

Eco-Friendly LPG Vaporization by Efficient Use of Atmospheric Heat



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Spread of Vaporizers

LPG Supply from
Cylinders



Dew Condensation・Frosting

LPG Supply from Bulk Tank



Dew Condensation・
Frosting



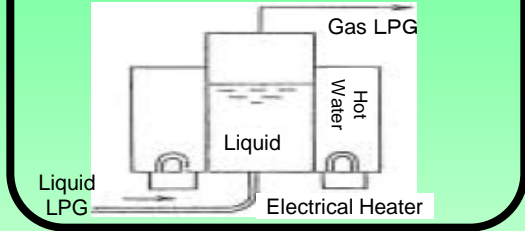
Installing a Vaporizer

Securing Vaporization Ability

Types of Vaporizers

**Electric
Hot Bath Type**

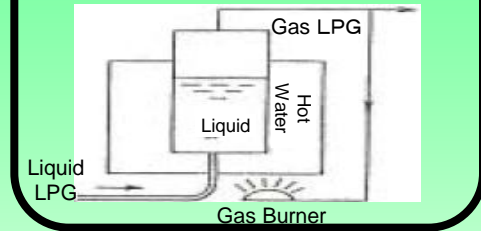
Use Electrical Heater



A large quantity of electricity is consumed.
Gas supply is stopped on power cut.

**Gas
Hot Bath Type**

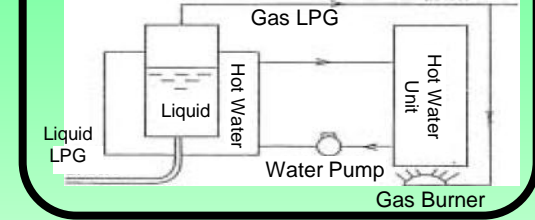
Use Gas Burner



A large quantity of gas is consumed.

**Hot Water
Circulating Type**

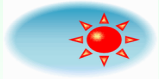
Use Hot Water Unit



Electricity and gas are consumed.
Gas supply is stopped on power cut.

**Air Heating
Type**

Use Atmospheric Heat



Eco-Friendly

Energy Savings

No Fossil Energy (Electricity, Gas) is need

Semi-Permanent Lifetime

Recyclable

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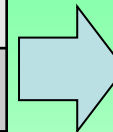
Comparison with Electrical Vaporizer

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Electrical Hot Bath Type Vaporizer Annual Electricity Cost of a Vaporizer with 200V, 3-Phase ※Amount of electrical consumption is in the parentheses.			
Operation Hours	100hours/month	150hours/month	200hours/month
Capacity50kg/h =7kw	JPY164,398 (3,912kWh)	JPY194,775 (5,868kWh)	JPY225,151 (7,824kWh)
Capacity100kg/h =14kw	JPY328,783 (7,824kWh)	JPY389,351 (11,724kWh)	JPY450,104 (15,636kWh)
Capacity200kg/h =28kw	JPY657,368 (15,636kWh)	JPY778,689 (23,448kWh)	JPY900,009 (31,260kWh)

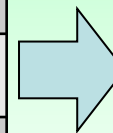
**Air Heating
Type Vaporizer**

**“0” Running
Cost**

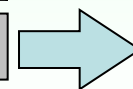


Electrical Hot Bath Type Vaporizer Annual Amount of CO ₂ Emission			
Operation Hours	100hours/month	150hours/month	200hours/month
Capacity50kg/h =7kw	2344 kg (1194 m ³)	3515 kg (1790 m ³)	4687 kg (2386 m ³)
Capacity100kg/h =14kw	4687 kg (2386 m ³)	7023 kg (3575 m ³)	9366 kg (4768 m ³)
Capacity200kg/h =28kw	9366 kg (4768 m ³)	14046 kg (7150 m ³)	18725 kg (9532 m ³)

