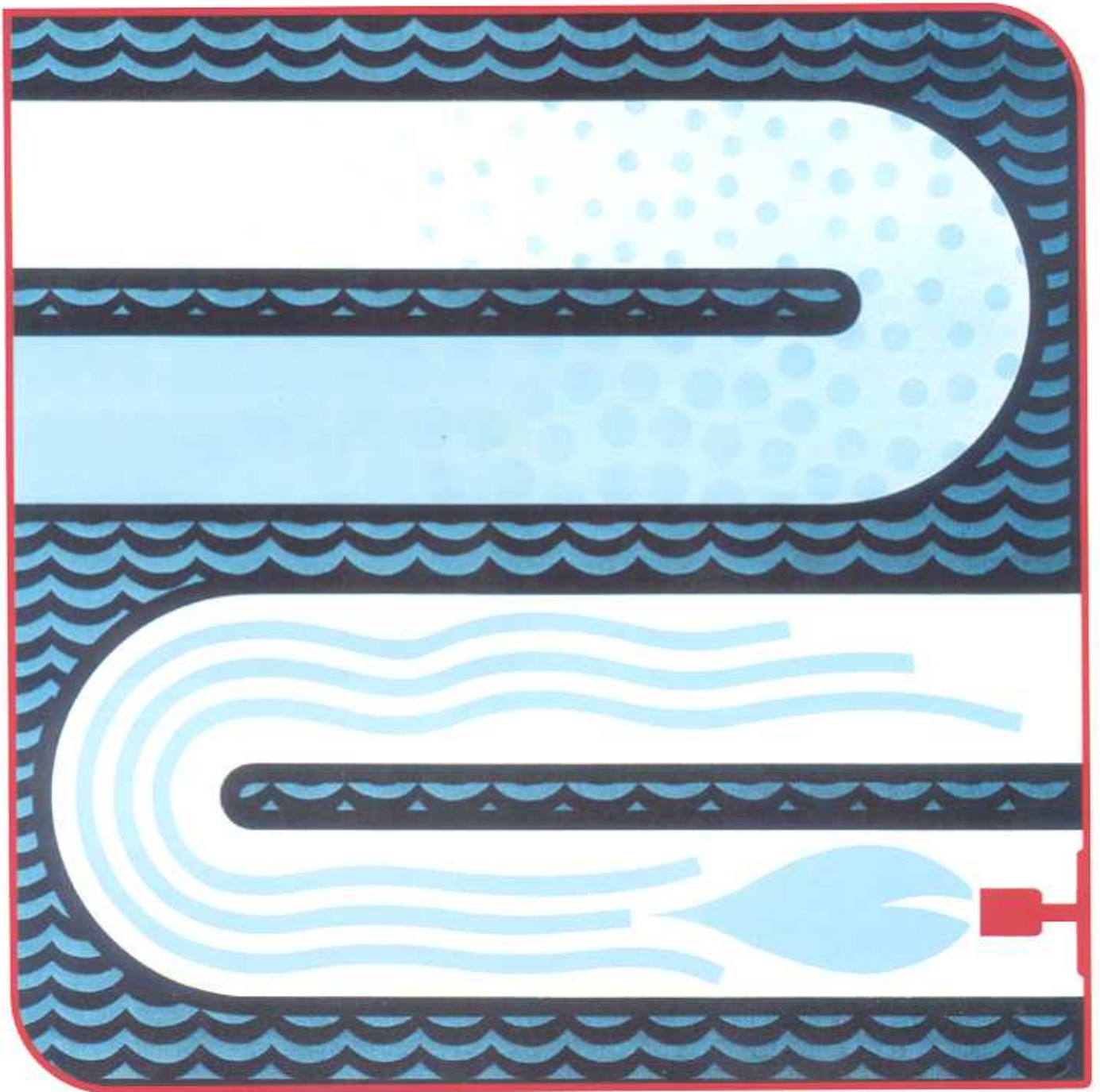


# Propane Vaporization



Safe, dependable, low cost  
propane vaporization systems.



# BS&B Indirect Water Bath Heaters.... successful vaporization of propane

BS&B indirect water bath heaters have a long record of successful performance. Many have been in service, providing dependable, economical propane and other types of liquefied petroleum gas (LPG) vaporization, for years. They provide the best auxiliary gas source for **peak shaving** and stand-by plants; for **BTU content balancing** of natural gas; for **vaporization of primary fuels** for municipalities and industries away from natural gas lines.

