



BVL Power Pack
Service & Specification Manual
Manufactured by BVL Controls Ltd



BVL POWER PACK

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AIR COOLED

ECO-025	1/4 HP	R-134a	120 VAC
ECO-033	1/3 HP	R-134a	120 VAC
BVL-056	1/2 HP	R-134a	120 VAC
CMC-030	1/3 HP	R-134a	120 VAC
CMV-030	1/3 HP	R-134a	120 VAC
CWA-3	1/3 HP	R-404a	120 VAC
CWA-2	1/2 HP	R-404a	120 VAC
CWA-34	3/4 HP	R-134a	208/230 VAC
CWA-100	1 HP	R-404a	208/230 VAC
CWA-175	1.75 HP	R-404a	208/230 VAC

WATER COOLED

CWW-2	1/2 HP	R-404a	120 VAC
CWW-34	3/4 HP	R-404a	208/230 VAC

DESCRIPTION

COOLING DISTANCE (from cooler to faucet)

ECO-025	UP TO 25' of cooling line or ice tower
ECO-033	UP TO 60' of cooling line
BVL-056	Depends on pump used
CMC-030	UP TO 90' of cooling line
CMV-030 AVAILABLE SOON	UP TO 100' of cooling line
CWA-3	UP TO 125' of cooling line
CWA-2 / (CWW-2)	UP TO 250' of cooling line
CWA-34 / (CWW-34)	UP TO 350' of cooling line
CWA-100	UP TO 600' of cooling line (with 4 pumps)
CWA-175	UP TO 850' of cooling line (with 4 pumps)



DESCRIPTION

	CWA-3	CWA-2	CWW-2	CWA-34	CWW-34
Voltage AC	120	120	120	208/230	208/230
Circuit Breaker	20 A, if 2 nd pump + 15 A	15 A + 1 pump 15 A or 2 pumps 20 A	15 A + 1 pump 15 A or 2 pumps 20 A	15 A + 1 pump 15 A or 2 pumps 20 A or 3 pumps 20 A + 15 A	15 A + 1 pump 15 A or 2 pumps 20 A or 3 pumps 20 A + 15 A
Plug (NEMA)	2 x 5-15P *	2 x 5-15P *	2 x 5-15P *	1 x 6-15P 1 x 5-15P *	1 x 6-15P 1 x 5-15P *
Running	8.1 A	10.5 A	9.2 A	6.5 A	5.83 A
BTU	3120	4610	5800	5420	6700
Refrigerant	R-134a	R-404a	R-404a	R-134a	R-404a
Charge	18 oz.	19 oz.	18 oz.	16 oz.	21 oz.
Tank Capacity	12 gal.	12 gal.	12 gal.	12 gal.	12 gal.
Foam insulation	1"	1"	1"	1"	1"
Weight	106 lb	113 lb	113 lb	134 lb	134 lb
Pressure approximate	18 low 150 high	55 low 255 high	55 low 265 high	18 low 150 high	55 low 265 high
Pump (Gravity Fed)	80 GPH (Gear)	80 GPH (Gear)	80 GPH (Gear)	80 GPH (Gear)	80 GPH (Gear)
Dimensions (inches)**	H: 29.0 W: 26.5 D: 17.0	H: 29.0 W: 26.5 D: 17.0	H: 29.0 W: 26.5 D: 17.0	H: 29.0 W: 26.5 D: 17.0	H: 29.0 W: 26.5 D: 17.0

* 1 extra plug 5-15P per additional pump. **Dimensions include pump and motor.



	ECO-025	ECO-033	BVL-056	CMC-030	CMV-030
Voltage AC	120	120	120	120	120
Circuit Breaker	15 A	15 A	15 A	20 A	20 A
Plug (NEMA)	1 x 5-15P	1 x 5-15P	1 x 5-15P	2 x 5-15P	2 x 5-15P
Running		5.82 A	8.5 A	5.82 A	5.82 A
BTU	1875	2300	4140	2300	2300
Refrigerant	R-134a	R-134a	R-134a	R-134a	R-134a
Charge	13 oz.	12 oz.	15 oz.	10 oz.	10 oz.
Tank Capacity	3 gal.	3 gal.	8 gal.	3 gal.	8 gal.
Foam insulation	0.5''	1''	0,5''	0,5''	0.5''
Weight	60 lb	65 lb	95lb	97 lb	92 lb
Pressure approximate	18 low 150 high	18 low 150 high	18 low 150 high	18 low 150 high	18 low 150 high
Pump (Gravity Fed)	69 GPH (Vertical)	69 GPH (Vertical)	None	50 GPH (Pressure)	90 GPH (Vertical)
Dimensions (inches)**	H: 11.0 W: 19.0 D: 16.5	H: 15.5 W: 20.0 D: 20.0	H: 15.0 W: 30.0 D: 16.25	H: 13.5 W: 27.5 D: 16.25	H: 29.15 W: 16.4 D: 16.4

