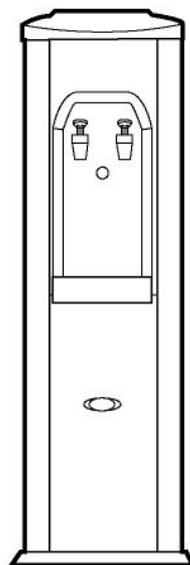


**CLOVER WATER COOLERS**

# **SERVICE MANUAL**

CAUTION : BEFORE SERVICING THE APPLIANCE  
READ THE "SAFETY PRECAUTIONS" IN THIS MANUAL

**MODEL : B14A, B14B**



**clover<sup>®</sup>**

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## FOR YOUR SAFETY

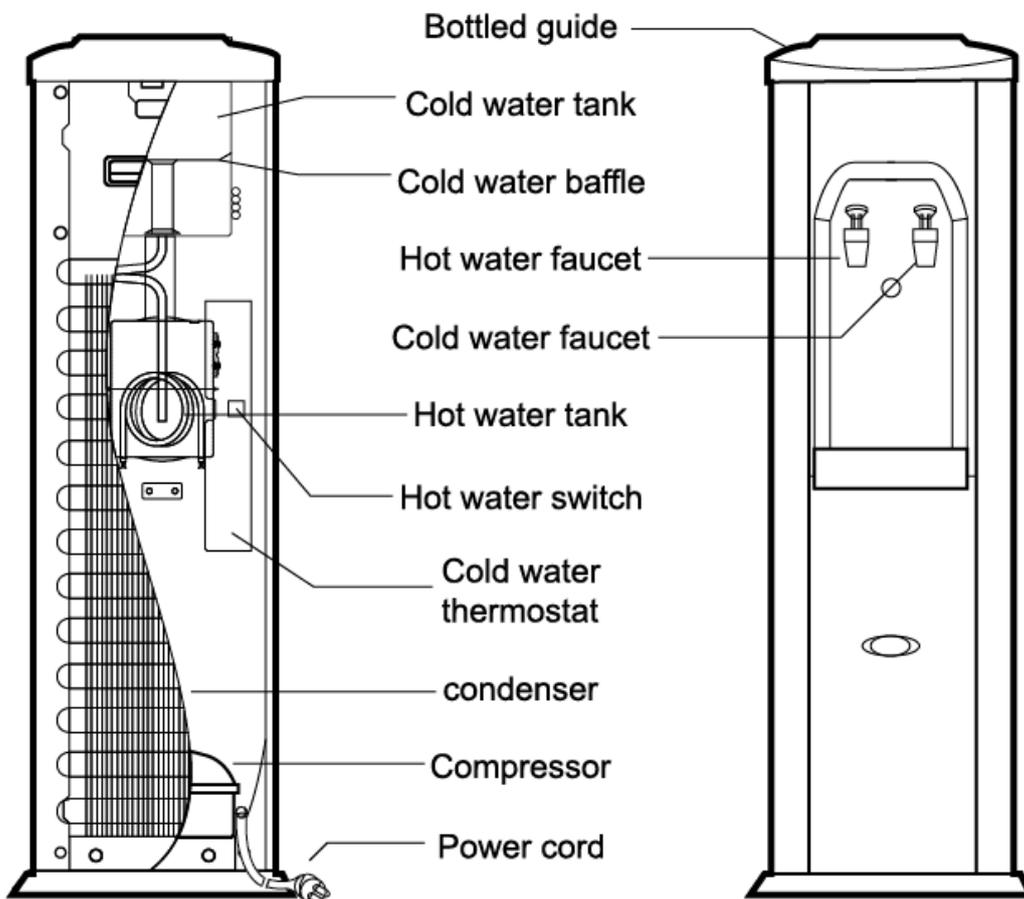
**Please read the following safety precaution before servicing the watercooler.**

- 1) Check if an electric leakage occurs in the appliance.
- 2) To prevent electric shock, unplug prior to servicing.
- 3) In case of testing with power on, wear rubber gloves to prevent electric shock.
- 4) When using an instrument or replacing a part for repairing, check it is applied to rated voltage current and capacity.
- 5) Prevent water from flowing into electric elements in mechanical parts.
- 6) When carrying or tilting the appliance, remove all the objects on it.
- 7) If the cooling cycle is out of order, contact nearest authorized service center for maintenance, repair and adjustment.

