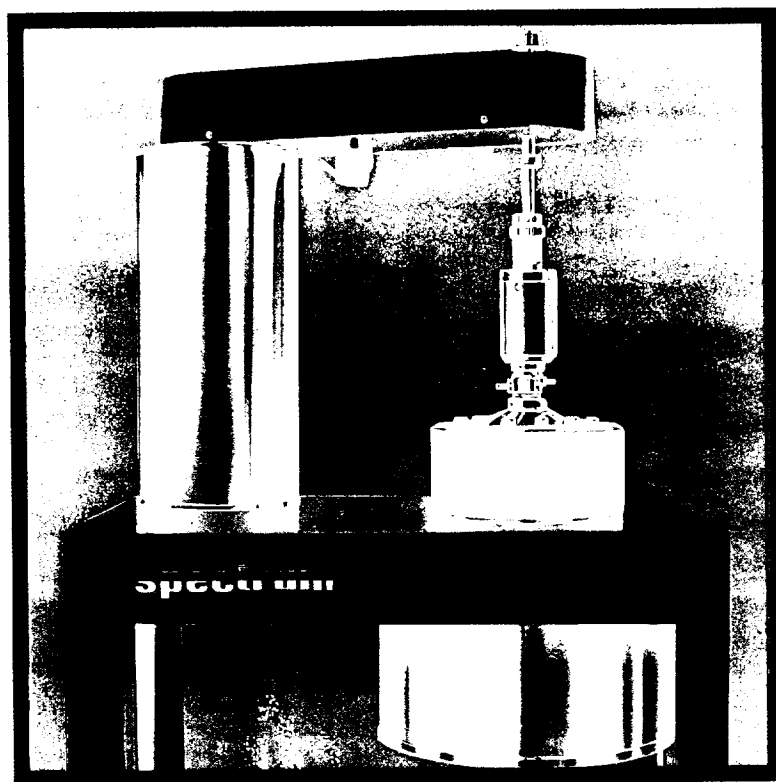


# SPECTRUM

...the easy reactor



reconfigurable stirred  
tank element

**xytel**



# The SPECTRUM Strategy

The SPECTRUM is an exciting new tool for reactions and separations research. Here is the world's first totally reconfigurable stirred reactor designed for operation at pressures up to 5,000 psi at 500°C. It can be operated either as a stand-alone unit or as part of an integrated system. Most importantly, the SPECTRUM is easy to use. And we have overcome the problems you face with other reactors.

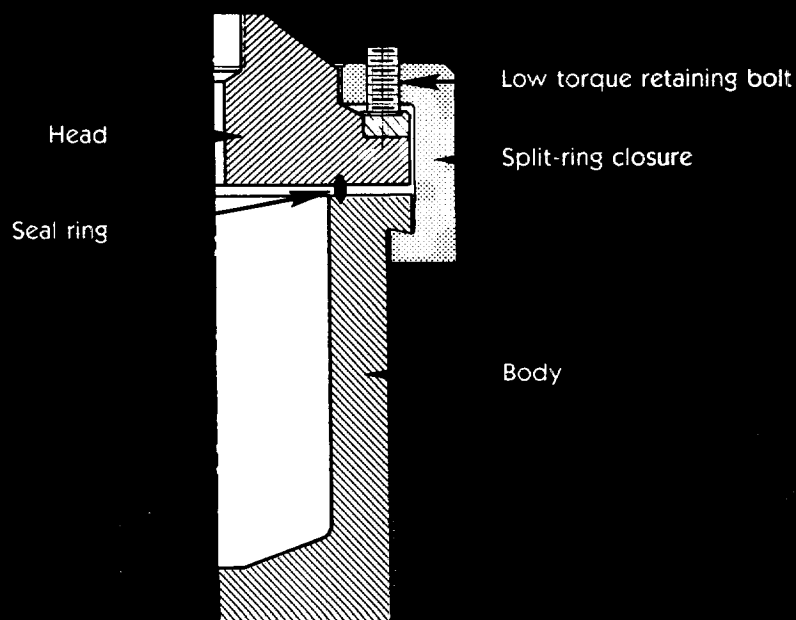
## Easy to Use

The SPECTRUM assembly features a swing-away drive arm that gives you free access to the reactor head work area.

