



# BIO-DIESEL DEMONSTRATOR

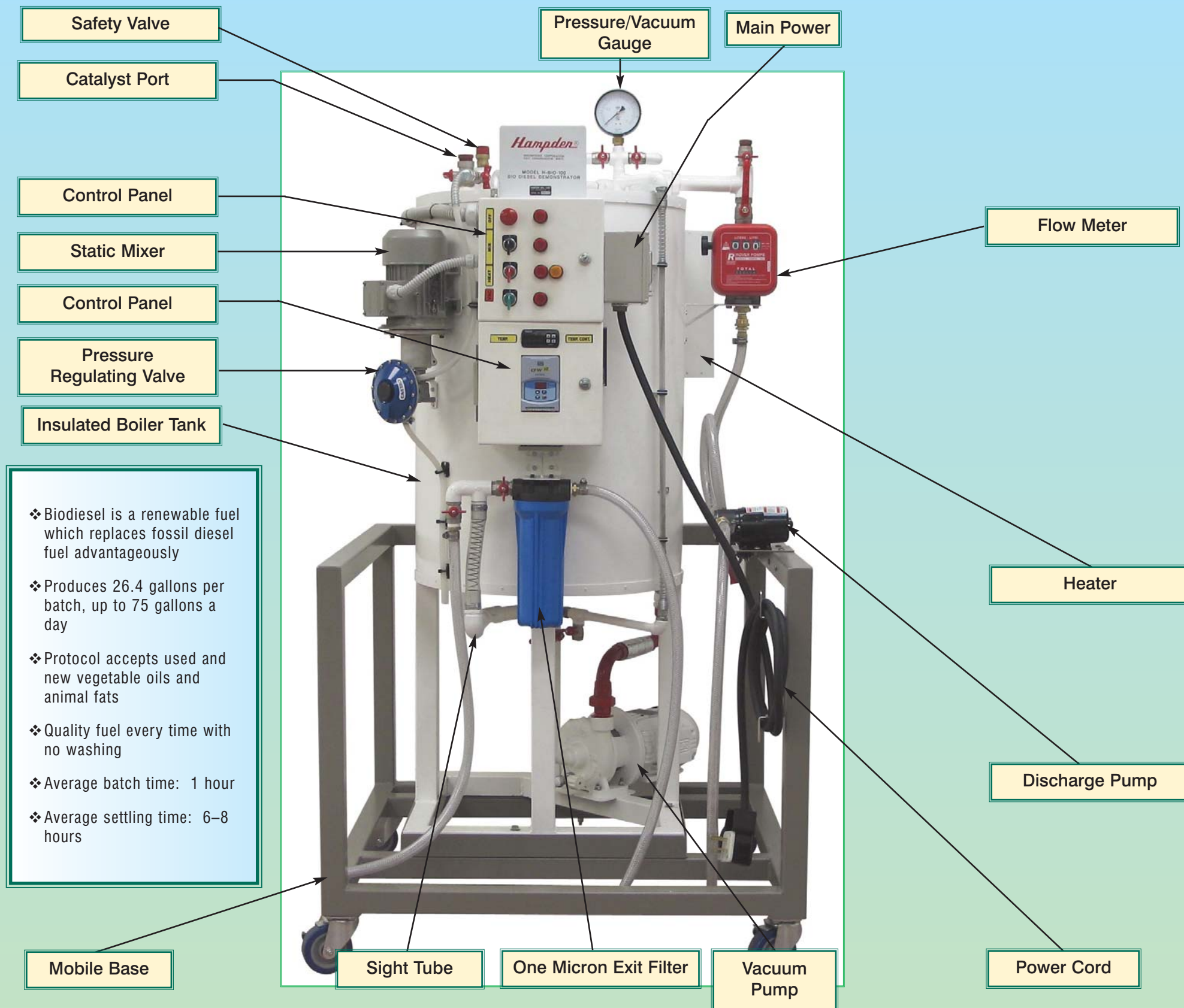


**Hampden**<sup>®</sup>  
ENGINEERING CORPORATION



LET HAMPDEN TAKE YOU INTO THE FUTURE

BIO-DIESEL DEMONSTRATOR



- ❖ Biodiesel is a renewable fuel which replaces fossil diesel fuel advantageously
- ❖ Produces 26.4 gallons per batch, up to 75 gallons a day
- ❖ Protocol accepts used and new vegetable oils and animal fats
- ❖ Quality fuel every time with no washing
- ❖ Average batch time: 1 hour
- ❖ Average settling time: 6–8 hours

**Purpose**  
 The Hampden **Model H-BIO-100** Bio Diesel Demonstrator is ideal for educational purposes, using the same protocol and with the same quality construction as the large scale units. The rugged design, capacity and ease of use make this unit ideal for teaching and experimentation. The **H-BIO-100** is capable of producing up to 26.5 gallons per batch with High Temperature Pressurized Process (HTP) which consistently delivers 98% or better conversion ratios. Proper use of the unit and HTP delivers ASTM and EN compliant Biodiesel, without the need to wash.