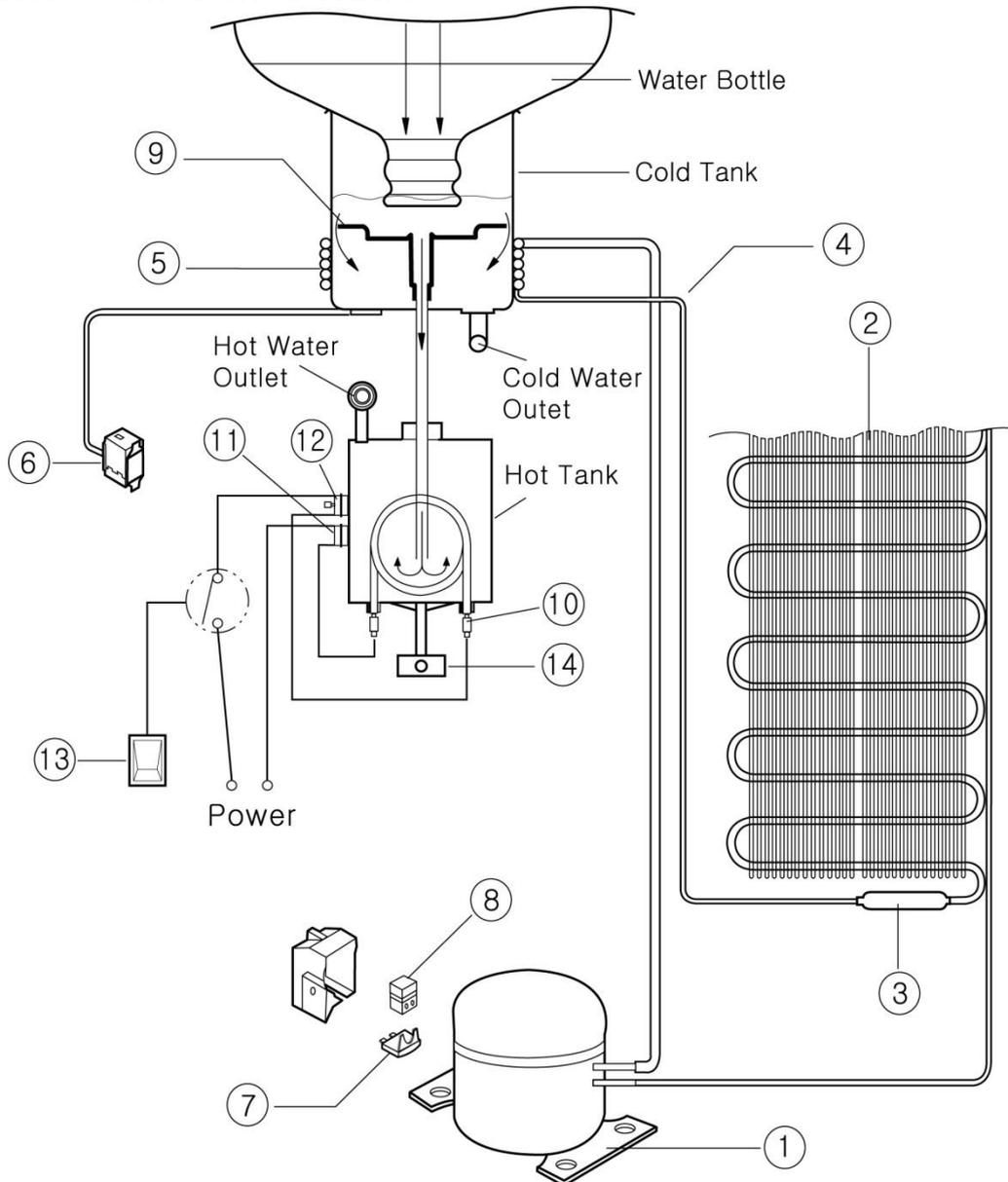
# 1. SPECIFICATION & PARTS IDENTIFICATION

<b>MODEL</b>		B14A(HOT & COLD)	B14B(COOK & COLD)
<b>DIMENSION</b>		313W×323D×963H(mm)	
<b>WEIGHT</b>		16kg	17kg
<b>COLD</b>	<b>CONSUMPTION</b>	105W	
	<b>TEMP CONTROL</b>	AUTO	
	<b>TANK</b>	Stainless Steel	
	<b>CAPACITY</b>	3.0 ℓ/h (10 °C)	
<b>HOT</b>	<b>CONSUMPTION</b>	405W/465W	
	<b>PROTECTOR</b>	Heat Limiter	
	<b>TEMP. CONTROL</b>	Hot Control	
	<b>TANK</b>	Stainless Steel	
	<b>CAPACITY</b>	7.5 ℓ/h (85 °C)	
<b>ELECTRICAL</b>		220-240V, 50/60Hz. 110-127V, 50/60Hz.	