**“0” CO₂
Emission**

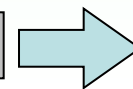


Gas Supply is Stopped In Power Cut



**Stable Supply in
Power Cut**

10 Years Lifetime·Water Control Required



**Semi-Permanent
Lifetime Body**

Material for the Heat Exchange Section



Superior Thermal Conductivity

Superior Corrosion Resistance

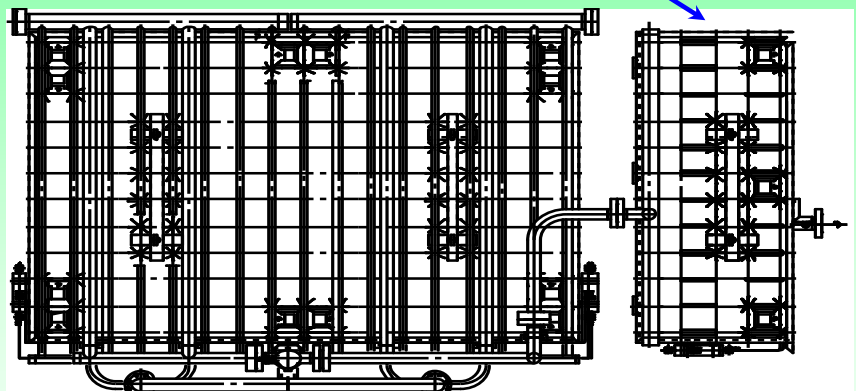
Recyclable

Pipes with Specially Shaped Fins
Made of Aluminum Alloy (Extruded)

