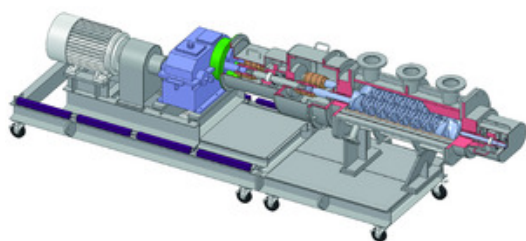


Hybrid Reactor / Twin Shaft Continuous Reactor

Division for this product [Plant Engineering and Machinery Division](#)

Outline



Continuous Reactor for Polymerization (Poly-condensation, Bulk polymerization, Emulsion, Solution polymerization), Monomer removal, Devolatilization and Deaeration

Hybrid Reactor has been added to KURIMOTO's product lineup. This new reactor is the next level in enhanced performance from our hold-up type reactors, and is based on KURIMOTO's knowhow for its twin-shaft continuous kneader ([KRC Kneader](#)) gained over many years. Hybrid Reactor has excellent basic performance in areas such as high-viscosity continuous processing, maintaining long residence time, plug-flow characteristics (narrow residence time distribution), self-wiping performance and surface renewal effectiveness. Efficient production is possible for process such as polymerization reactions and high degrees of residual monomer/solvent removal.

Keyword Product genre

[continuous reactor](#) [Monomer Removal](#) [Devolatilization](#) [Deaeration](#) [polymerization reactor](#) [polyamide](#) [polycarbonate](#) [polyester](#)

Features

Excellent Plug-Flow Characteristics and Self-Wiping Performance

Enable to obtain sharp residence time curve and homogeneous reaction processing.
Excellent Self-Wiping performance are provided by rotating with maintaining a certain clearance.

Large Surface Renewal Effectiveness and Degassing Structure

Enable to form the large gas-liquid interface and surface area, and achieve excellent accelerated reaction effect.

Enable to adapt for large quantity output

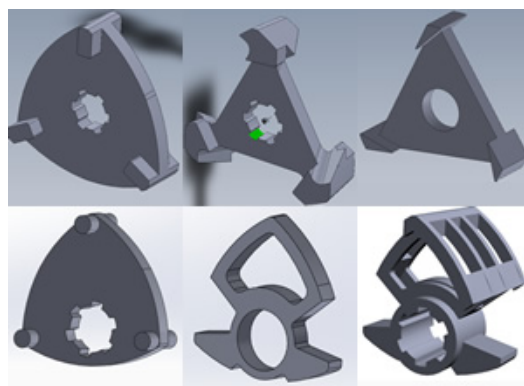
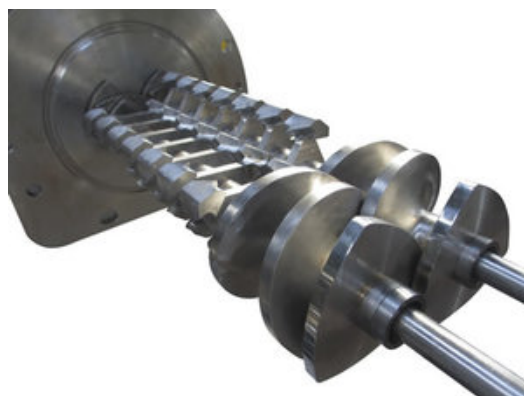
Capacity: 2L - 50,000L

Operation under high temperature and high vacuum condition

Temperature: ~350℃
Pressure: 100 Pa - 0.6 MPa

Long Residence Time Performance

The uniquely-shaped various type of blade can be selected.

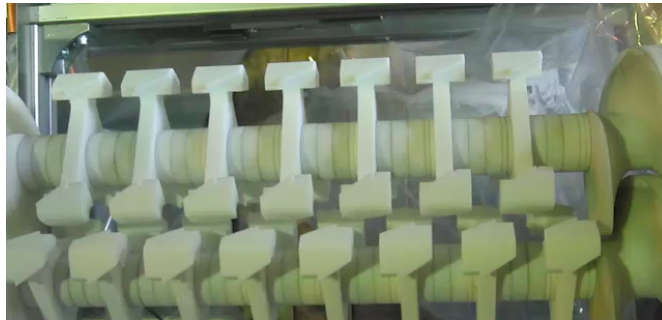


The uniquely-shaped various type of blade can be selected.

