

## Membrane Filtration

### Model G Membrane Filtration Pilot Plant

The GEA Filtration Model G membrane filtration pilot plant is a pilot-scale plant designed specifically for application development utilizing specialized tubular microfiltration membranes cast on a microporous, sintered stainless steel support structure.

The tubular format, sintered stainless steel membrane is ideally suited to difficult process streams characterized by high viscosity and/or high suspended solids load. The active membrane layer is titanium dioxide (TiO<sub>2</sub>) making it virtually unaffected by extremes in temperature, pressure or pH. The robust, seal-less and gasket-less module design makes it well suited for organic solvent applications and also allows for aggressive clean-in-place (CIP) with inexpensive, bulk chemicals.

In its base configuration, the Model G is configured with a single recirculation stage but an optional two stage design is also available providing for double the operating capacity. The plant can be operated in semi-batch or continuous feed-and-bleed mode.

All vital process parameters are easily manipulated for effective and efficient process development and optimization.

#### Standard Features

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- 30 gallon balance tank
- Feed pump, centrifugal-type with 10 HP TEFC motor
- Heat exchanger, tubular-type, one each for heating and cooling
- Temperature and pressure indicators
- 6" diameter by 10' long tubular sintered stainless steel microfiltration module, 3/4" diameter flow channels, 0.1 μ nominal pore size, ASME code design and stamp
- Recirculation pump, centrifugal-type with 20 HP TEFC motor
- Flow meters, magnetic-type for feed, recirculation and permeate flows
- Flow meter, mass-type for concentrate flow
- Control and routing valves
- Assembled on a tubular stainless steel frame
- Control panel



#### Unique Features

- Designed and built for application development of TiO<sub>2</sub> microfiltration membrane material cast on a tubular sintered stainless steel support structure

#### Operating Conditions

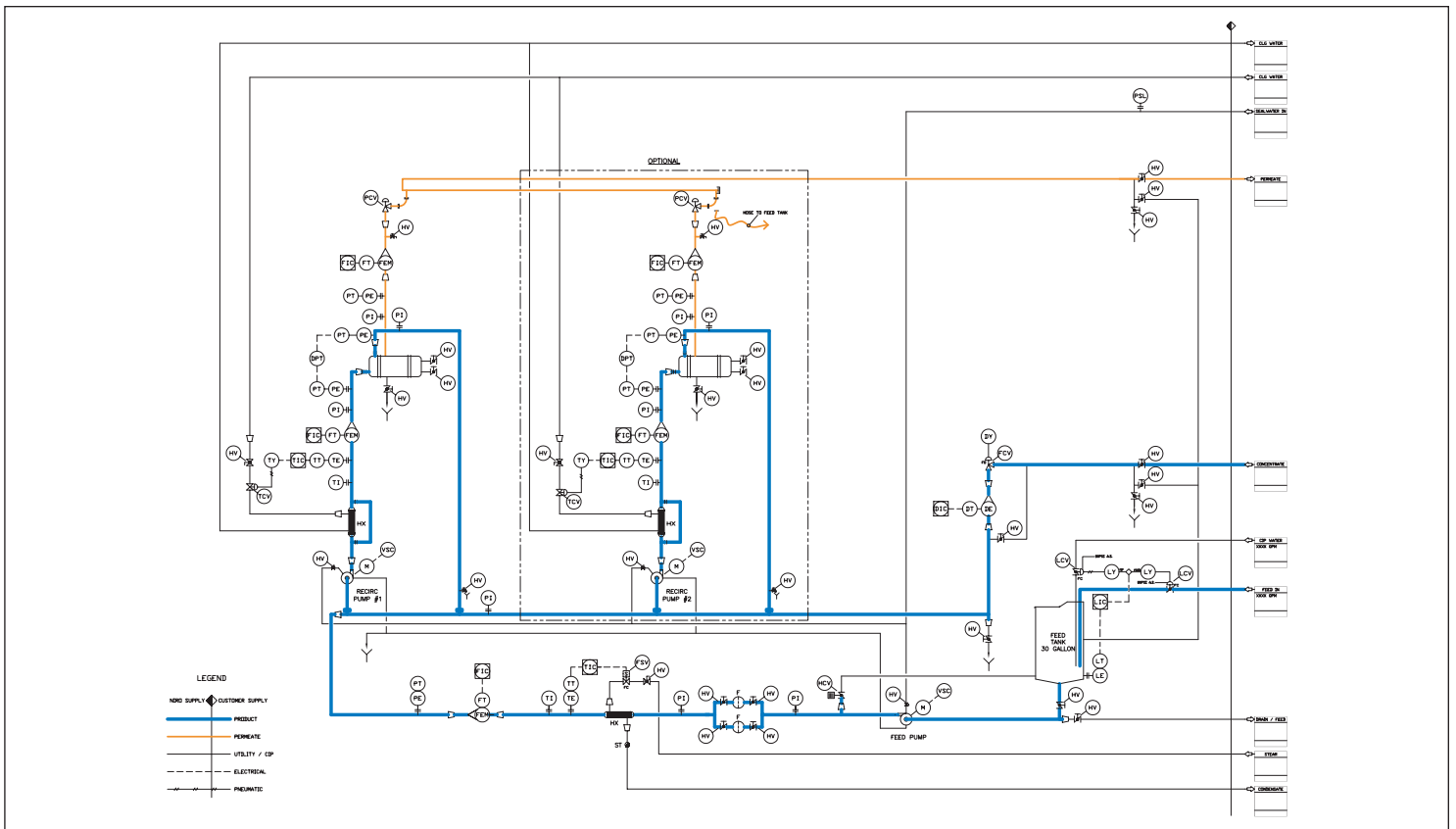
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|-----------------|---------------------------------------|
| • Membrane area | 4.9 m <sup>2</sup>                    |
| • Pressure      | up to 150 psi (10 bar)                |
| • Temperature   | up to 250 degF (120 degC)             |
| • Feed Flow     | up to 60 GPM (13.6 m <sup>3</sup> /h) |

