PRODUCT DATASHEET

Pilot Bio-Refinery Rig

Pretreatment, hydrolysis, fermentation and recovery rigs for research

Product page





Close-up: pretreatment reactor and flash vessel

OVERVIEW

The Tech Inc. Pilot Bio-Refinery Rig takes biomass, starch or sugar feedstocks through the steps of a bio-refinery at research scale: pressure pretreatment, enzymatic hydrolysis, fermentation and product recovery. Each step is a separate, instrumented vessel, so researchers can run the full chain or study one step, and every temperature, pressure and pH is logged.

TYPICAL DESIGN DATA

Pretreatment	To about 20 barg and about 220 °C
Hydrolysis and fermentation	Atmospheric to about 2 barg, about 25 to 70 °C
Materials	316L; duplex or alloys for acid pretreatment
Control	PLC and SCADA with recipes and data export
Sterilisation	Steam-in-place for the fermenter
Design code	ASME VIII for pressure vessels

MODELS AND CAPACITIES

- **TI-PBR-10** – about 10 L vessels
- **TI-PBR-50** – about 50 L vessels
- **TI-PBR-200** – about 200 L vessels
- **TI-PBR-500** – about 500 L vessels

Indicative working volume of the main vessels.

ORDERING CODE

Example **TI-PBR-50-F-S**: **50** working volume of the main vessels, L; **F** scope: F full chain, P pretreatment only, D downstream only; **S** separation: S filter press, C centrifuge, M membrane.

SCOPE OF SUPPLY

Included: factory acceptance test with a written report; drawings for approval, material certificates and manual.
Options: steam generator; filter press, centrifuge or membrane module; online HPLC sampling point; clean-in-place system; training and process-trial support.

KEY ADVANTAGES

- **Full chain** – from feedstock to product on one rig
- **Data for scale-up** – every variable logged
- **Flexible** – run one step or all of them
- **Safe** – pressure relief, interlocks and steam handling

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Designed and built by Tech Inc. · **Part of the Davey Group since 1990**

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