Check the available power supply against the watercooler data plate to assure correct electrical service.



## 2. OPERATION & FUNCTION OF PARTS



### A. Cooling Operation

The vapor refrigerants that compressed to high temperature & high pressure conditions in the compressor, turn into liquid refrigerant of high temperature and high pressure passing through the condenser, and then turn into the liquid refrigerants of low temperature and low pressure conditions by passing through the capillary tubes. The liquid refrigerant of low temperature & low pressure absorbs the surrounding heat while evaporating in the evaporator. Then, it is sucked in the compressor by turning into saturated vapor.

### B. Heating Operation

The electric heater inside of the hot water tank heats the supplied water. The temperature of hot water is controlled by the hot control at a proper temperature. In case of overheating, the heat limiter will operate automatically.

## C. Function of Parts

- ① Compressor: Compresses the vapor refrigerant sucked from the evaporator and discharges it to condenser
- ② Condenser: Changes the compressed vapor refrigerant into the liquid refrigerant by cooling.
- ③ Drier: Removes moisture and dirt inside pipes
- ④ Capillary tube: Reduces the pressure of liquid refrigerant and evaporates it in the evaporator under constant pressure.
- ⑤ Evaporator: Absorbs the surrounding heats while evaporating the liquid refrigerant, cools down water inside of cold water tank.
- ⑥ Cold water thermostat: Senses the temperature of cold water tank and controls the electric power supply to the compressor automatically in order to keep the constant temperature of cold water.
- ⑦ Over Load Protector (OLP): Protects the compressor and operates when rising up to abnormal temperature or energizing over current.
- ⑧ PTC Starter: Starts up the motor of compressor.
- ⑨ Cold water baffle: Separates the supplied water from cold water, hot water, or room temperature water respectively.
- ⑩ Hot tank heater: Heats the supplied room temperature water to hot water.
- ⑪ Hot control: Controls the temperature of hot water at a proper automatically.
- ⑫ Heat limiter: Cuts off the electric power to the heater in case of overheating.
- ⑬ Hot water switch: Supplies or cuts off the electric power to the heater by setting it ON/OFF.
- ⑭ Drain cap: By opening this, you may drain out remaining water in hot water tank when cleaning or not using cooler for a long period of time.

## 3. LOCATION REQUIREMENTS

- A. Locate cooler in a well ventilated space where temperature is never below 0°C.
- B. Maintain a minimum clearance of 4 inches on sides and rear of cooler for proper ventilation.
- C. Make sure installation ground is flat and even. - Unbalanced placement may cause excessive noise and trembling of the cooler.
- D. Coolers are for indoor use only. Keep away from direct sunlight and excessive moisture.
- E. Avoid harmful gas or excessive heat.

## 4. INSTALLATION PROCEDURES

- A. Install drip tray below faucet.
- B. Thoroughly clean the cooling tank and baffle. Baffle must be in exact place for proper cooling operation.
- CAUTION: IF THE COLD WATER BAFFLE IS REMOVED, COLD WATER WILL NOT BE FORMED NOR DISCHARGED.**
- C. Put standardized bottle filled with water on top of the product.

Use drinking water only. Filling the unit with any other type of beverages may cause significant problems.

- D. For hot water activation, stay holding down hot faucet handle until water flow is continuous and clear.
- E. Place the hot water switch on the "ON" position.

(Check the available power supply against the cooler specification plate to ensure correct electrical service.)

**CAUTION: FAILURE TO FILL HOT TANK WITH WATER BEFORE SWITCH ON HOT WATER CAN CAUSE PHYSICAL DAMAGE TO THE COOLER.**

- F. Cooler will be ready to serve you Cold & Hot water in 30 minute after installation.
- G. Hot Water Safety Faucet: A safety faucet deters accidental dispensing of water by toddlers. (Korea, US patented)

**CAUTION: WATER FROM HOT FAUCET IS EXTREMELY HOT AND MAY SCALD.**

## 5. STORAGE

- A. Switch off hot water switch. Unplug power cord.
- B. Drain hot water by opening faucet. Then, do the same on cold water faucet.
- C. Place a bucket behind the drain pipe. By unscrewing the drain cap counter clockwise, drain the remaining water in the hot water tank. When tank is emptied, dry drain cap and the end of drain pipe. Close draining pipe with cap.
- D. When storing, ensure it stands on its erect position on the flat and even ground. (Do not lay the product on its sides down or upside down.)
- E. When not use for a long period of time, conduct product cleaning before you put in storage.