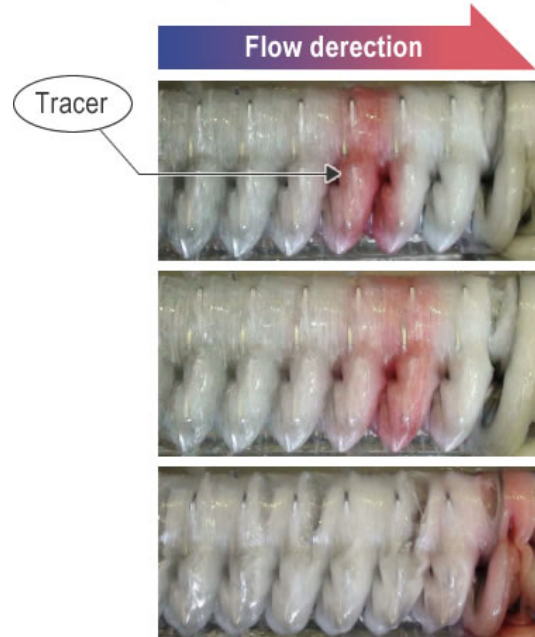
Outstanding product discharge performance

Enable to stable discharge of high viscosity products
Various type of discharge methods can be selected

* If required excellent mixing and dispersion capability, [KRC Kneader \(Continuous Kneader / Reactor\)](#) would be a solution.



Plug-flow characteristic



Key word Customer topic

[continuous](#) [tw in screw](#) [reaction](#) [polymerization](#) [self-wiping](#) [monomer removal](#) [desolvation](#) [vacuum](#)
[decompression operation](#) [defoaming](#) [deaeration](#) [devolatilization](#) [high vacuum condition](#)

Applications

Examples of applications

Reaction (Polycondensation, Bulk polymerization, Emulsion, Solution polymerization etc.)

Polyamide resins
Polycarbonate resins
Esterification reaction (Polyester, PLA etc.)
Super absorbent polymer
Acrylic resins
Vinyl acetate resins
Polybutylene terephthalate

- Continuous reactor for high viscosity polymers
(Polymerization, Poly-condensation, Bulk polymerization, Emulsion, Solution polymerization etc.)
- Residual monomer/solvent removal in ppm order
- Replacement from Batch Reactor to Continuous Reactor (Process Improvement)
- As the finisher or preliminary polymerizer in various processes

Monomer removal and devolatilization

Special olefine series (PS and PE series) materials
Polyamide
PET, etc.