Our split-ring closure is a snap to use, and makes for totally effortless assembly and disassembly. You free yourself from leak prone bolted O-ring closures, and their requirements for physical strength, high torques and precision tightening.

## Top Choice

Our magnetically coupled drive is positioned on top of the SPECTRUM. This means you avoid the three "C" problems common to bottom-mounted devices: condensation, contamination and corrosion.



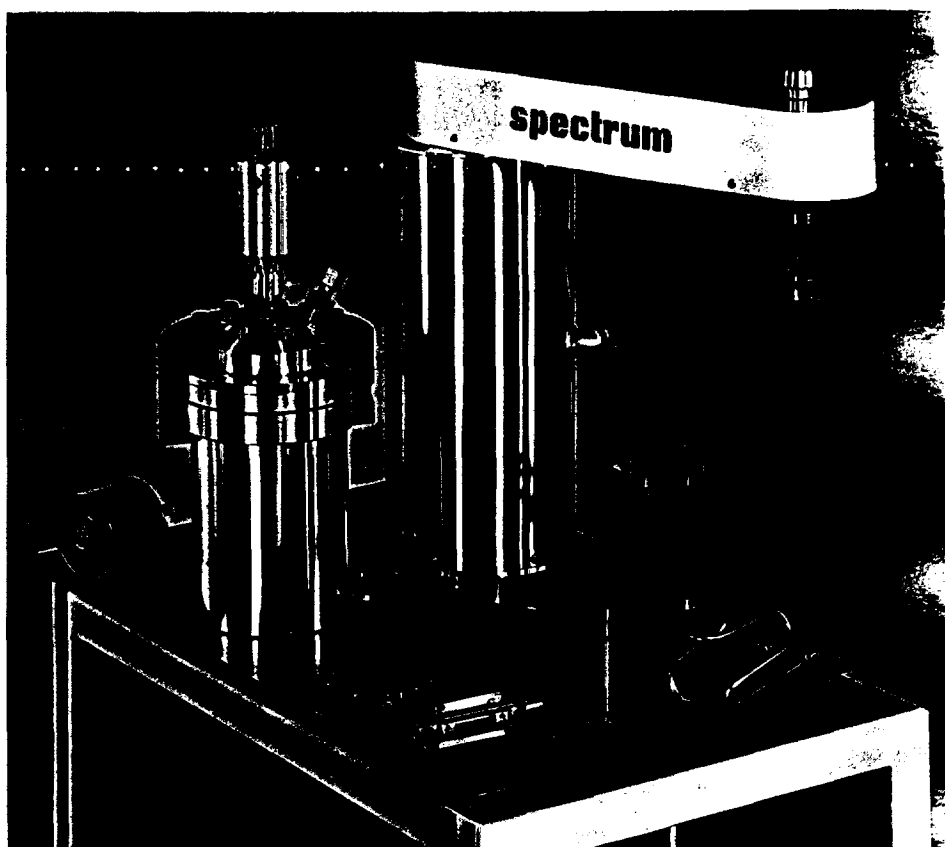
2025621250

# Total Flexibility

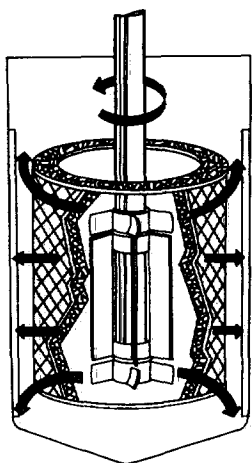
The power of the SPECTRUM lies in its internals. These interchangeable elements let you switch freely from one experimental configuration to another.

