

Bryan “Flexible Water Tube”
Water-Pak™ Indirect
Water Heater Systems

350,000 to 8,000,000 BTUH
Atmospheric Gas Fired and Forced Draft Gas, Oil or Dual Fuel Fired
335 to 3,533 Gallons Storage Capacity



Model CLM-120-WT-FDG-844-AV-CM-IN

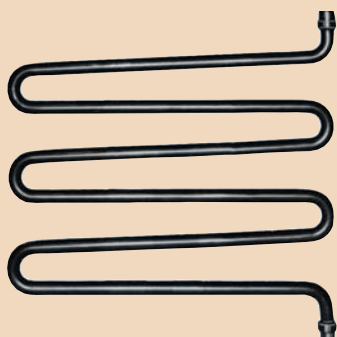
B™ **BRYAN BOILERS** 

Originators of the “Flexible Water Tube” design



Bryan Water-Pak™ brings packaged efficiency to large volume hot water needs

Efficient "Flexible Water Tube" Design



Bryan Indirect Water Heaters incorporate the Bryan bent water tube that provides rapid internal water circulation. The result is maximum heat transfer, and the flexible tubes eliminate the chance of thermal shock. All tubes are easily removable and replaceable without welding or rolling.



Bryan Heat Exchanger

The heat exchanger is the key to the Bryan Indirect Water Heater. It leads to all the advantages listed on this page, making the Bryan Indirect Water Heater a perfect choice in dozens of applications.

The heat exchanger is constructed of heavy copper tubing which transfers heat from the primary water to the water flowing through the exchanger. The heat exchanger is designed for two or four-pass flow with low pressure drop. It can easily handle the entire BTU output (or any desired portion) of the heater.

The Bryan Water-Pak™ Indirect Water Heating System is a proven method of providing large volumes of hot water, with intermittent draws, for a variety of applications. Circulation between the tank and heat exchanger maintains the required temperature in the tank. Our years of experience in this field have perfected the Bryan Indirect Water Heater.

Simplicity of Indirect Heating

The indirect heat exchanger method of heating water is extremely simple. The primary water in the heater is maintained at a constant temperature and recirculated only within the heating vessel. The heat exchanger, placed in the primary water, absorbs heat and transfers it to the water flowing through its copper tubes.

Efficiency in a Compact Unit

The Bryan Water-Pak is a completely packaged system comprised of the Indirect Water Heater, Storage Tank and Circulation Piping, all mounted on a structural steel skid. All components are factory wired and assembled, requiring field hookup only on the cold and hot service water connections, the electrical supply, fuel source, and the vent connection.

The Bryan Water-Pak utilizes the superior "Indirect" feature of the water heater, resulting in a high efficient and scale-free operation. The service water does not come in contact with the high temperature heating surfaces, consequently, there is little possibility of scale and corrosion. Thousands of Bryan Indirect Water Heaters have been installed during the past 40 years, most all of them still rendering efficient service.

The Bryan Water-Pak is engineered to provide a compact packaged unit for large volume water heating requirements. Available in many selections of Heater-Tank combinations, horizontal or vertical. Designed for long life, low maintenance and continued maximum efficiency performance.

Each component of the Bryan Water-Pak is easily replaceable. The entire unit need not be replaced, as is often required by other types of water heater equipment.

Storage tanks and water heaters comply with the recommendations of ASHRAE 90-75.



Forced Draft
Gas Fired CLM-Series



Atmospheric
Gas Fired F-Series

Bryan Water-Pak "Indirect Storage Water Heating" is scale-free, corrosion-free and trouble-free

This is the secret — Service hot water circulated continuously through the copper indirect heat exchanger, absorbing heat from warm Primary Water. Service hot water does not come in contact with hot flue gases; thus it remains below critical scaling and corrosion temperatures.

Heat transfer fluid (Primary Water) recirculated by thermal action up through heater tubes, past indirect heat exchanger and down.

Insulated PVC tank jacket (optional)

Hot water storage tank — 125 psi or 150 psi ASME Code.