**Description**  
 The Hampden **Model H-BIO-100** Bio Diesel Demonstrator has been designed, and is offered, specifically to Universities and Teaching organizations. The **H-BIO-100** allows for experimentation with a large variety of variables like pressure, temperature, time to temperature, time, proportions, feedstock types, etc. Batches from 25 to 100 Liters can be made.

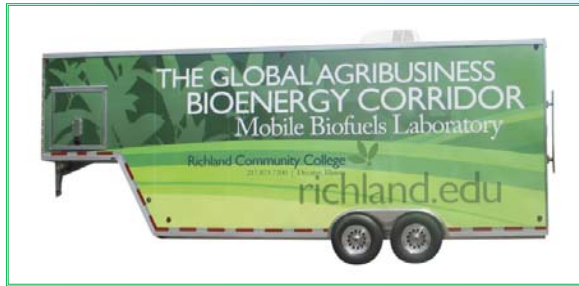
Thanks to its variable speed pump, students can experiment with different agitation speeds. Speeds can range from 10% to 200%. Includes a three phase shielded motor, which allows the **H-BIO-100** to work at higher pressure and temperature ranges. The **H-BIO-100** units include more heating elements per square centimeter than other units, this allows the units to reach higher temperatures, faster and experiment with heat transfer time.

**Features**

- 26.4 gallon batch capacity
- SAE 1010 low carbon steel construction
- TIG welded
- High performance proprietary static mixer
- Oil flow meter
- Ceramic heat transfer units
- Epoxy paint finish
- EC 4/94 (ATEX) compliant
- Independent methanol, NaOH and Oil input circuits
- 4" steel case pressure gauge
- Preset safety valve
- Dedicated full time venting
- Sight tube volume control
- Emergency Stop
- Digital Thermometer and Thermostat
- Dedicated Glycerol heating element
- 90° valves w/ bronze body, chromed sphere and nylon 6 seals
- Cast iron high volume centrifugal pump with carbon ceramic NB high temperature seal
- Control panel with individual circuit protection
- BioVac Excess Methanol, vacuum extraction unit
- 20 Micron Exit Filter
- Dedicated Glycerol and Biodiesel Valves
- All around thermal insulation
- Transparent drain line

**Standard Products...Designed to Meet Your Growing Needs!**

## BIO-DIESEL DEMONSTRATOR



Trailer comes complete with heating/air conditioning package and electrical power included in the system. Incorporated into the electrical system are (3) roof mounted solar panels. These panels can be used to keep the trailer battery fully charged and to operate the supplied DC dome lights. Other options are generator system to run heating/air conditioning and electrical power, recharge capability through direct plug of power source. Trailer includes a custom graphics and logos wrapping package applied to the exterior of trailer. The trailer also includes one curb side awning door that raises up to allow for open classroom environment as well as two curb side access doors and one large transportation door/ramp in back for removing and moving in equipment. The trailer is equipped with a water supply package and drain package that allows easy and convenient use of the training equipment.

Trailer comes complete with heating/air conditioning package and electrical power included in the system. Incorporated into the electrical system are (3) roof mounted solar panels. These panels can be used to keep the trailer battery fully charged and to operate the supplied DC dome lights. Other options are generator system to run heating/air conditioning and electrical power, recharge capability through direct plug of power source. Trailer includes a custom graphics and logos wrapping package applied to the exterior of trailer. The trailer also includes one curb side awning



The Hampden **Model H-ETS-1A** Ethanol Production Process System is designed to facilitate the instruction of students on the process required to produce ethanol for experimental purposes. Ethanol is a very promising fuel alternative to oil since sources are widely available and ethanol is clean-burning. The student will be able to observe and control the process of producing

ethanol from corn, sugar, sorghum, fruits or several other sources. When using this unit along with the **Model H-6150-TT** Liquid-to-Liquid Extraction Demonstrator option, it is possible to produce ethanol with high purity.



The Hampden **Model H-6150-TT** Table Top Liquid-To-Liquid Extraction Demonstrator option has been developed to permit

student study of the fundamentals of a small scale liquid-to-liquid extraction system. In addition to demonstrating the hydrodynamics of liquid-to-liquid extraction systems and interface control techniques, this unit can also be used to determine the mass transfer rates, heat transfer coefficients, extraction efficiency, and operating conditions.



Hampden is committed to providing industry-leading technology.

For the latest from Hampden, visit our home page at <http://www.hampden.com> or e-mail us at [sales@hampden.com](mailto:sales@hampden.com)

**Hampden**<sup>®</sup>  
ENGINEERING CORPORATION