Every SPECTRUM is supplied with 3 separate standard internals. You get enough built-in flexibility to meet a wide range of requirements in your reactions or separations research program.

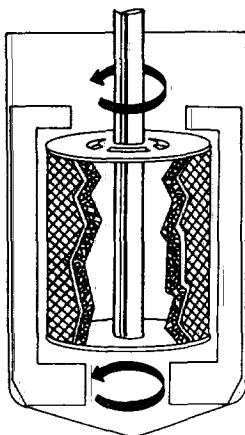
For special applications, the SPECTRUM can be easily fitted with your choice of custom designed internals.



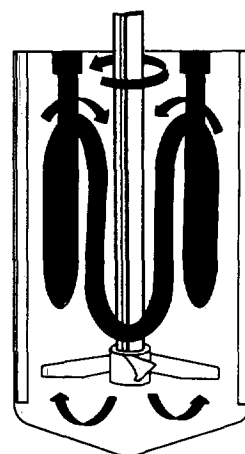
## Standard Internals



Static basket Robinson-Mahoney reactor for gas/vapor or liquid phase heterogeneous reactions—the best option for heavy or highly viscous fluids.



Kinetic basket with T-john-Carberry cruciform or Robinson annular cage for gas/vapor phase heterogeneous reactions.

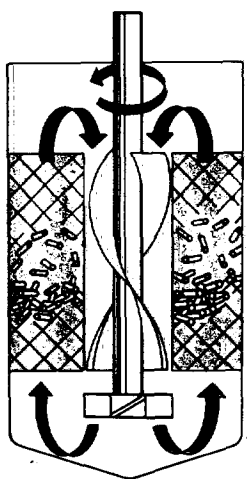


Stirred tank reactor with heat transfer coil—batch (STAR) or continuous (C-STAR) element. In this configuration, the SPECTRUM can be used to study homogeneous catalytic or slurry reactions. It can be operated in a partial (with overflow gas head) or flooded mode.

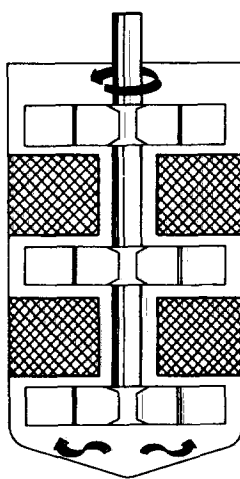
The SPECTRUM is gradientless with respect to mass and heat transfer. As a heterogeneous reactor, it produces data free of diffusional and thermal falsification.

2025621251

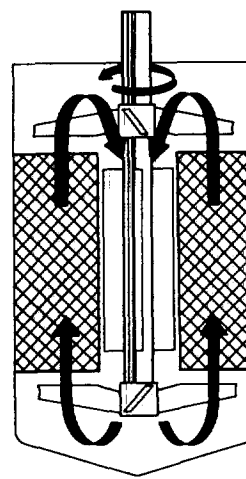
# Some Custom Designed Internals



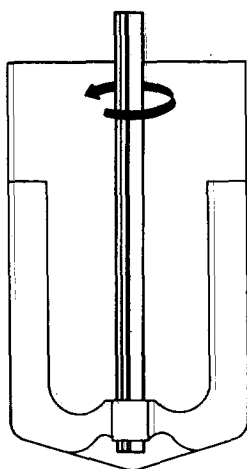
Expanded ebulliating bed reactor



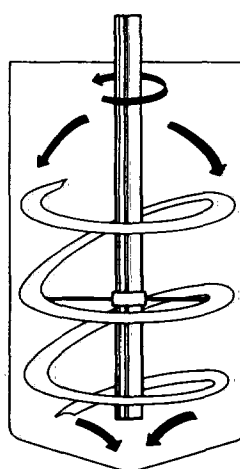
Rotating disc column, Scheibel-type design



