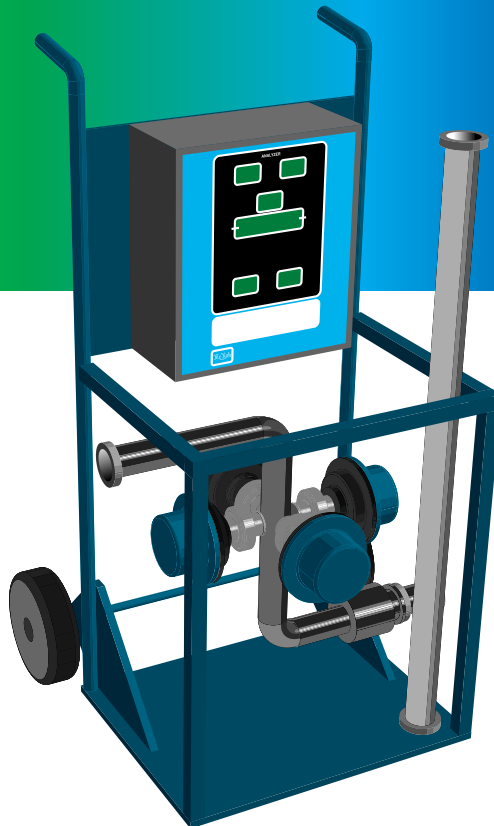
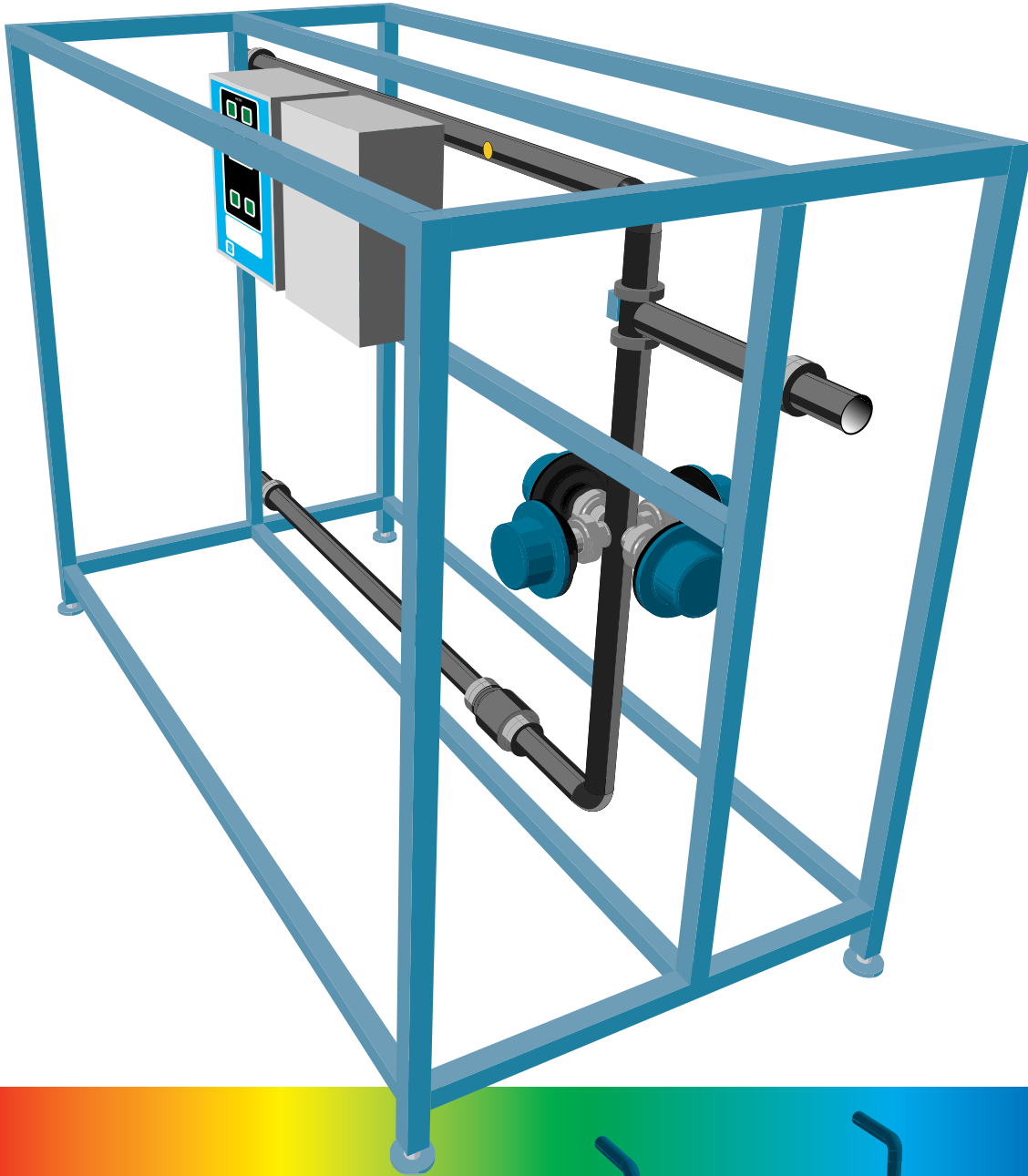


