



VACUUMIZER

MODEL VM

LOW TEMPERATURE VACUUM STEAM HEATING AND EVAPORATIVE COOLING SYSTEM

Benefits

VM-H VACUUM STEAM HEATING SYSTEM.

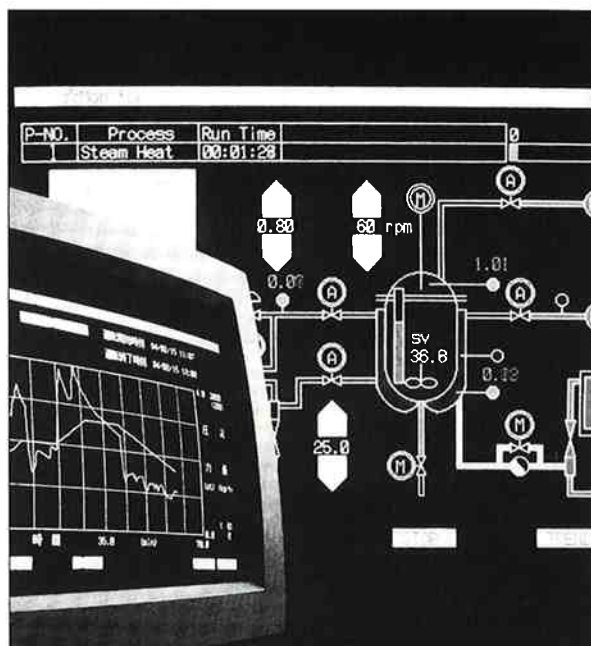
- Controls vacuum steam temperature below 212 °F to within ±1.8 °F of the set value.
- Heats at an even temperature not currently possible with hot water heating systems.
- Maximizes yield by preventing product burning or discoloration in batch processes.
- Low operational cost eliminates need for treatment and maintenance of separate hot water system.
- Compact, easily installed closed-system design saves valuable space and time.
- **Application:** Reactor Process Heating.

VM-C VACUUM EVAPORATIVE COOLING SYSTEM.

- System uses an atomized water spray which vaporizes to provide the most efficient cooling.
- High heat transfer film coefficient reduces product cooling time by approximately 25%.
- **Application:** Exothermic Reaction Processes and other applications that require rapid cooling.

VM-H/C COMBINED VACUUM STEAM HEATING AND EVAPORATIVE COOLING SYSTEM.

- Combination system provides accurate low temperature heating control and evaporative water cooling capability.
- Automatic switching between heating and cooling cycles to maintain precise control during process changes.
- **Application:** Combined Heating and Cooling for Plastic Forming Machinery and similar applications.



Vacuum Steam Heating System

• System Specifications

Supply steam temperature range	104 – 230 °F
Stability of supply steam temperature	Set temperature ±1.8 °F (if supply steam temperature is above 140 °F) Set temperature ±3.6 °F (if supply steam temperature is above 104 °F)

• System Structure

Pressure reducing valve	COSR-16 1/2" – 4"
Vacuum pressure reducing valve	VCOSR 1" – 2" CV16 control valve 1/2" – 2"
Desuperheater unit	Needle valve 1/2" DUE type Separator DC3S 1" – 6"
Vacuum pump	CPV
Control box	Indoor wall-hung type, non-explosionproof

• Supply Steam Capacity (lb/h)

TEMP. (°F)	SIZE* (in)					
	1	1 1/2	2	3	4	6
110	25	123	300	468	657	1563
120	27	125	332	500	729	1750
130	30	138	367	575	800	1900
140	38	163	417	700	948	2260
150	50	188	470	800	1163	2660
160	64	244	565	955	1425	3387
170	84	300	728	1250	1750	4150
180	123	432	930	1625	2300	5440
190	175	553	1313	2060	2840	6700
200	244	800	1638	2760	3871	9000
210	365	1263	2360	3871	5400	12625
220	550	1875	3333	5400	7500	17625
230	970	3355	5100	8000	12250	25829

* Vacuum pressure reducing valve size. Consult TLV for sizes 3" – 6".

Vacuum Evaporative Cooling System

● System Specifications

Cooling temperature range	Room temp. -200 °F (industrial water); 40 °F – Room temp. (chiller water); 0 °F – Room temp. (brine)
Heat transfer coefficient	above 900 BTU/ft ² · h · °F

* Heat transfer coefficient may be less than 900 BTU/ft² · h · °F if cooling is lower than -23 °F (brine)

● System Structure

Cooling Water Feeding System	Individual system design for the equipment is required, as the Vacuum Evaporative Cooling System creates a very thin uniform film on the heat transfer surface of it. Please contact TLV.
Control/Software	The Vacuum Evaporative Cooling System used with the Steam Heating System requires sophisticated control TLV offers the control system and engineering accordingly. Please contact TLV.
Vacuum Pump	Model: ● CPV-2.2 S/E ● CPV-3.7 S/E ● CPV-5.5 S/E Water ejector type ● CPV-11 S/E Special water ejector type

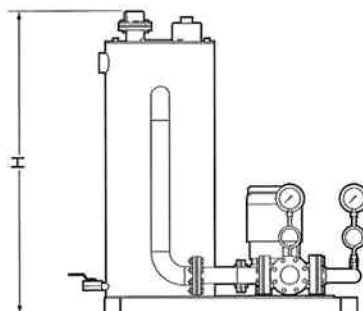
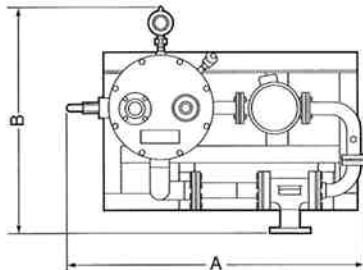
Vacuum Pump

● Vacuum Pump Specifications

Model*	CPV-2.2 S/E	CPV-3.7 S/E	CPV-5.5 S/E	CPV-11 S/E
Principle	Water ejector type			Special water ejector type
Motor*	2.2 kW S/E	3.7 kW S/E	5.5 kW S/E	11 kW S/E
Fluid	Gas, Liquid			Gas
Condensate Load	max. 2200 lb/h	max. 4400 lb/h	max. 6600 lb/h	—
Speed of Exhaust	0.5 gal/sec	1 gal/sec	2.5 gal/sec	8 gal/sec
Attainable Pressure	Saturation pressure at motive water temperature			
Connection Size	1½" ANSI150	3" ANSI150		4" ANSI150
Control	Automatic feed system with minimum level of water at start-up, automatic control of water temperature			

* S=Standard (non explosion proof); E=Explosion proof

● Dimensions



(in)

A	B	H	Weight (lb)
40 ⁹ / ₁₆	22 ⁷ / ₁₆	39	210
55 ¹ / ₈	43 ⁷ / ₁₆	56	580
55 ¹ / ₈	43 ⁷ / ₁₆	56	640
89	43 ⁷ / ₁₆	82 ⁵ / ₁₆	1280

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Manufacturer
TLV CO., LTD.
 Kakogawa, Japan
 is approved by LRQA Ltd. to ISO 9001/14001

ISO 9001/ISO 14001