**CAUTION: FAILURE TO ABIDE BY ABOVE PROCEDURE MAY INCUR PHYSICAL DAMAGE ON THE COOLER.**

**CAUTION: WATER FROM HOT FAUCET IS EXTREMELY HOT AND MAY SCALD.**

## 6. CLEANING

- A. Do the same as A to C procedure for storage.
- B. Remove baffle in cold water tank.
- C. Remove faucets from the product. Both faucets are disassembled by turning them counter clockwise.
- D. Wear disposable gloves (clean and safe material for drinking water).
- E. Wash the faucets, drip tray with mild soap and water. Then, rinse them with clean water immediately.
- F. Cleanse interior of cold water tank with a clean dish towel.  
Do not use bleach or any cleaning agents containing bleach or chlorine.
- G. Assemble drip tray, grid, faucets and baffle.
- H. Pour clean water into cold water tank and open cold faucet to flush the entire water trail. Repeat this step at least three times. Then, close the faucet.

**Steps I, J are for Hot & Cold model only.**

*I. Open hot water faucet. Then, until the water flow from hot water faucet is continuous and clear, pour clean water into cold water tank. Then, close the faucet.*

*J. Open drain cap to flush water trail in hot water tank.*

*Repeat this step at least three times and close the drain cap at the end.*

**K.** Brush out and vacuum the dirt and dust from condenser. Do not use abrasive or wire brush.

**L.** Follow Installation Procedures to operate the cooler.

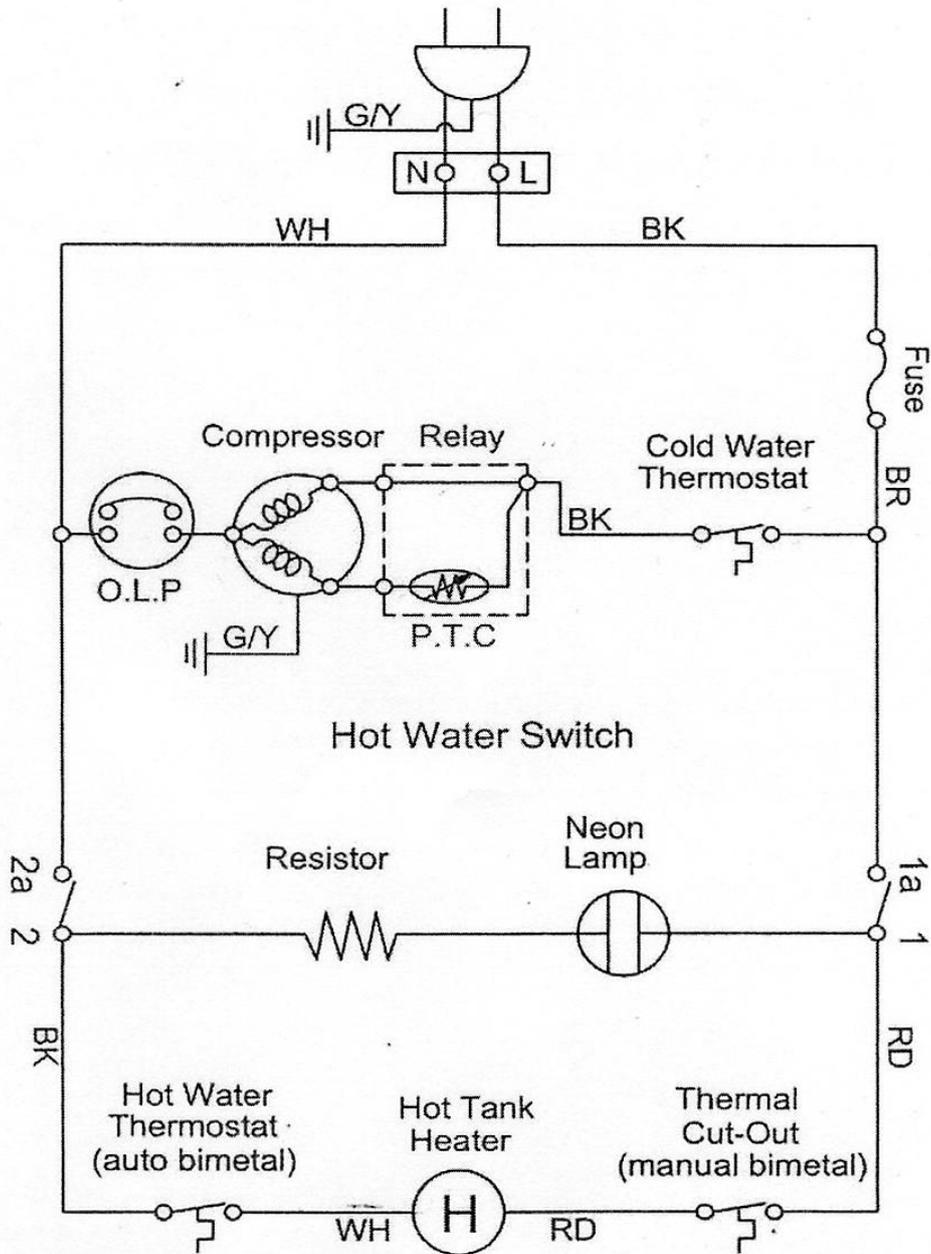
**7. TROUBLESHOOTING GUIDE**

<u>TROUBLE</u>	<u>POSSIBLE CAUSE</u>	<u>REMEDY</u>
<b>REFRIGERATION SYSTEM</b>		
A. Compressor does not run.	No electric power to outlet.	Turn on electric power outlet.
