 00  
 Fax +47 64 00 35 01  
 info@forcetechnology.no

FORCE Technology Sweden AB  
 Tallmätargatan 7  
 721 34 Västerås, Sweden  
 Tel. +46 (0)21 490 3000  
 Fax +46 (0)21 490 3001  
 info@force.se

FORCE Technology, Headquarters  
 Park Allé 345  
 2605 Brøndby, Denmark  
 Tel. +45 43 26 70 00  
 Fax +45 43 26 70 11  
 force@force.dk  
 www.forcetechnology.com