***Dimensions include pump and motor.*



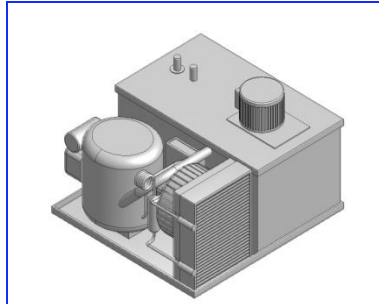
	CWA-100 2 pumps	CWA-100 3 pumps	CWA-100 4 pumps	CWA-175 2 pumps	CWA-175 3 pumps	CWA-175 4 pumps
Voltage AC	208/230	208/230	208/230	208/230	208/230	208/230
Circuit Breaker	20 A	20 A + 20 A	20 A + 20 A	20 A	20 A + 20 A	20 A + 20 A
Plug (NEMA)	1 x 6-20P 2 x 5-15P	1 x 6-20P 3 x 5-15P	1 x 6-20P 4 x 5-15P	1 x 6-20P 2 x 5-15P	1 x 6-20P 3 x 5-15P	1 x 6-20P 4 x 5-15P
Running	9.3 A	9.3 A	9.3 A	12.6 A	12.6 A	12.6 A
BTU	8,430	8,430	8,430	12,100	12,100	12,100
Refrigerant	R-404a	R-404a	R-404a	R-404a	R-404a	R-404a
Charge (see label on unit)	5 lb	5 lb	5 lb	6 lb	6 lb	6 lb
Tank Capacity	28 gal.	28 gal.	28 gal.	28 gal.	28 gal.	28 gal.
Foam insulation	1"	1"	1"	1"	1"	1"
Weight	257 lb	277 lb	297 lb	275 lb	295 lb	315 lb
Pressure approximate	55 low 255 high	55 low 255 high	55 low 255 high	55 low 255 high	55 low 255 high	55 low 255 high
Pump (Gravity Fed)	140 GPH (pressure) ½ hp motor	140 GPH (pressure) ½ hp motor	140 GPH (pressure) ½ hp motor	140 GPH (pressure) ½ hp motor	140 GPH (pressure) ½ hp motor	140 GPH (pressure) ½ hp motor
Dimensions (inches)**	H: 34.0 W: 32.5 D: 27.5	H: 34.0 W: 38.5 D: 27.5	H: 34.0 W: 38.5 D: 27.5	H: 34.0 W: 32.5 D: 27.5	H: 34.0 W: 38.5 D: 27.5	H: 34.0 W: 38.5 D: 27.5

****Dimensions include pump and motor.**

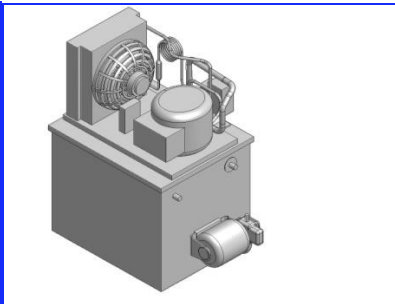


BVL CONTROLS

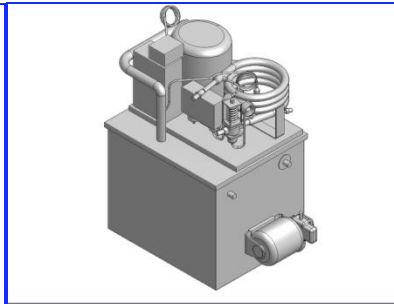
DRAWINGS



ECO-033



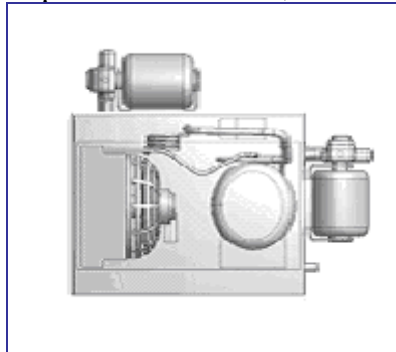
CWA



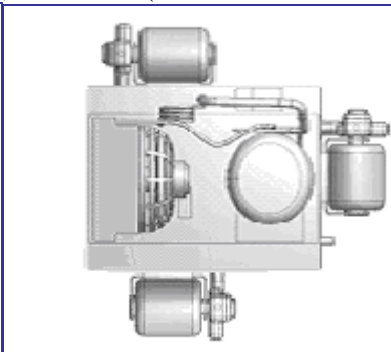
CWW

Double/Triple Motor Bath Option, Used With CWA or CWW

Top view for CWA-3, CWA-2, CWA-34 (and also CWW units)