	The thermostat is misadjusted or defective.	Adjust or replace the thermostat, as necessary.
	The wires leading to the thermostat are defective or are not connected.	Check the internal wiring. Make repairs as necessary.
	The line voltage is low.	Check the line voltage. It must be at least 90% of minimum voltage.
	The compressor over-load Protector (OLP) is defective.	Replace the defective over-load protector.
	The starting relay (PTC) is defective.	Replace the starting relay.
B. Water is adequately chilled, but cooler runs excessively or continuously.	The compressor is defective.	Replace the compressor. Return cooler to authorized service center or factory for repair.
	Poor ventilation.	Minimum side & rear clearance 4"
	The condenser is dirty or restricted.	Clean the condenser or relocate the unit to prevent restricting the condenser.
C. The cooler compressor runs continuously, but I do not have cold water.	The thermostat is defective. (the contacts are shorted or the control is not adjusted properly)	Replace or adjust the thermostat as necessary.
	The ambient temperature is high.	It is normal for the cooler to run continuously at high ambient temperatures.
	There has been a substantial loss in the sealed system's charge of refrigerant.	If refrigerant leak is suspected, return cooler to authorized service center or factory for repair.
D. The water cooler excessively and the cold water is not cold enough.	The compressor is defective.	Same as above.
	Cold water baffle is not in place.	Check inside the cold tank to make sure baffle is fully inserted into the mating cold tank fitting nut.
	The condenser is dirty or restricted.	Clean the condenser and relocate the