Hot service water.

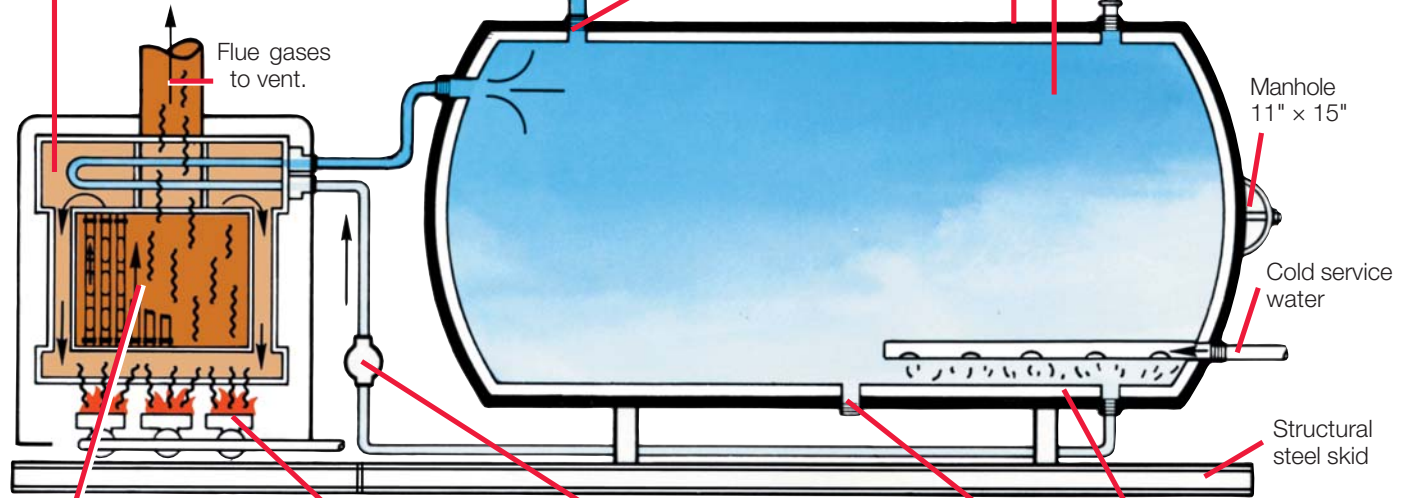
Non-ferrous water connections

Manhole 11" x 15"

Cold service water

Structural steel skid

Flue gases to vent.



High temperature combustion gases heat Primary Water (heater transfer fluid) only.

Burner — gas, oil or gas-oil combination.

Bronze circulation pump — operates continuously to reduce stratification in storage tank during standby.