Basic Structure of the Vaporizer

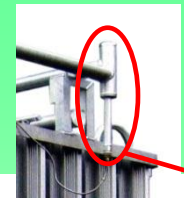
Liquid Vaporization Section

Superheat Section

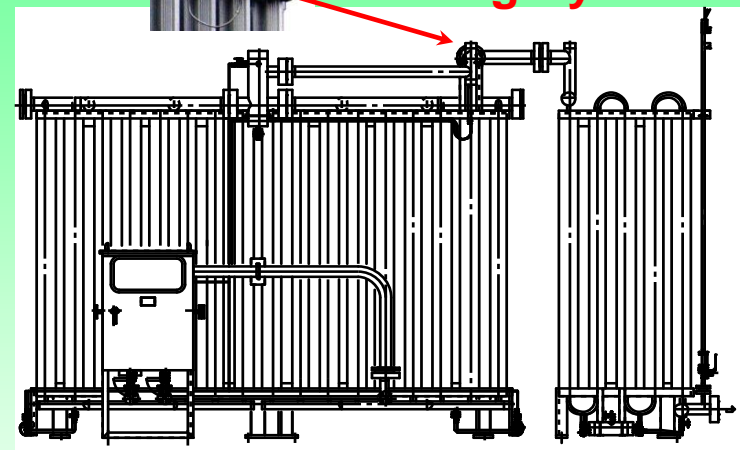


Control Box

Liquid Pressure Regulator with Shut off Function



Temperature Sensing Cylinder



Vaporization Method

Control Box

Tank

Liquid LPG
Atmospheric
Temperature

Liquid & Gas LPG
-25°C

To Heat Exchange
Section

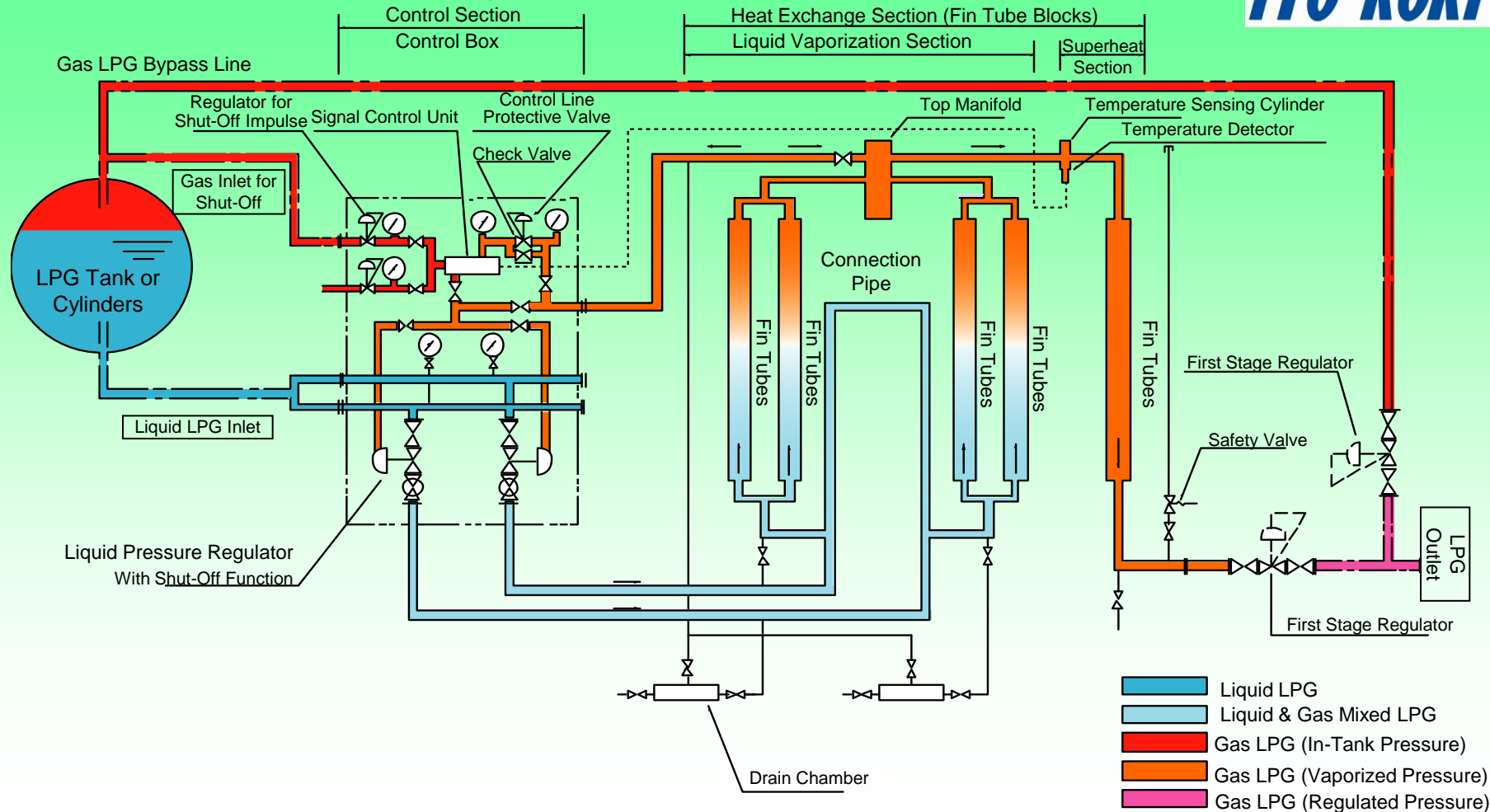
Liquid Pressure Regulator

- Depressurize to 0.1MPa(1bar)
- Temperature of Liquid LPG decreases sharply.
- Liquid LPG turn to liquid & gas mixed LPG.
- Securing temperature difference from atmospheric temperature.
- Liquid LPG is vaporized instantly

Downsizing of the Vaporizer Unit

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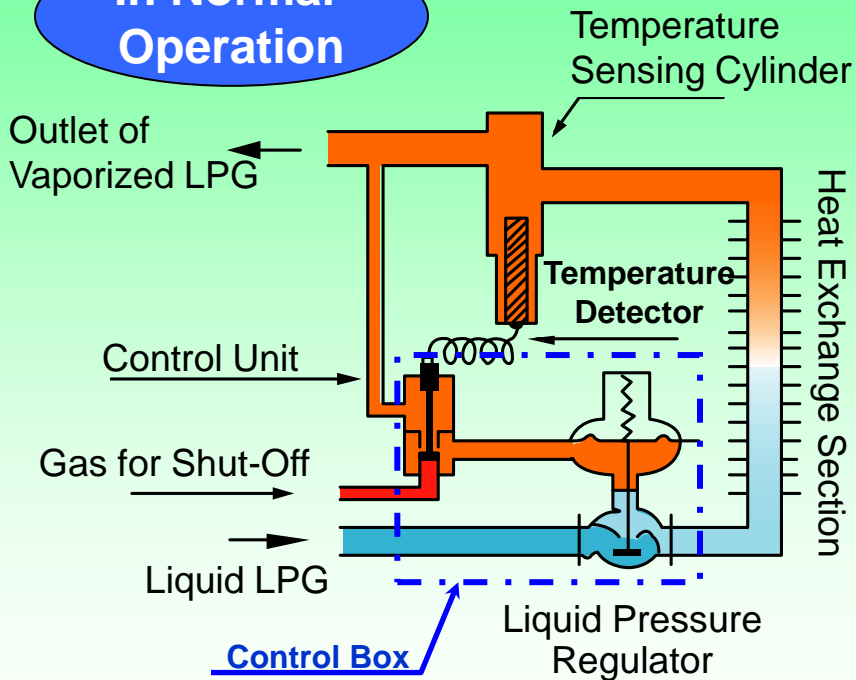
Structure of Heat Exchange Section