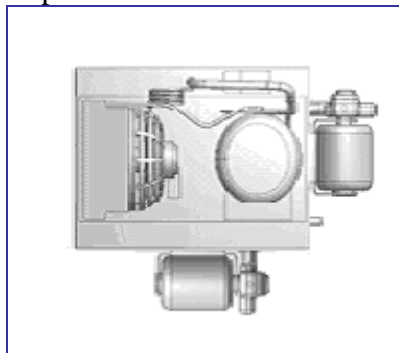
2 PUMPS



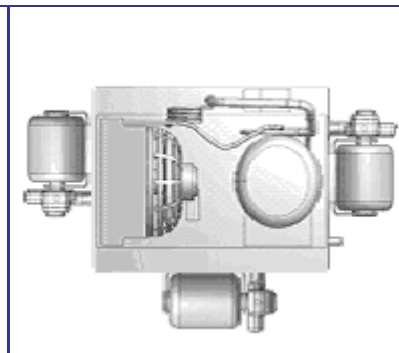
3 PUMPS

Triple/Quadruple Motor Bath Option, Used With CWA-100 and 175

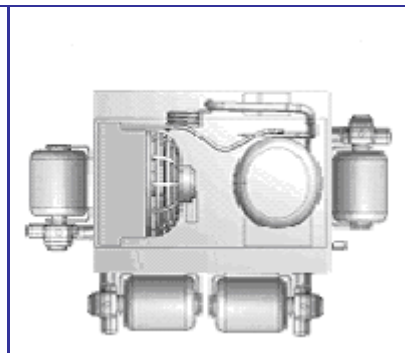
Top view for CWA-100 and CWA-175



2 PUMPS



3 PUMPS



4 PUMPS



PRODUCT WARRANTY

BVL Controls warrants this product for one (1) full year including parts and labor when unit is returned to our factory (freight is not part of the warranty) or parts only when repair must be done at another location. Parts (under warranty) will be charged to your account and will be credited upon receipt of the defective part.

In Canada: BVL Controls Ltd
661 de la Sabliere
Bois-des-Filion, Quebec, Canada
J6Z 4T2

Phone: 1-866-BVL-CONTROLS (285-2668)

Direct Line: (450) 965-0502

In U.S.A: Call us and we will refer you to the closest representative.

POWER PACK INFORMATION

(Please fill this form before contacting technical support)

Unit Information

Model Number	
Serial Number	
Production Date	
Compressor Number	
Installation Date	
Installed by (Company)	



INSTRUCTIONS FOR THE INSTALLATION ECO-025/ECO-033

- 1 : The supply voltage required for the unit is 120 VAC with a 15 A circuit breaker.
- 2 : For a proper functioning of the machine, leave a 6'' (15 cm.) minimum clear space around the condenser to facilitate air flow.
- 3 : Install a tube of cooling line at the output of the pump.
- 4 : Install the return of the same line at the input of the pump (to create a closed circuit).
- 5 : Remove the cover of the tank and pour 1 gallon (1 X 4 liters) of glycol 100% in the tank and add water until just below the overflow.

Important: Never operate the pump before filling the tank.

The pump must always run to have a constant agitation in the tank and avoid damaging the compressor.

- 6 : Replace the cover on top of the tank.
- 7 : Before plugging the power cord, ensure that the installation and connections have been made to required specification. After any adjustments and making the electrical connection, start the unit. The pump will start but take note there is a one minute delay before the unit start-up.
- 8 : The level of liquid in the tank will go down until the cooling line is filled.
- 9 : Unplug the pump, remove the cover and add water until just below the overflow.
- 10 : Replace the cover on top of the tank.
- 11 : Connect the pump.
- 12 : The temperature will slowly drop until 28°F (factory setting) on the thermostat display.