# Skid Blending System

For automatic and  
continuous real-time  
blending in beer  
processing.



## Model SKID

McNab, Inc.  
Mount Vernon  
New York, USA

# Complete, Accurate Proportional Blending

## Model SKID

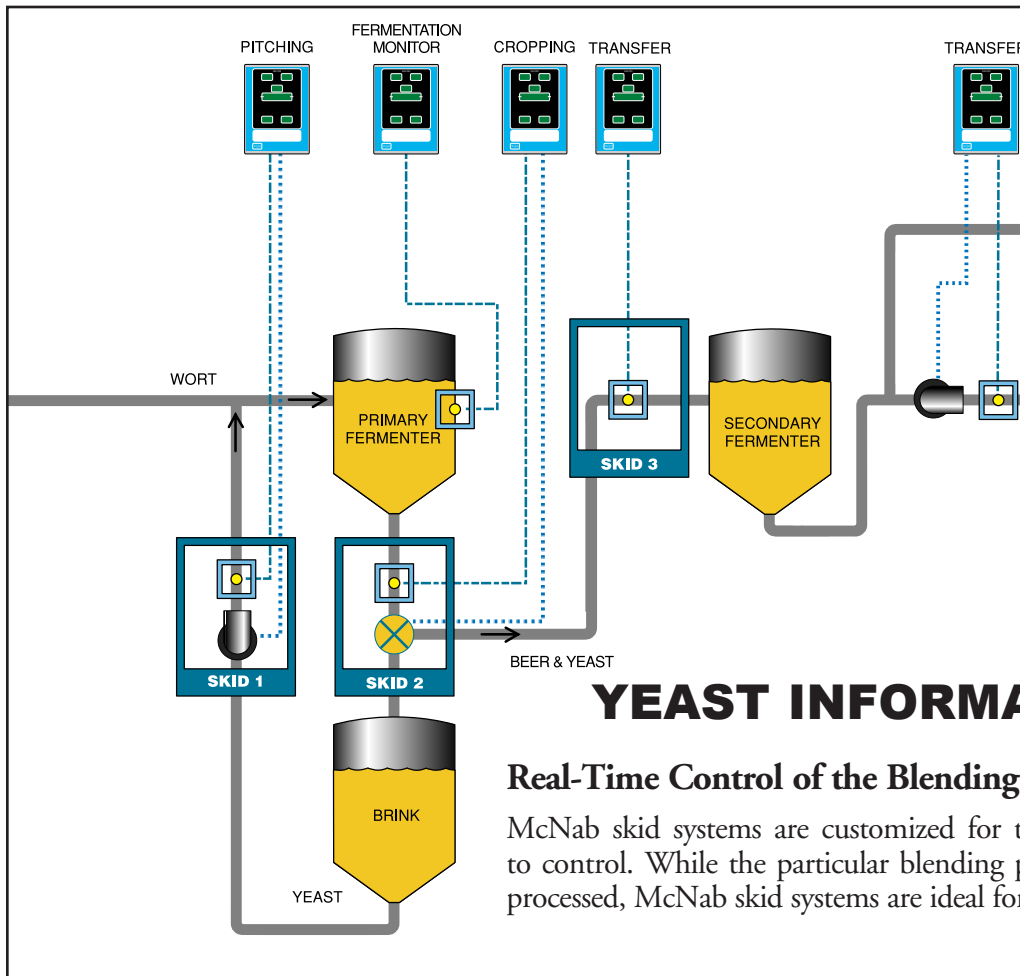
### How McNab Skid Systems Work

McNab Skid systems monitor the properties of the in-process beer to automatically control a brewing process. It does this by monitoring the characteristics of the brew, comparing them against a set of pre-programmed conditions, and continuously controlling the materials being blended to assure a consistent brewing process and a high-quality finished product.