#### Optional Features

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- Two recirculation stage design
- Hazardous area electrical construction
- Steam sterilization
- 3/8" or 1/4" diameter flow channels
- 0.02 μ nominal pore size



GEA Filtration is part of GEA, an international process engineering leader in the life sciences industry with more than 150 companies operating worldwide. As a team member with other technology leaders within the group, GEA Filtration is uniquely positioned to provide both customized membrane filtration plants as well as complete process lines specifically tailored to each customer's individual needs and requirements.

GEA Filtration is world renowned for its design of the most advanced cross-flow membrane filtration systems available, namely Reverse Osmosis (RO), Nanofiltration (NF), Ultrafiltration (UF) and Microfiltration (MF). We also offer a wide range of system configurations and membrane types to provide the customer with the most technically proficient and cost effective solution for each application.

For more information on the capabilities of our pilot plants, consult our website at [www.geafiltration.com](http://www.geafiltration.com).

## Utility Requirements

- Floor space 5'W x 14'L x 8'H
- Shipping weight 5,000 lbs
- Voltage/PH 440V/3PH
- Total HP 30 HP
- Feed Line Fitting 1 1/2" TC
- CIP Fitting 1 1/2" TC
- CIP Flow 20 – 30 GPM
- Drain Fittings 1 1/2" TC
- Tank Drain 2 1/2" TC
- Product Outlets 1 1/2" TC
- Seal Water In 3/8" poly
- Seal Water Out 3/8" poly
- Seal Water Flow 1 – 2 GPM
- Cooling In 1 1/2" TC
- Cooling Out 1 1/2" TC
- Cooling Flow up to 10 GPM
- Steam In 3/4" NPT
- Steam Out 3/4" NPT
- Steam Required up to 100 pph, 50 psi
- Compressed Air Inlet 1/4" poly
- Air Required 25 scfm, 80 psi
- Caster Mounted No



GEA Process Engineering Inc. • 9165 Rumsey Road • Columbia, MD 21045  
Tel: 410-997-8700 • Fax: 410-997-5021 • Email: [gea.pe.na@geagroup.com](mailto:gea.pe.na@geagroup.com)

GEA Process Engineering Inc. • 1600 O'Keefe Road • Hudson, WI 54016  
Tel: 715-386-9371 • Fax: 715-386-9376 • Email: [gea.pe.na@geagroup.com](mailto:gea.pe.na@geagroup.com)

Web: [www.niroinc.com](http://www.niroinc.com)