INSTRUCTIONS FOR THE INSTALLATION CMC-030/CMV-030

- 1 : The supply voltage required for the unit and the pump is 120 VAC with a 20 A circuit breaker.
 - 2 : For a proper functioning of the machine, leave a 6'' (15 cm.) minimum clear space around the condenser to facilitate air flow.
 - 3 : Install a tube of cooling line at the output of the pump.
 - 4 : Install the return of the same line at the input of the tank (to create a closed circuit).
 - 5 : Remove the cover of the unit and pour 1 gallon (1 X 4 liters) of glycol 100% in the tank for the CMC-030 or 2 gallons (2 x 4 liters) for the CMV-030 and add water until just below the overflow.
 - 6 : Before plugging the pump, ensure that the installation and connections have been made to required specification. After any adjustments, plug in the pump.
- Important: Never operate the pump before filling the tank.
The pump must always run to have a constant agitation in the tank and avoid damaging the compressor.
- 7 : The level of liquid in the tank will go down until the cooling line is filled.
 - 8 : Add water until just below the overflow.
 - 9 : Replace the cover on top of the unit.
 - 10 : Switch on the unit. Note there is a one minute delay before the unit start-up.
 - 11 : The temperature will slowly drop until 28°F (factory setting) on the thermostat display.



INSTRUCTIONS FOR THE INSTALLATION CWA-2

1 : The supply voltage required for the unit is 120 VAC with a 15 A circuit breaker. If there is one pump, provide an additional 15 A circuit breaker. If there are 2 pumps, provide instead an additional 20 A circuit breaker.

2 : For a proper functioning of the machine, leave a 6'' (15 cm.) minimum clear space around the condenser to facilitate air flow.

3 : Install a tube of cooling line at the output of the pump.

4 : Install the return of the same line at the input of the tank (to create a closed circuit). Repeat step 3 and 4 for each pump.

5 : Remove the unit from the top of the tank (always use the lifting handles to raise the unit) and pour 3 gallons (3 X 4 liters) of glycol 100% in the tank and add water until just below the overflow.

6 : Before plugging the pump(s), ensure that the installation and connections have been made to required specification. After any adjustments, plug in the pump(s).

Important: Never operate the pump(s) before filling the tank.

The pump(s) must always run to have a constant agitation in the tank and avoid damaging the compressor.

7 : The level of liquid in the tank will go down until the cooling line(s) is(are) filled.

8 : Add water until just below the overflow and replace the unit on top of the tank.

9 : Switch on the unit. Note there is a one minute delay before the unit start-up.

10 : The temperature will slowly drop until 28°F (factory setting) on the thermostat display.



INSTRUCTIONS FOR THE INSTALLATION CWA-3

1 : The supply voltage required for the unit and one pump is 120 VAC with a 20 A circuit breaker. If there is an extra pump, provide an additional 15 A circuit breaker.

2 : For a proper functioning of the machine, leave a 6'' (15 cm.) minimum clear space around the condenser to facilitate air flow.

3 : Install a tube of cooling line at the output of the pump.

4 : Install the return of the same line at the input of the tank (to create a closed circuit). Repeat step 3 and 4 for each pump.

5 : Remove the unit from the top of the tank (always use the lifting handles to raise the unit) and pour 3 gallons (3 X 4 liters) of glycol 100% in the tank and add water until just below the overflow.

6 : Before plugging the pump(s), ensure that the installation and connections have been made to required specification. After any adjustments, plug in the pump(s).

Important: Never operate the pump(s) before filling the tank.

The pump(s) must always run to have a constant agitation in the tank and avoid damaging the compressor.

7 : The level of liquid in the tank will go down until the cooling line(s) is(are) filled.

8 : Add water until just below the overflow and replace the unit on top of the tank.

9 : Switch on the unit. Note there is a one minute delay before the unit start-up.

10 : The temperature will slowly drop until 28°F (factory setting) on the thermostat display.



INSTRUCTIONS FOR THE INSTALLATION CWA-34

1 : The supply voltage required for the unit is 208/230 VAC with a 15 A circuit breaker. For 1 pump, the supply voltage required is 120 VAC with a 15 A circuit breaker. For 2 pumps, the supply voltage required should be instead 120 VAC with a 20 A circuit breaker. If your installation requires 3 pumps, aside from the 120 VAC 20A circuit breaker, provide an additional 15 A circuit breaker.

2 : For a proper functioning of the machine, leave a 6'' (15 cm.) minimum clear space around the condenser to facilitate air flow.

3 : Install a tube of cooling line at the output of the pump.

4 : Install the return of the same line at the input of the tank (to create a closed circuit). Repeat step 3 and 4 for each pump.

5 : Remove the unit from the top of the tank (always use the lifting handles to raise the unit) and pour 3 gallons (3 X 4 liters) of glycol 100% in the tank and add water until just below the overflow.

6 : Before plugging the pump(s), ensure that the installation and connections have been made to required specification. After any adjustments, plug in the pump(s).

Important: Never operate the pump(s) before filling the tank.

The pump(s) must always run to have a constant agitation in the tank and avoid damaging the compressor.

7 : The level of liquid in the tank will go down until the cooling line(s) is(are) filled.