The monitoring is performed by McNab fluid analyzers, which examine such properties as suspended solids concentration, particle size, clarity, chemical concentration, optical density and others.

The monitors employ an across-the-pipe measuring technique, whereby a beam of collimated light is shone through the process line and picked-up by a photoelectric scanner. The scanner processes the signal and transmits the real-time data to an indicator/controller cabinet, which processes the signals and compares them to established set-points. As the brew's properties deviate from the set point, output control signals from the cabinet are continuously varied to control the flow of the blending agents into the process line.

The measuring technique employed is dependent on the process being monitored. McNab analyzers employ a variety of measuring techniques, including nephelometric (90° scatter), back-scatter, forward scatter, ratio, ultraviolet and near-infrared measurements.

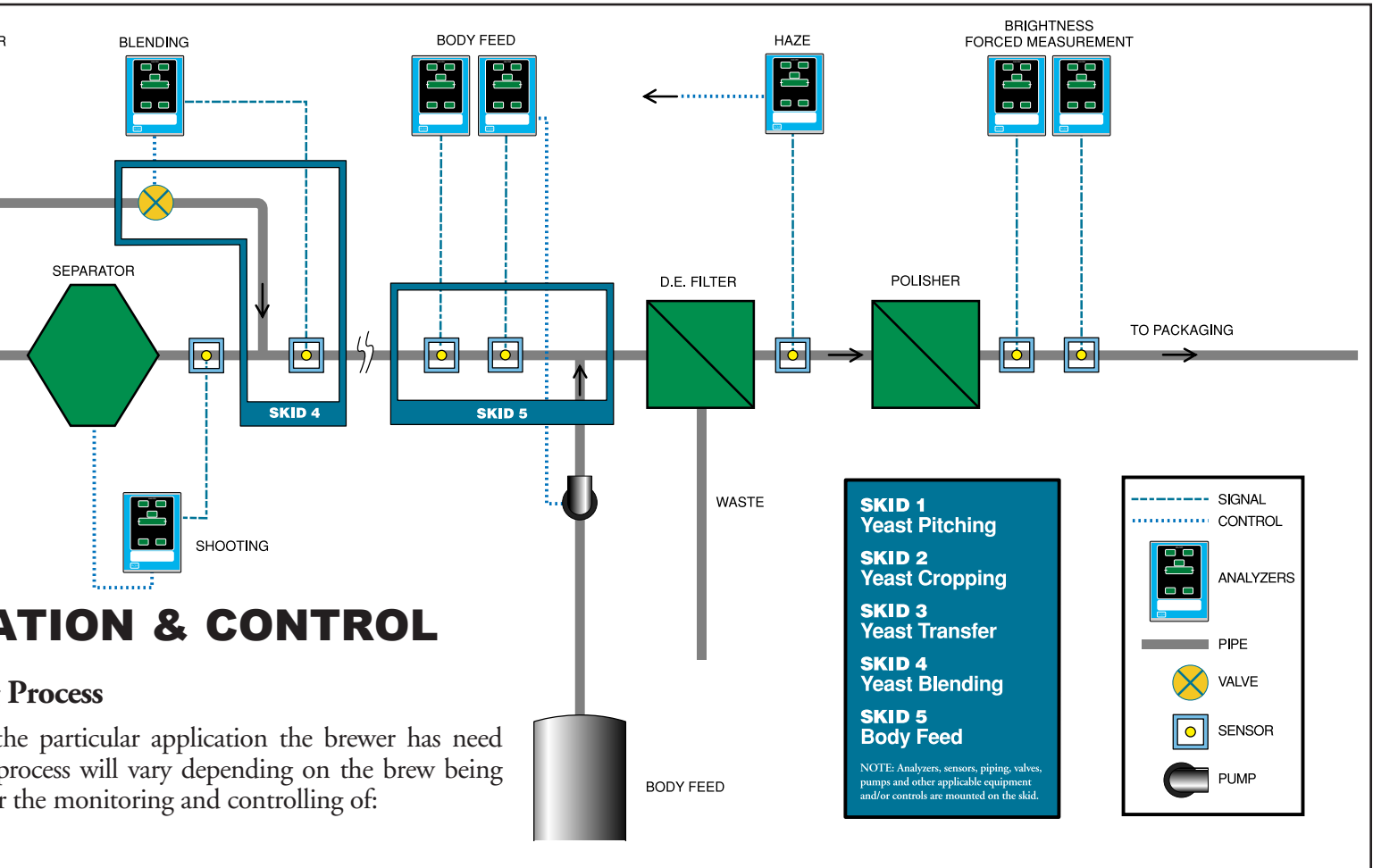


### Modular Process Skids For The Brewery

Providing the most advanced cell analyzers available, McNab's modular process skids facilitate the brewing process. From process design, component selection and system integration to testing and start-up, McNab skid systems provide quality control and cost savings for today's breweries.