Deaeration

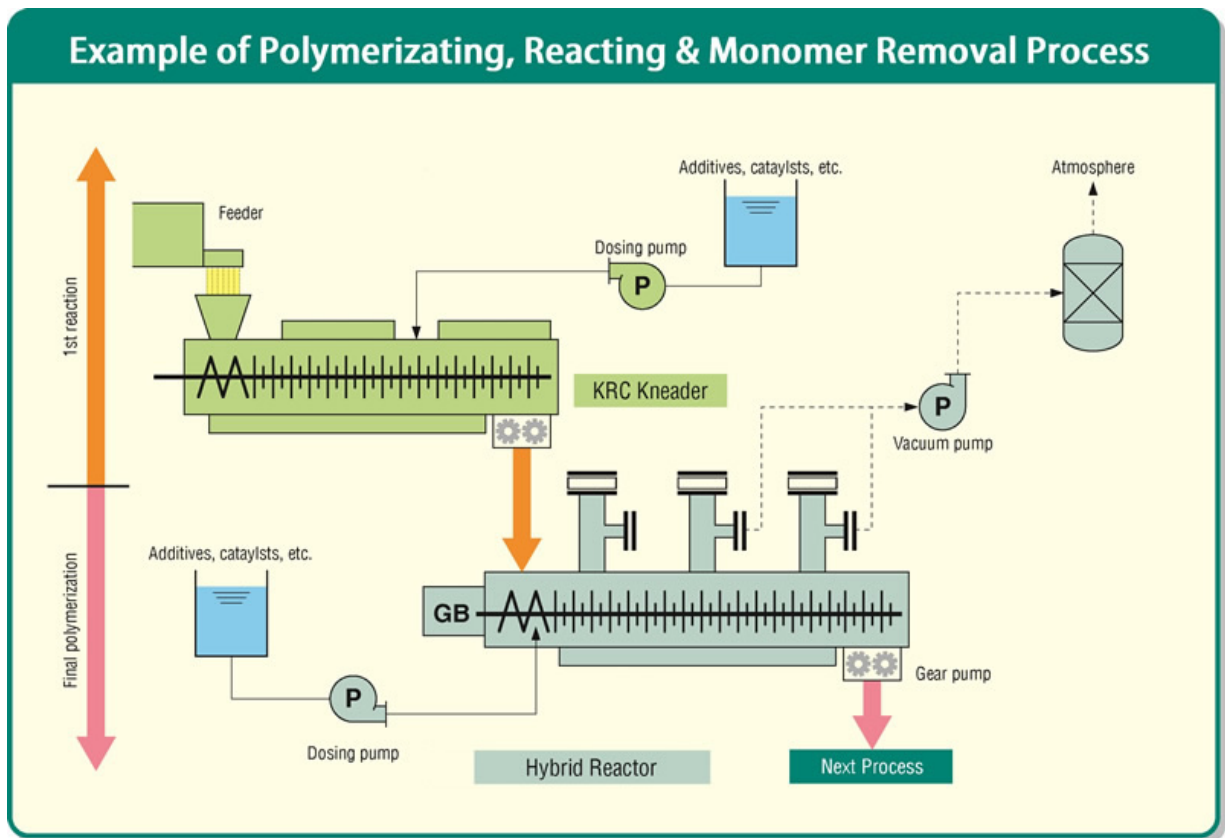
Sealing materials

Key word Product application

[Plastics](#) [Polymer](#) [Sealant](#) [Resin](#) [Polyamide](#) [Polycarbonate](#) [Engineering Plastics](#) [Polyacetal](#) [POM](#)
[PA](#) [PC](#) [Polyester](#)

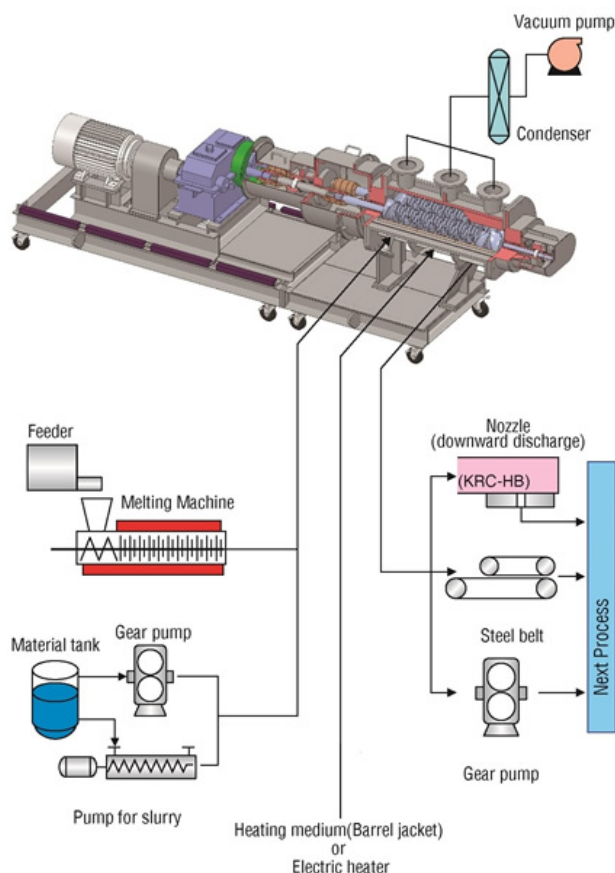
Details

■ Sample Flow



Hybrid Reactor has several options of discharge methods (Nozzle, Vacuum tank, Gear Pump etc.) and can transfer to the next process.
 Discharge methods are decided from products property (powder and granular material, strand material, high viscosity paste etc.)

■ Sample Test Flow



Two Size (8L & 65L) of Hybrid Reactor as test machines are installed in our Machine and Technology Center in Sumiyoshi Factory, Japan and trials are available under high vacuum and high temperature condition with your raw materials.
 If you have any inquiries about kneading, reaction, and granulating tests, please feel free to contact us anytime.

Others



[PDF for printing](#)

Keyw ord Applicable processes

[Reaction](#) [Polymerization](#) [Poly-condensation](#) [Emulsion](#) [Solution polymerization](#) [Monomer Removal](#)
[Devolatilization](#) [Deaeration](#) [Defoaming](#) [Continuous](#)

Keyw ord Applicable industries

[Chemical](#) [Plastics](#) [adhesive](#) [Polymer](#) [Sealant](#) [Resin](#) [Polyamide](#) [Polycarbonate](#)
[Engineering Plastics](#) [Polyacetal](#) [POM](#) [PA](#) [PC](#) [Polyester](#)

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