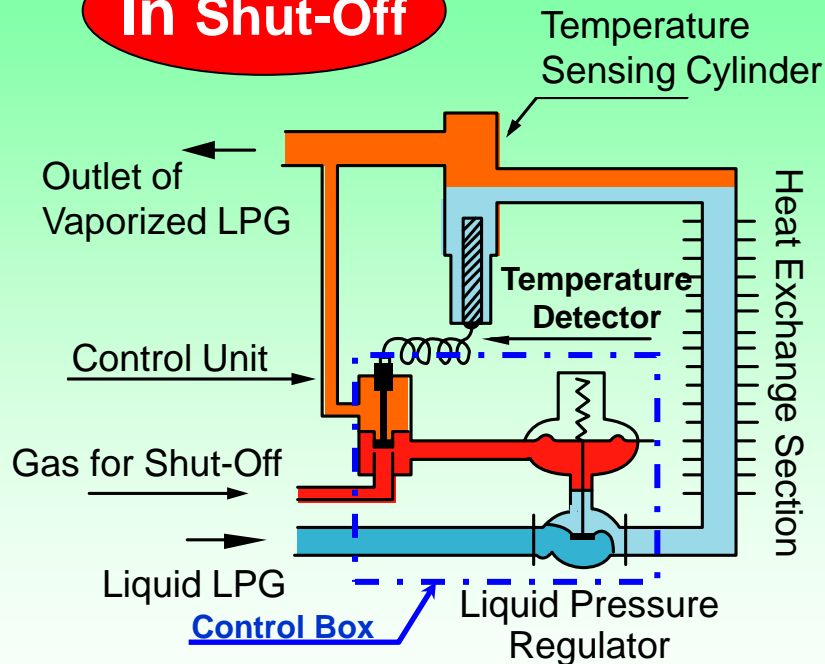
Safety System

1) Liquid Carryover Protection System

In Normal Operation

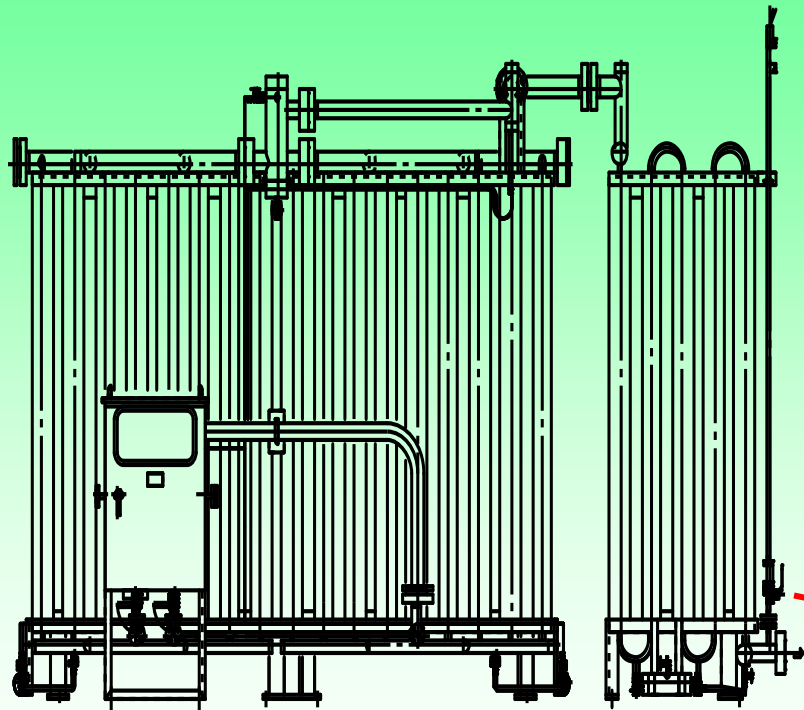


In Shut-Off



Automatically resume the gas supply after temperature of the temperature detector returns to the normal range