#### *McNab skid systems give you:*

- **Total Control** - McNab designs, engineers, constructs, tests and delivers the skid to your brewery. Multiple vendor management, conflict resolution and cost-overrun issues are eliminated, allowing you to concentrate on the brewing process.
- **Customized Designs** - McNab skids can be developed for 2" to 6" (50mm to 150mm) pipes with application-specific instrumentation and controls for pitching, dosage, cropping, transfer and other blending operations.
- **Value** - Frame, analyzers, flow meters, sight glass, valves, electronics and process piping are delivered to you as a complete package; all from one quality-assured source.



## MONITORING & CONTROL

### Process

The particular application the brewer has need for the monitoring and controlling of:

#### PITCHING SKID 1

To achieve accurate pitching levels, this skid relies on continuous in-line counting of cells by an analyzer, instead of hand-performed “spin-downs”. In-pipe analysis assures pitches at target levels,

#### YEAST CROPPING SKID 2

To add precision to yeast cropping, accurate cropping of yeast from the fermenter cuts costs by preventing beer from being transferred to the brinks. Measurement is typically in percent solids by volume. Optical differentiating of yeast and beer is ten-times more accurate than weight densities of yeast and beer.

#### YEAST TRANSFER SKID 3

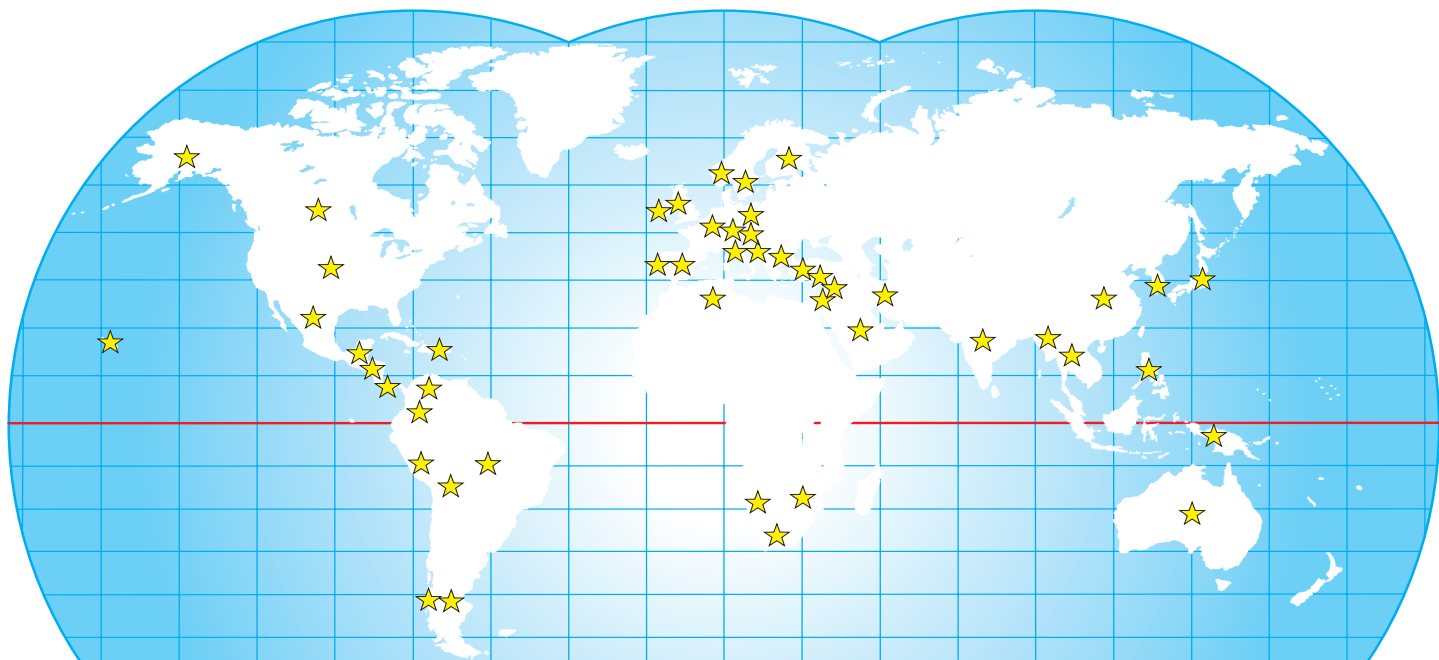
Where plant operation is improved with actual continuous measure in the pipe of total yeast transferred from the fermenter, the McNab skid system makes an actual measure (30 - 55 percent solids by volume) of yeast cells, correlating closely with spin-down, Coulter counter and other accepted lab methods