Feature-for-feature comparison of BS&B vaporizers with other types of vaporization equipment will show why they are the best types to buy in the overwhelming majority of cases.

BS&B propane vaporizers are built from a standard design based on BS&B's rugged oilfield heater which has done an outstanding job over the years under widely varying operating conditions. There's little or no maintenance. Controls are weatherproof for unattended operation with minimum operating problems, even in the worst weather.

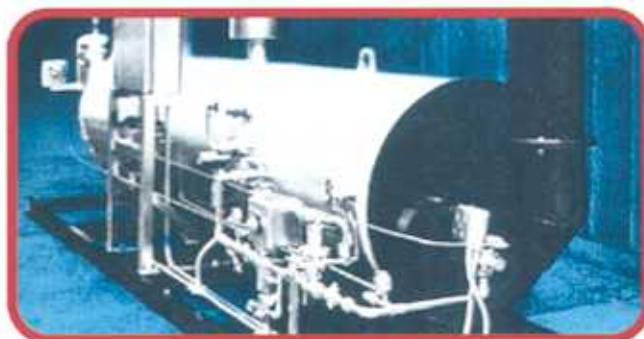
Code requirements are no problem with a BS&B vaporizer...the customer can obtain approval of firing controls easily from inspection authorities and insurance agents. Units equipped with proper firing controls and optional accessories meet Factory Insurance Association

(FIA), Factory Mutual (FM), National Board of Fire Underwriters (NBFU) and National Fire Protection Association (NFPA) code requirements. (However, state and local codes should also be checked and approval obtained.)

## Packaged units ...cut installation time and costs.

Standard factory assembled units for nominal heating capacities up to 3,000,000 BTU/HR are available skid mounted, piped and ready to put into operation.

Above 3,000,000 BTU/HR, units can be completely assembled and firing controls bench tested at the factory. The fuel control system is packed and shipped with a minimum of disassembly after fire testing.

