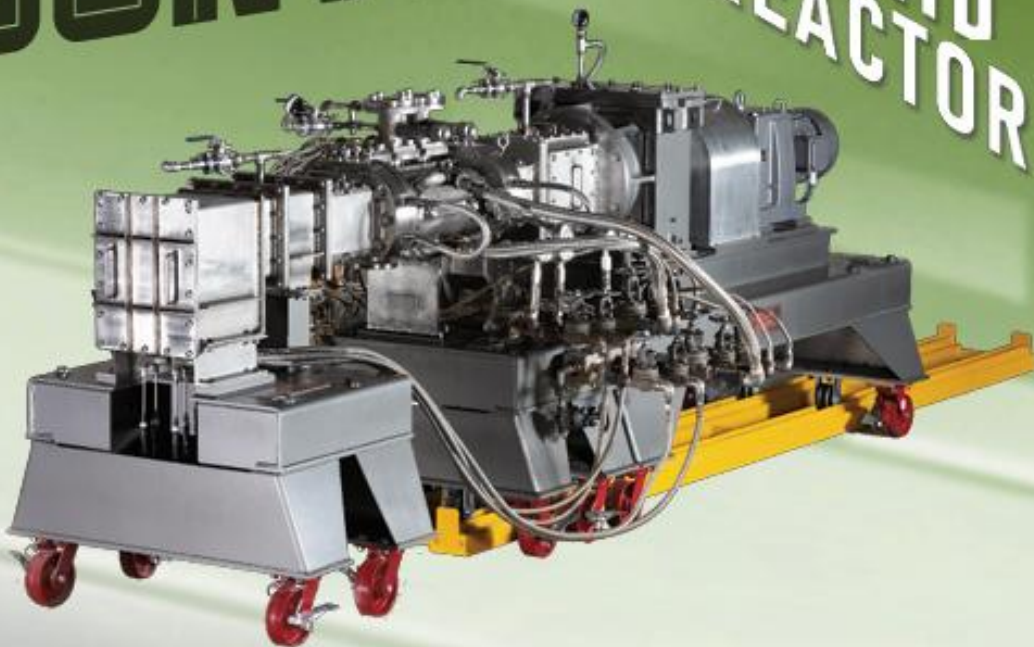




# CONTINUOUS HYBRID REACTOR



## THE CH REACTOR FROM READCO KURIMOTO, LLC

HIGH VOLUME | CONTINUOUS REACTIONS | HIGH HEAT PROCESSING  
VACUUM DRYING | HIGH VISCOSITY | SELF WIPING

# CH REACTOR

## What is it?

The CH Reactor is an enhanced piece of processing equipment that can create an inert environment, or use high vacuum, heating or cooling and mixing to facilitate chemical reactions. The improved heat transfer and mass transfer (mixing) increases the process efficiency, yield and quality of products at a much smaller footprint compared to conventional batch reactors. Smaller reaction volume can offer safety for highly reactive or unstable processes.

## What does it do?

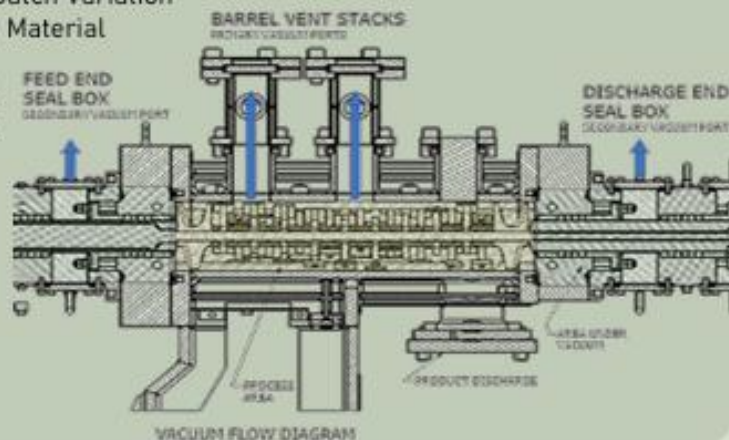
- Polymerization
- Slow and Fast Reactions
- Drying
- Degassing
- Evaporation
- Steam Stripping
- Solvent Removal & Recovery

## How does it do it?

- High Temperature Rated Construction
- High Vacuum Capability
- Efficient Mixing
- Increased Residence Time
- Varying Paddle Configuration
- Indirect and/or Direct Heat Transfer