8 : Add water until just below the overflow and replace the unit on top of the tank.

9 : Switch on the unit. Note there is a one minute delay before the unit start-up.

10 : The temperature will slowly drop until 28°F (factory setting) on the thermostat display.



INSTRUCTIONS FOR THE INSTALLATION CWA-100/CWA-175

1 : The supply voltage required for the unit is 208/230 VAC with a 20 A circuit breaker. For 2 pumps, the supply voltage required is 120 VAC 20 A. If your installation requires 3 or 4 pumps, provide an additional 20 A circuit breaker.

2 : For a proper functioning of the machine, leave a 12'' (30 cm.) minimum clear space around the condenser to facilitate air flow.

3 : Install a tube of cooling line at the output of the pump.

4 : Install the return of the same line at the input of the tank (to create a closed circuit). Repeat step 3 and 4 for each pump.

Important: Never operate the pumps before filling the tank.

The CWA-100 and CWA-175 are available with a minimum of two pumps. If only one pump is necessary for your installation, connect the second pump in a closed circuit and always run it (24 hours a day) to have a constant agitation in the tank and avoid damaging the compressor.

5 : Remove the unit from the top of the tank (always use the lifting handles to raise the unit) and pour 7 gallons (7 X 4 liters) of glycol 100% (for an installation with 4 pumps, pour 8 gallons of glycol) in the tank and add water until just below the overflow.

6 : Before plugging the power cord of the pumps, ensure that the installation and connections have been made to required specification. After any adjustments, plug in the pumps.

7 : The level of liquid in the tank will go down until the cooling lines are filled.

8 : Add water until just below the overflow and replace the unit on top of the tank.

9 : Switch on the unit. Note there is a one minute delay before the unit start-up. For the CWA-175, note also the 3 stop/start cycles before the full start-up of the unit.

10 : The temperature will slowly drop until 28°F (factory setting) on the thermostat display.



MAINTENANCE

Keep liquid level constant in glycol reservoir. Glycol should be changed every year except in very hot areas where it should be changed every six (6) months.

1. Check liquid monthly
 - a. If level is low, fill with water;
 - b. If ice builds up, remove one gallon of water and replace with glycol.
2. Keep condensing unit free of foreign matter and clean every six (6) months.



TROUBLESHOOTING

If the control system does not function properly, verify that the unit is wired, configured and set properly. If the problem persists, use the following procedures to determine the cause of the problem:

- Check for proper supply voltage to thermostat.

WARNING: Risk of Electrical Shock.

High voltage may be present at electrical terminals and other exposed internal metal surfaces. Avoid contact with all metal surfaces on control when cover is removed.

PROBLEM	CAUSE	SOLUTION(S)
1-Excessive foam	A- Warm walk-in cooler B- Check applied pressure to barrel C- Check equipment D- Warm product lines	A- Adjust cooler temperature between 34° and 36°F B- Adjust setting on regulator for proper pressure C- Check the physical equipment from keg to faucet D- Refer to 4
2- Compressor does not start (no hum), but the fan motor runs.	A- Compressor relay or capacitor malfunction B- Inadequate voltage C- Compressor failure	A- Replace compressor relay, overload and capacitor B- Measure voltage across common and run terminal on compressor. Voltage must not drop below 90% of rated voltage C- Replace compressor
3- Compressor starts and continues to run until freeze up and will not cut off.	A- Thermostat control or probe failure	A- Replace thermostat or probe



TROUBLESHOOTING

4- Warm beer	A- Defective pump. (Check motor also)	A- Check returns line in reservoir for liquid flow. Replace pump.
	B- Defective motor. (Check pump also)	B- Replace motor.
	C- Refrigeration unit is not running.	C- Refer to 2
	D- Conduit lines located in overheated area.	D- Remove from any hot water pipes or kitchen area with stove or glass washer.
	E- Conduit lines flooded in PVC chase.	E- Remove lines from PVC, thoroughly dry PVC and repair/replace conduit as needed.
	F- Un-insulated or poorly insulated lines.	F- All lines should be fully insulated from cooler to dispenser, including glycol lines from power pack into cooler.
	G- Thermostat.	G- Adjust temperature to colder setting.
	H- Condenser fan motor not working.	H- Replace condenser fan motor.
	I- Freon leak.	I- Repair leak and recharge.
	J- Dirty condenser.	J- Clean the condenser.
	K- Condensation in conduit isolation. (May be caused from cleaning lines)	K- Check trunk housing in areas for dropping or low spots. Split insulation approximately 5" and separate. Allow any water to drain, and then air dry. Close and seal trunk housing.
	L- Warm walk-in cooler	L- Refer to 1