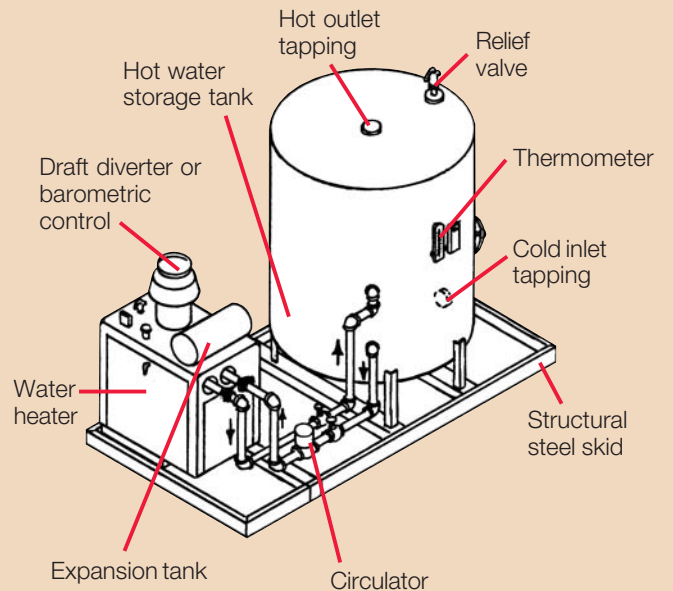
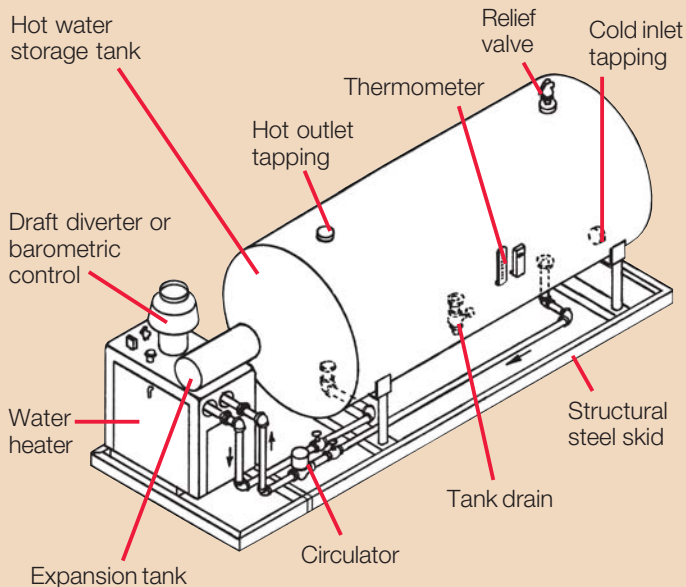
Drain

Internal tank lining for corrosion protection — phenolic-epoxy or cement.

Burner Flame
 Heat
 Primary Water
 Hot Service Water
 Cold Service Water

Horizontal Heater-Tank Setting AH

Vertical Heater-Tank Setting AV



Bryan Water-Pak™ Indirect Water Heater Systems

Water-Pak Selection

Water-Pak units are built to furnish a very wide selection of recovery rates, storage capacities and configurations. Both horizontal and vertical tanks are available to best fit into the space allocation. In addition to the combinations of "settings" shown below, other combinations, arrangements and sizes are possible. Fuel selection includes gas (atmospheric or forced draft), oil, gas-oil or electric (consult factory).

1. Select Heater Model based on "Heater Specifications" table below.
2. Select storage capacity from "Storage Tank Specifications" tables, horizontal or vertical tank depending on space considerations.
3. Choose appropriate "Setting" from "Heater, Tank Setting" diagrams on previous page.

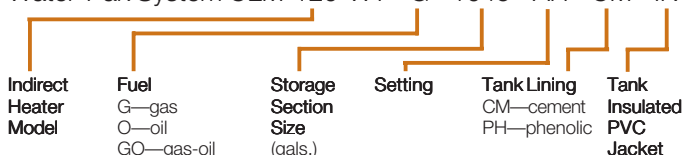
Selection Procedure Example

A requirement of 800 gph at 100° rise. Storage capacity 1000 gallons. Fuel, gas. Tank lining, cement.

1. From "Heater Specifications" table, select Model No. CLM-120-WT Gas, rated at 1,152 gph, 40° to 140° rise.
2. From the "Storage Tank Specifications" tables, suppose you select the 1045 gallon horizontal tank.
3. Then the setting shown in diagram "AH" (horizontal tank) would be appropriate.

Specify:

Water-Pak System CLM-120-WT - G - 1045 - AH - CM - IN



Indirect Heater Specifications

Heater Series	Model Number	Output BTU/HR	Heater Capacity			
			Gallons Per Hour*			
			80°-140°	60°-140°	40°-140°	40°-160°
DR SERIES (Forced Draft)	DR/F-350-WT	280,000	559	420	336	—
	DR/F-450-WT	360,000	720	540	432	—
F SERIES (Atmospheric)	DR/F-650-WT	520,000	1,039	780	624	—
	DR/F-850-WT	680,000	1,359	1,020	816	—
CLM SERIES (Forced Draft) & (Atmospheric)	CLM-120-WT	960,000	1,920	1,440	1,152	960
	CLM-150-WT	1,200,000	2,400	1,800	1,440	1,200
	CLM-180-WT	1,440,000	2,880	2,160	1,728	1,440
	CLM-210-WT	1,680,000	3,660	2,520	2,016	1,680
	CLM-240-WT	1,920,000	3,840	2,880	2,304	1,920
	CLM-270-WT	2,160,000	4,320	3,240	2,592	2,160
CLM-300-WT	2,400,000	4,800	3,600	2,880	2,400	
K SERIES (Atmospheric)	K-350-WT	2,800,000	5,600	4,200	3,360	2,800
	K-400-WT	3,200,000	6,400	4,800	3,840	3,200
	K-450-WT	3,600,000	7,200	5,400	4,320	3,600
	K-500-WT †	4,000,000	8,000	6,000	4,800	4,000
	K-550-WT †	4,400,000	8,800	6,600	5,280	4,400
	K-600-WT †	4,800,000	9,600	7,200	5,760	4,800
K-650-WT †	5,200,000	10,400	7,800	6,240	5,200	
AB SERIES (Forced Draft)	AB-90-WT	720,000	1,440	1,080	864	720
	AB-120-WT	960,000	1,920	1,440	1,152	960
	AB-150-WT	1,200,000	2,400	1,800	1,440	1,200
	AB-200-WT	1,680,000	3,360	2,520	2,016	1,680
	AB-250-WT	2,000,000	4,000	3,000	2,400	1,999
	AB-300-WT	2,400,000	4,800	3,600	2,880	2,400
RV SERIES (Forced Draft)	RV-350-WT	2,800,000	5,600	4,200	3,360	2,800
	RV-400-WT	3,200,000	6,400	4,800	3,840	3,200
	RV-450-WT	3,600,000	7,200	5,400	4,320	3,600
	RV-500-WT †	4,000,000	8,000	6,000	4,800	4,000
	RV-550-WT †	4,400,000	8,800	6,600	4,280	4,400
	RV-600-WT †	4,800,000	9,600	7,200	5,760	4,800
	RV-700-WT †	5,600,000	11,200	8,400	6,720	5,600
	RV-800-WT †	6,400,000	12,800	9,600	7,680	6,400

† These units are equipped with two heat exchangers as standard and require a copper header to be field supplied.

* Note 1: Contact factory for ratings at other conditions.

Note 2: Heater is not intended to provide the temperature increases shown above instantly, but will raise the temperature of the gallons listed to final storage temperature within one hour.

Note 3: Select adequate storage tank capacity to handle peak demand. Keep in mind that, typically, only 75% of tank capacity is usable storage.

Storage Tank Specifications

Tank Capacity gallons	Tank Dia x Length in (cm)	Approximate Weight lbs (Kg)
Horizontal Tanks		
H-387	36x96 (91.4x243.8)	2,000 (907)
H-520	42x96 (106.7x243.8)	2,200 (998)
H-802	42x144 (106.7x365.8)	3,000 (1,361)
H-1045	48x144 (121.9x365.8)	3,800 (1,724)
H-1546	54x168 (137.2x426.7)	5,600 (2,540)
H-2188	60x192 (152.4x487.7)	6,900 (3,130)
H-2699	72x168 (182.9x426.7)	8,100 (3,674)
H-3533	72x216 (182.9x548.6)	10,100 (4,581)
Vertical Tanks		
V-335	36x84 (91.40x213.4)	1,700 (771)
V-520	42x96 (106.7x243.8)	2,200 (998)
V-665	48x96 (121.9x243.8)	2,700 (1,225)
V-844	54x96 (137.2x243.8)	3,100 (1,406)
V-1030	60x96 (152.4x243.8)	4,000 (1,814)
V-1447	72x96 (182.9x243.8)	5,300 (2,404)
V-1922	84x96 (213.4x243.8)	7,000 (3,175)

Specifications subject to change without notice.
 Contact factory to consult on other boiler options.



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