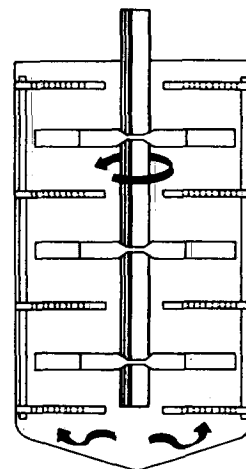
Packed bed extractor



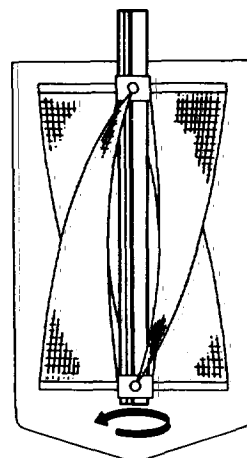
Anchor-type stirrer



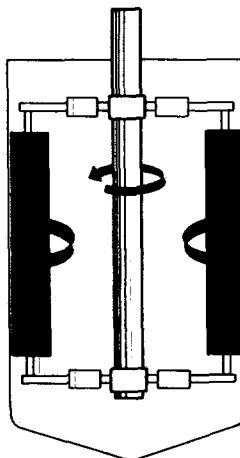
Helical stirrer



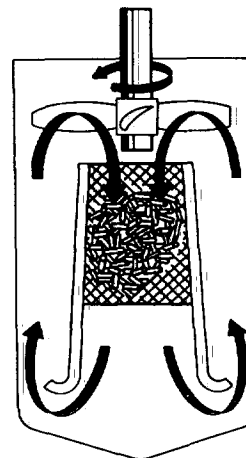
Rotating disc column, York-type design



Soft sail paddle



Thin film transfer element



Reverse Caldwell reactor

2025621252

# Specifications

**Internal volume:** Standard volumes are 500 mL and 1,000 mL. Other capacities available.

**Body:** Strobe designed L/D ratio of 1.5 for optimum backmixing.

**Head:** Set up for easy reconfiguration. Reactor can be used in either overflow or flooded mode. Multiple ports for separate gas and liquid inputs. Optional holes in split-ring allow side entry into the reactor.

**Materials of construction:** 316SS standard. Other materials and special finishes available.

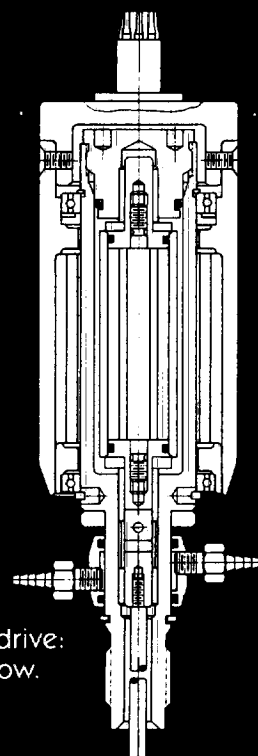
**Pressure & temperature rating:** 316SS SPECTRUM, 5,000 psi @ 500°C.