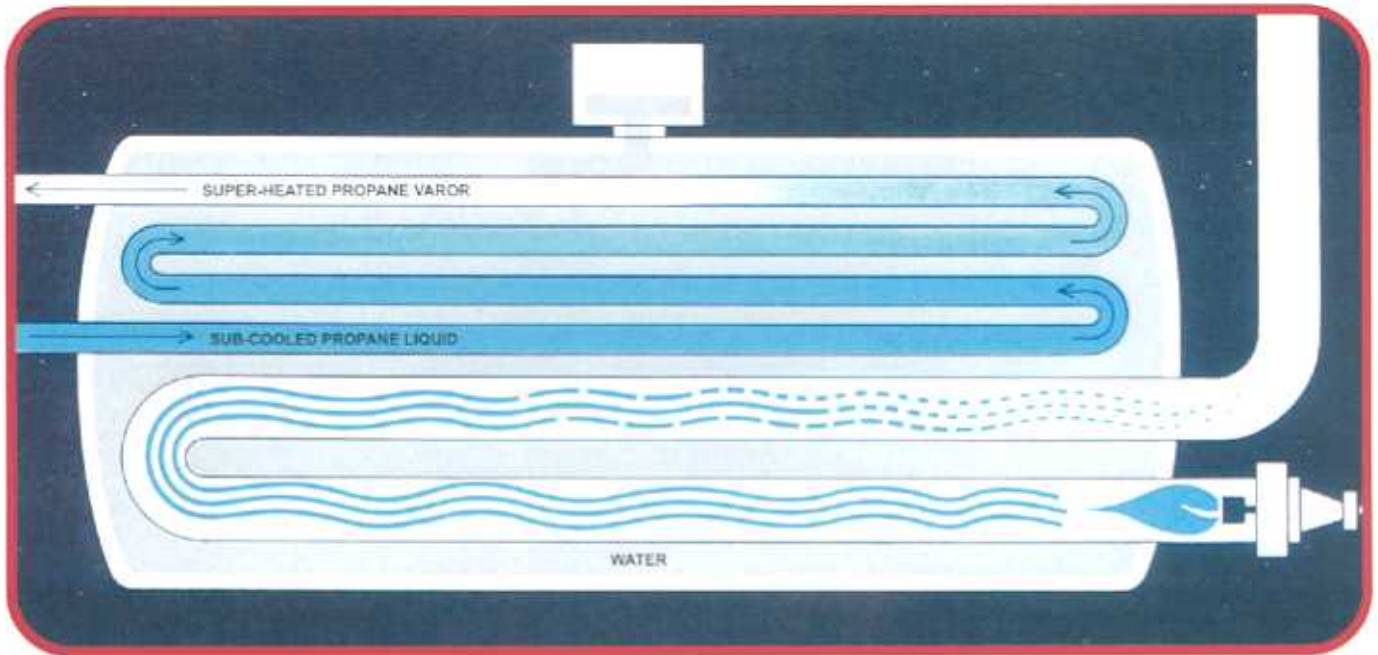


## THE BS&B VAPORIZER BRING YOU THESE BENEFITS:

- Propane and other LPG liquids are vaporized safely without an expensive high pressure shell or a special design for each application.
- Firebox has a thermal efficiency of over 70%-one of the highest on the market for this type of unit. Cuts fuel costs.
- Combustible fluids are heated in a flow coil completely isolated from the firebox. Safe.
- Firebox is **always immersed** in fresh water, reducing coking and burnout problems. Clean metal surface transfers firebox heat to water bath rapidly.
- Uniform heating of the water bath results in low tube wall temperature of the flow coil-promotes longer life.
- Wide range of flow coil sizes permits easy selection of the proper coil arrangement to satisfy heat transfer surface area and pressure drop requirements for each vaporizer.
- Flow coil design insures sweepout of all vapor by liquid as it vaporizes. Flow coil arrangement avoids low spots, prevents "percolation" if partial vaporization occurs.
- Entire flow coil is positioned in the hottest portion of the water bath-above the firebox.
- Water Saver (or Expansion Chamber) assures safe water level by minimizing water vapor loss. Through recovery, essentially no make-up water is required.

The expansion chamber allows water to expand at operating temperatures so that tubes are kept covered by water during summertime shutdown. This reduces atmospheric corrosion.

- Burner and pilot light assemblies are carefully matched with firebox capacity, providing safe, dependable and efficient operation-even under varying loads and adverse weather conditions.
- Temperature controls and other controls, parts, and accessories are carefully selected to provide dependable, trouble-free operation.
- Fuel gas preheat coil assures a dry fuel gas and prevents fuel line freezeup when large pressure reductions are required across the fuel gas regulator.
- Wide selection of accessories makes it possible to furnish units that will meet various state and local codes.
- Wide range of sizes available: from 90,000 BTU/hr. to 16,000,000 BTU/hr.
- Packaged units or partially assembled units are available to save time and cut field installation costs.
- Vaporizer coils are provided with sufficient heat transfer area to permit using anti-freeze in water bath solution when inlet and/or ambient temperatures are below freezing.



## OPERATION

Propane is liquefied under moderate pressure. Propane remains in a liquid state at atmospheric pressure if the temperature is below minus 44° F. Above this temperature it vaporizes rapidly. Successful vaporization of propane requires sufficient heat to: (1) saturate the liquid, (2) vaporize the liquid and (3) superheat vapors to assure that no liquid propane leaves the heater.

BS&B's indirect vaporizers burn fuel gas inside a horizontal firebox immersed in the lower portion of a

water bath. Heat transmitted through the firebox wall maintains the water bath at the desired temperature. Cold liquid propane passes through a flow coil immersed in the upper portion of the water bath and is warmed and vaporized by heat transmitted through the flow coil. Water bath is maintained at the proper temperature by automatic control of the fuel gas supply to the firebox.