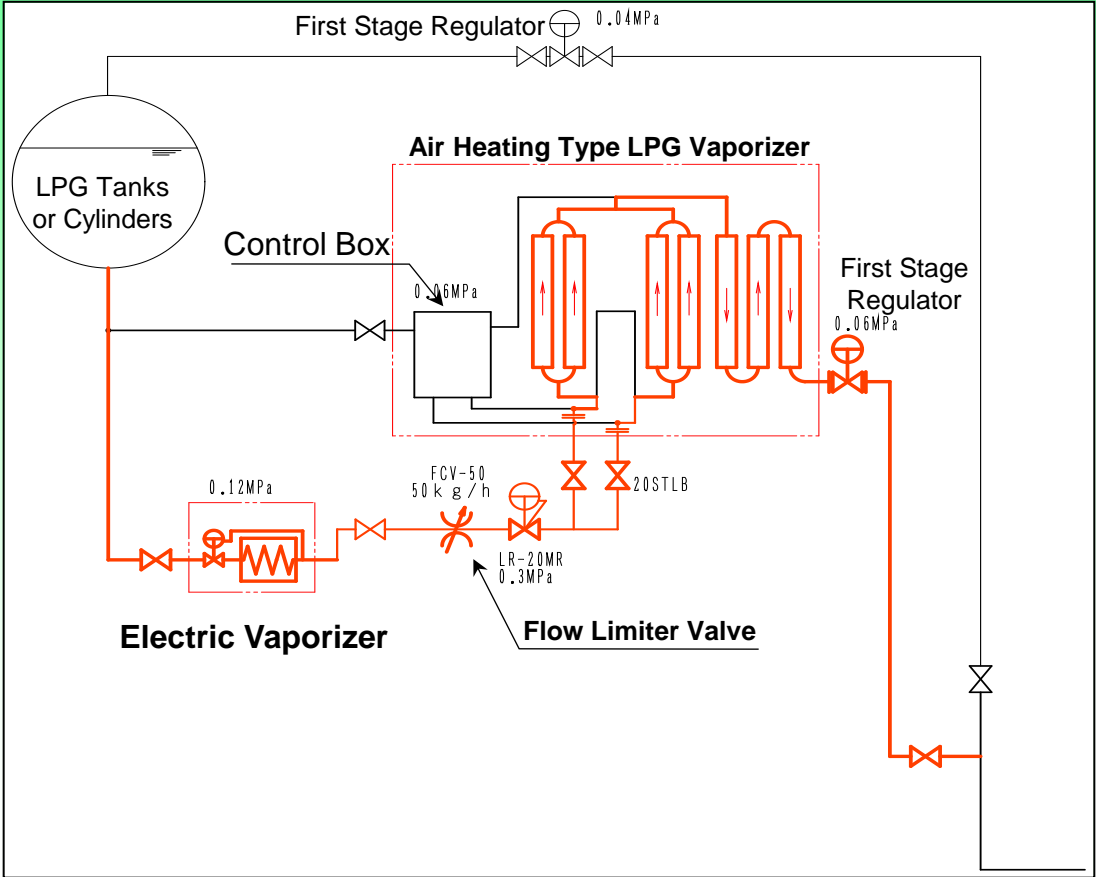
2) Safety Valve



Relief Tube for
Safety Valve

Safety Valve

Hot Gas Circulation System to Expand the Range of Use in Cold Regions



Before Applying Hot Gas System



After Applying Hot Gas System



Application of LPG, As a Decentralized Distribution Source of Energy with “Zero” Environmental Burden by Air Heating Type Vaporizer

Lower Total Cost with Considering Running Cost

Back Up System in Districts where
the Electricity Condition Is Not Stable

“Zero” CO2 Emission・
Global Environment Conservation

Pictures of the Installation Sites



Installation for GHP & Restaurant Kitchen



Installation for Boilers in a Factory

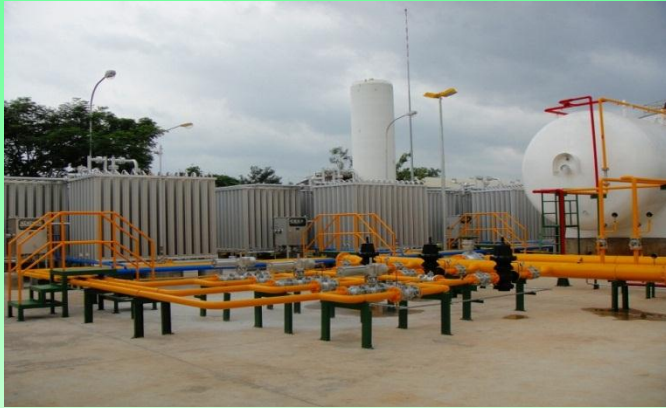


Installation for GHP in a Factory



Installation for Community Gas Supply

Pictures of the Installation Sites



A Factory in Viet Nam



A Factory in Viet Nam



A Factory in Thailand
(Long Fin Tube Type)

Thank You Very Much For Your Attention.

Innovation
Technology
Origination

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