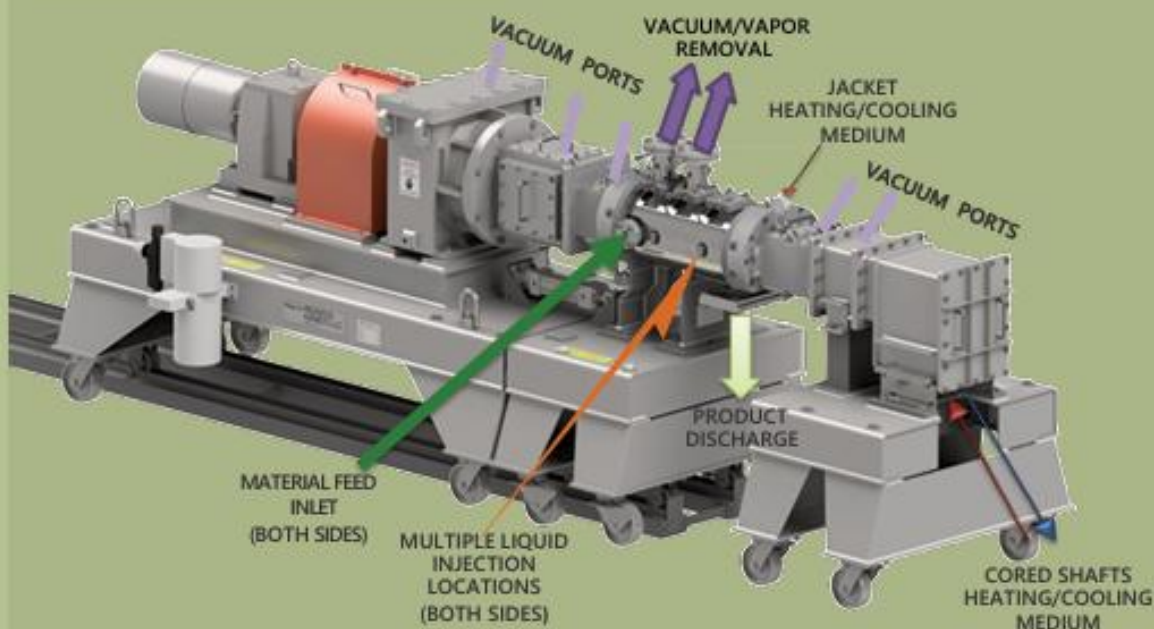
## Benefits

- Processing Temperature and Oxygen Sensitive Materials
- Consistency, no Batch to Batch Variation
- Processing High Viscosity Material
- Easy to Clean & Maintain
- Easy Process Automation
- Plug Flow Characteristics
- Safe Operation
- Self-Wiping
- Reduced Waste



## THE FLOW SHEET OF CONTINUOUS REACTIONS AND DRYING UNDER VACUUM

### HOW DOES IT WORK?



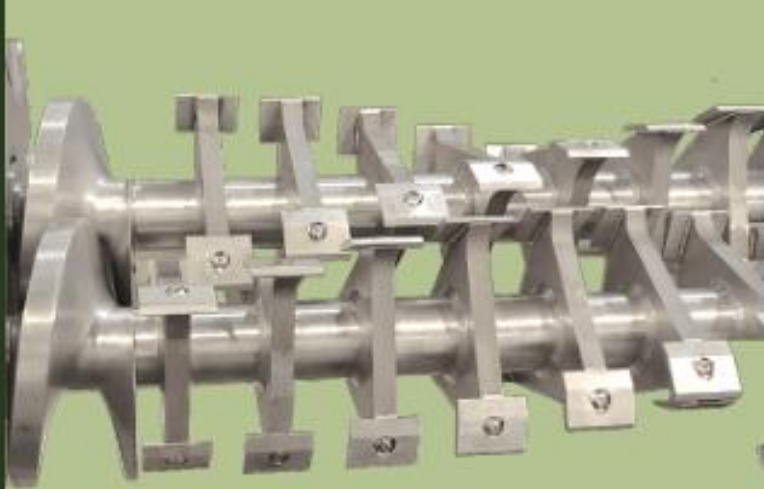
In the CH Reactor, chemical reactions are run continuously under vacuum or in an inert environment. Primary reactants, catalysts and other reagents are fed through the side feed ports and injection ports distributed along the barrel. Once inside, the chemical reaction is initiated and enhanced by mixing and heat. A deep vacuum draw acts upon the material to remove any by-products, volatiles and particulates formed during the reaction. The vapors can then be filtered, condensed and collected for reuse or disposal. The CH Reactor offers better control over reaction conditions including heat transfer, residence time and mixing intensity to produce repeatable chemical reactions.



### What Does It Do?

- Transforms slurries or solutions into powder or flake
- Reclaims liquids through evaporation or distillation
- Facilitates chemical reactions, crystallizations, and polymerizations, producing paste or slurry
- Flexible paddle arrangements to suit a variety of applications





## Features

- Removeable Shafts, with Minimal Disassembly
- One-Piece Stainless Steel Barrel Construction
- ASME Rated Barrel Jacket
- Co-rotating Cored Shafts
- Multiple Vacuum Ports



Additional Options Include:

### Mechanical Options

- Variable Speed Drive
- Hydraulic, Pneumatic, or Electronic Slide System

### Design Options

- Precise Automated Controls - LIW (Loss In Weight)
- HMI Touchscreen Controls
- Electrical Classification (up to Class I Div I)
- CE Compliant

# APPLICATIONS

## Specialty & Fine Chemicals

Polyester  
 Acrylic Resins  
 Polyamide Resins  
 Vinyl Acetate Resins  
 Polylactic Acid (PLA)  
 Polycarbonate Resins  
 Polybutylene Terephthalate  
 Super Absorbent Polymer (SAP)  
 Styrene-Butadiene Rubber (SSBR)

## Monomer Removal & Devolatilization

Special Olefin Series  
 Polystyrene  
 Polyethylene  
 Polyethylene Terephthalate (PET)

## Edible Polymers

Polycondensation of

## Dehydrating

Pharmaceutical  
 Food Drying

## READCO CONTINUOUS HYBRID REACTOR SPECIFICATIONS

PADDLE DIAMETER (IN)	L/D (SCREW LENGTH/DIA.)	A (IN)	B (IN)	C (IN)	D (IN)	E (IN)	INTERNAL VOLUME (FT <sup>3</sup> )	HEAT TRANSFER AREA (FT <sup>2</sup> )
1	4.5	56	30	50	36	46	0.004	0.18
4	4.5	213	48	152	35	53	0.3	3.21
10	4.5	295	59	217	38	59	2.9	14.4
15	4.5	391	75	302	42	69	9.6	32.4
20	4.5	591	87	375	49	85	22.8	57.6
30	4.5	787	118	591	67	106	77.0	129.6
40	4.5	886	128	669	75	118	182.6	230.3
55	4.5	984	138	787	83	130	474.7	435.5
70	4.5	1083	148	886	91	138	978.6	705.4