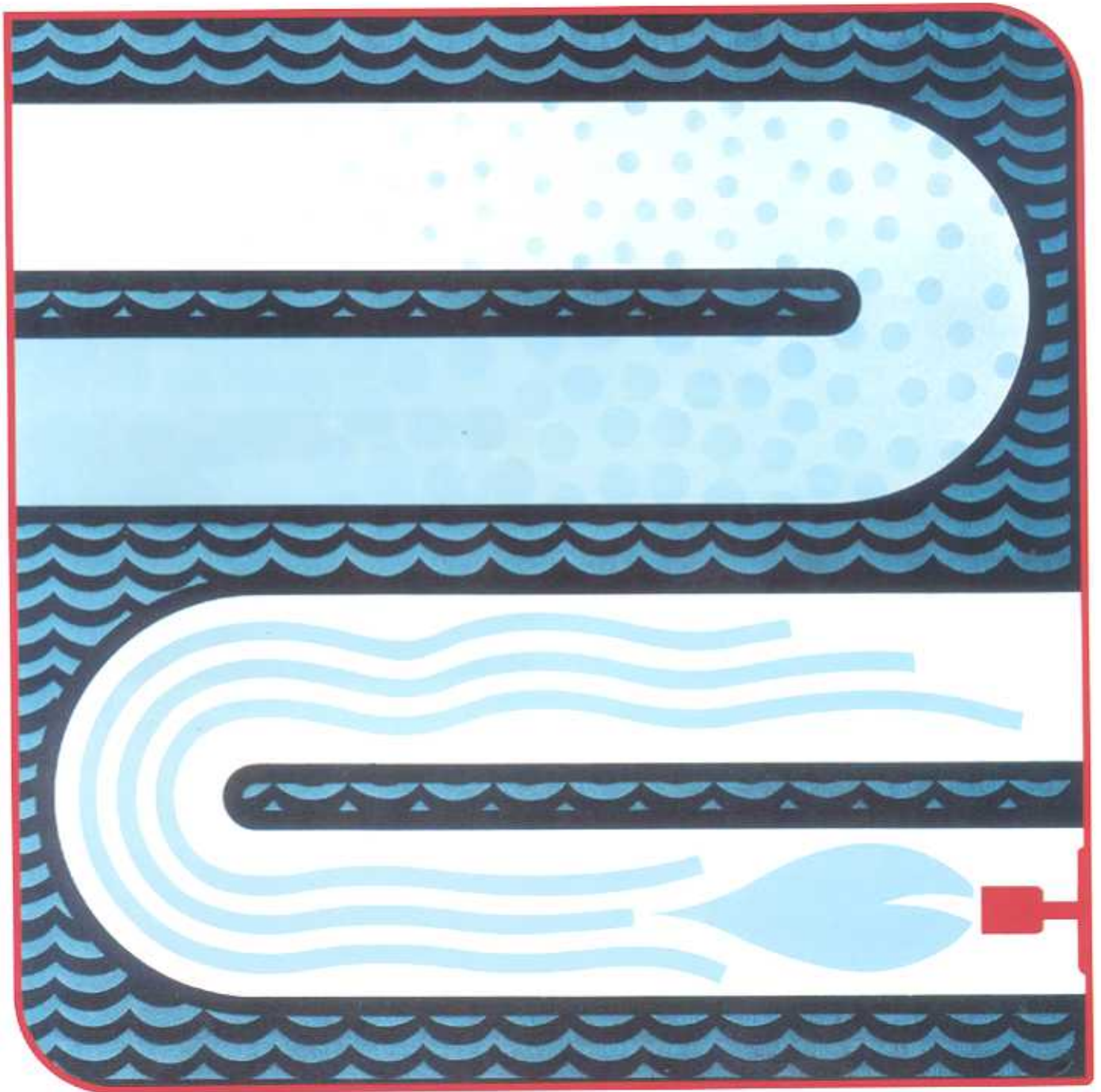
The same principles apply to vaporization of butane and other liquefied petroleum gases.

## SPECIFICATIONS - BS&B PACKAGED VAPORIZERS

Vaporizer Model No.	Nominal Capacity GPH Propane	Skid Size	Shipping Wt. - Lbs	Nominal Coil Area Sq. Ft	Coil Connection Less CFBO	Water Capacity Gal.
90 IH PV	108	2'10" x 7'	640	12	1" NPT	55
150 IH PV	180	3'10" x 7'	1,200	21	1½" NPT	97
250 IH PV	300	3'10" x 12'	2,200	46	2" NPT	189
500 IH PV	600	3'10" x 12'	2,400	69	2" NPT	145
750 IH PV	900	4'4" x 14'5"	3,900	103	3" 300# ASA	298
1000 IH PV	1200	4'10" x 16'5"	5,400	145	3" 300# ASA	481
1500 IH PV	1800	5'10" x 18'5"	7,200	168	3" 300# ASA	1094
2000 IH PV	2400	5'10" x 23'5"	11,800	283	4" 300# ASA	1327
2500 IH PV	3000	5'10" x 26'	13,500	322	4" 300# ASA	1587
3000 IH PV	3600	6'6" x 29'	15,500	364	4" 300# ASA	1956

Nominal capacities are based on a uniform flow of liquid propane at inlet temperature of minus 20°F (-20°F), an outlet temperature of 50°F, an inlet pressure of 55 psig and a pressure drop of 5psig or less. Large sizes shed upon application. Physical dimensions of propane vaporizer units are same as our indirect heater units. Reference brochure No. 3269-OIF-5M.

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