**Motor:** Standard 1/4 HP variable speed DC motor. Explosion-proof and air driven motors available as options.

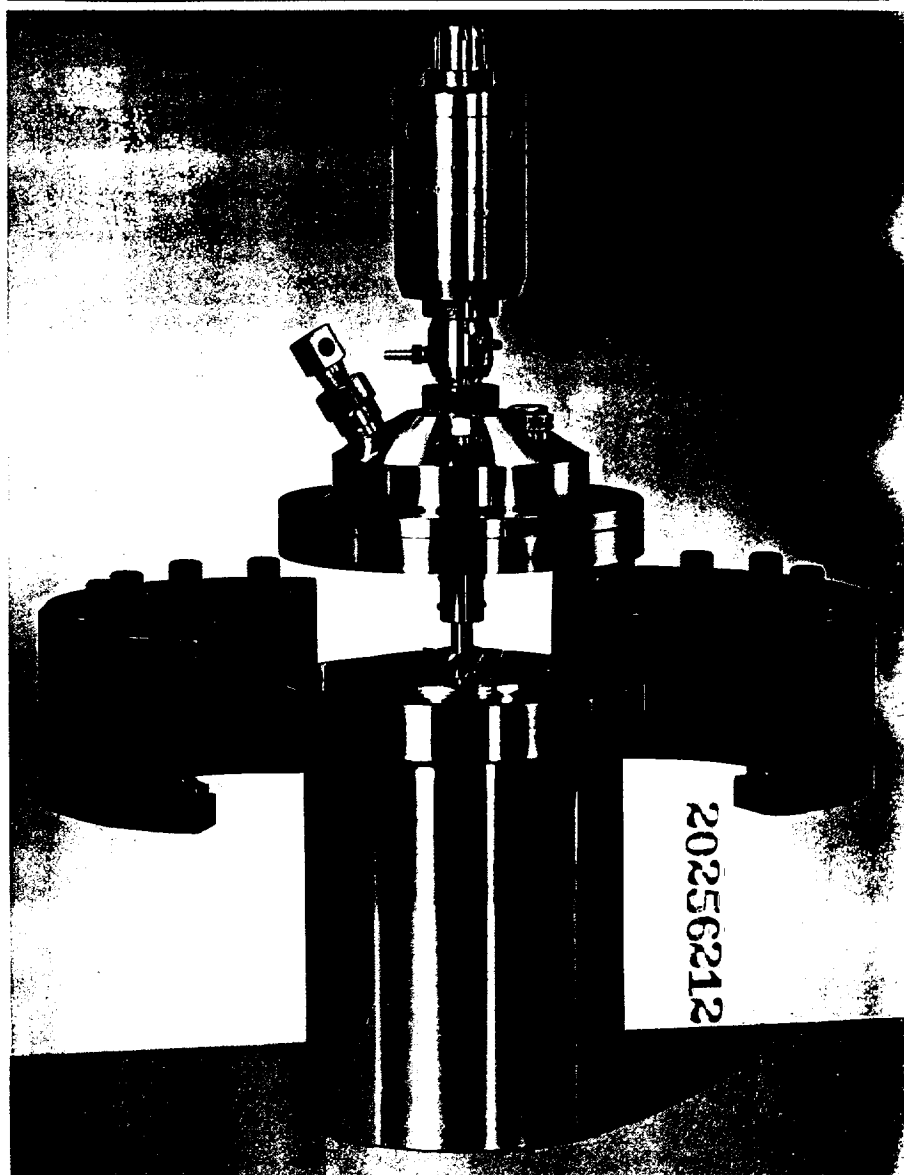
**Magnetically coupled drive:** Maximum RPM, 1,800. Torque, 9 inch-pounds.

**Furnace:** Standard, 530°C, 3 zones each 0.8 kW, wired for 120 VAC or 240 VAC optional.

All specifications are subject to change.



Magnetically coupled drive:  
magnets shown in yellow.



# SPECTRUM

...the easy reactor

Heterogeneous catalysis

Homogeneous catalysis

Polymerization

Separations

Biotechnology

## The SPECTRUM Advantage

- Total flexibility
- Easy to use
- Swing-away drive arm for free access
- Split-ring closure for effortless assembly/disassembly
- Magnetically coupled drive on top of reactor
- Static basket reactor, standard
- Kinetic basket reactor, standard
- Stirred tank reactor with cooling coil, standard
- Custom designed internals

Xytel Corporation is the world's leading designer and builder of advanced systems for catalyst and separations research. Projects range in size from lab scale units to commercial miniplants. Technology applications cover petroleum refining, petrochemicals, chemicals, new energy sources, foods and pharmaceuticals. Xytel's customers include companies and organizations throughout North America and the world.

2025621254



# xytel

Xytel Corporation  
801 Business Center Drive  
Mt. Prospect, Illinois 60056, USA  
Telephone 312 299.9200  
Telex 270672 XYTEL MPCT

Form XSP-1000, Printed in U.S.A.