#### YEAST BLENDING SKID 4

Where the brewmaster requires re-introduction of yeast after centrifuge or other clarifying, this skid blends clear beer and yeast to the required yeast levels, for example blending from 6 to 12 million cells/ml.

#### OTHER CUSTOM SKIDS

With nearly four decades of experience in beer process monitoring and control, McNab has the capabilities to custom-design the skid system perfectly suited for the needs of today’s breweries. McNab skids can be customized to control the brewing process by monitoring suspended solids concentration, particle size, clarity, chemical concentration, optical density and/or other characteristics of the in-line beer.

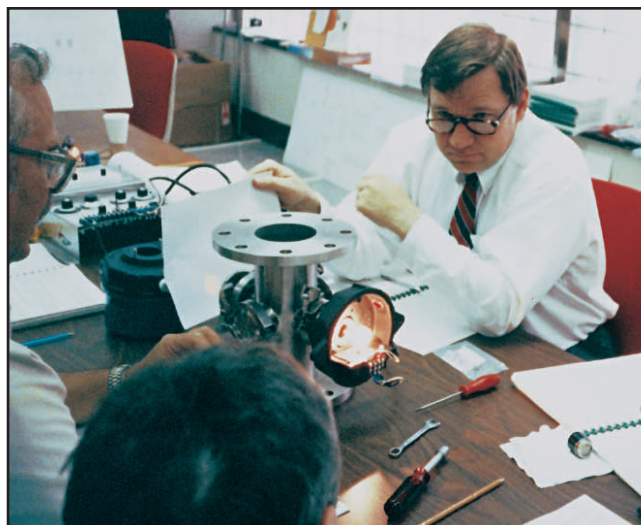


## About McNab

McNab, Inc., is located in metropolitan New York City. Our offices in Mount Vernon, New York include our research & development laboratory, design engineering department, modern manufacturing plant and automatic testing facilities to evaluate our products. McNab's Quality Assurance Process meets Mil-I-45208. We also maintain an engineering and parts facility in Europe.

### TYPICAL SPECIFICATIONS

Pipe In:	ASTM Flanges 2" to 6" 50mm to 150mm DIN
Pipe Out:	ASTM Flanges 2" to 6" 50mm to 150mm DIN
Side Stream:	ASTM Flanges 1/2" to 2" DIN 25mm to 50mm
Floor Area:	1m x 2m
Skid Weight:	750 pounds
Skid Height:	2m
Factory Service:	117/230, 50 or 60 Hz
Construction Material:	Wetted parts 316 (typical), epoxy coated steel
Analyzer:	Application dependent. Typically optical cell counter.
Flow Meter:	Mass flow meter, electronic type
Sample Port:	Zwuckles
Totalizer:	Included as necessary
Output to Factory:	4-20 mA Isolated
Controller:	Included for valve or pump as appropriate
Side Stream Supply Tank:	By others with its level signal
Matching Laboratory Unit:	By McNab
Operational Control:	Typically across 10 to 1 change of concentration and/or flow.
Custom Design:	Cascade for larger changes.
Training and Commissioning:	Developed per specifications
Laboratory Analysis/Work-up:	On site
Instruction Manual:	Available
	Typically to include layout and PI & D diagram, skid assembly diagram, pump control wiring diagram (as applicable), flow meter control, wiring diagram, main control system wiring diagram, valve control wiring diagram.



Field training is part of McNab service

*Specifications may be changed or improved as necessary.*

Available From:



**McNab, Incorporated**

20 North MacQuesten Parkway  
Mount Vernon, New York 10550  
Telephone: (914) 699-1616  
FAX: (914) 699-1671  
info@themcnab.com  
www.themcnab.com