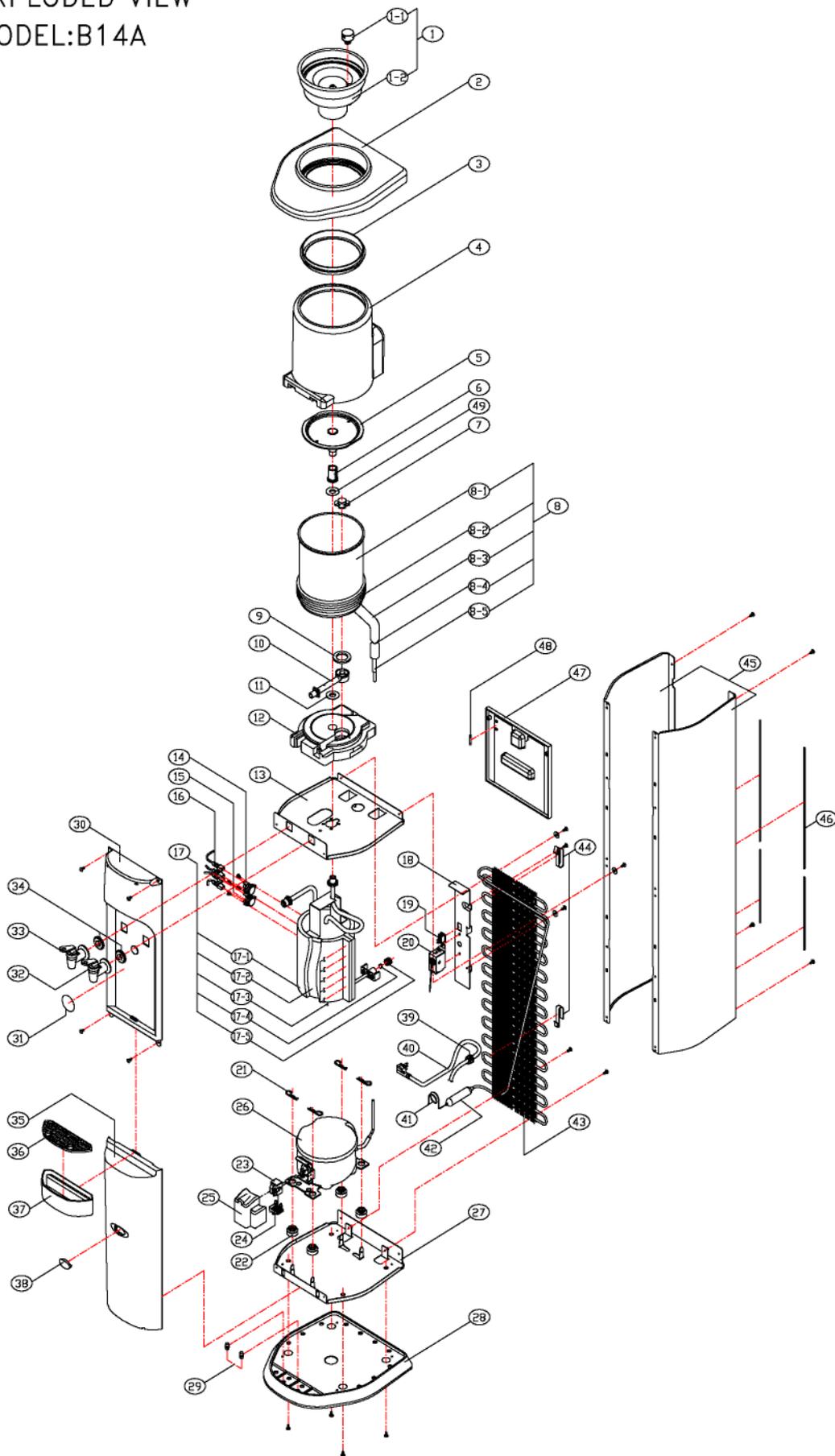
	<p>The cold water thermostat is set high or the water cooler is in a high ambient environment.</p> <p>Usage of the cold water system is greater than the water cooler capacity.</p> <p>The refrigeration system is overcharged or undercharged.</p> <p>There is a partial restriction in the refrigeration system.</p> <p>The compressor is defective.</p>	<p>water cooler to prevent restricting the condenser.</p> <p>Check the cold water thermostat setting. Adjust the setting as necessary.</p> <p>Inform the customer of the cold water system's maximum capacity.</p> <p>Return water cooler to authorized service center or factory for repair.</p>
E. The water cooler has a short running cycle. It is cooling, but does not run long enough to cool water to the required level.	<p>If wattage readings are normal, the cold water thermostat may be defective.</p> <p>The cold water thermostat is improperly set for the prevailing environmental conditions and water cooler usage.</p> <p>The compressor motor is defective, causing the watercooler to cycle on the overload protector.</p>	<p>Replace the cold water thermostat.</p> <p>Adjust the cold water thermostat.</p> <p>Replace the compressor.</p> <p>Return water cooler to authorized service center or factory for repair.</p>
F. The cold water flows slowly or not at all.	<p>Defective faucet.</p> <p>The cold water thermostat is so much low, causing ice to build up in the cold tank, blocking water flow.</p>	<p>Replace faucet assembly.</p> <p>Defrost water cooler.</p> <p>Adjust the temperature control.</p>
G. Cook water too Cold. (cook & cold models)	<p>If cook water is only occasionally used, cold water will migrate into the cook water system.</p>	<p>This phenomenon can happen under normal condition.</p>
<b>HOT WATER SYSTEM</b>		
A. The hot water is not hot.	<p>If cooler equipped with hot water switch may be OFF.</p> <p>There is a loose or broken wire connection in the hot water system.</p> <p>The hot control is defective.</p> <p>The heat limiter is "ON".</p> <p>The hot tank heater is defective.</p>	<p>Turn the hot water switch ON.</p> <p>Identify the loose or broken wire connection, repair as necessary.</p> <p>Replace the hot control.</p> <p>Push "Reset" button of heat limiter.</p> <p>Replaced the hot tank heater or hot tank assembly.</p>
B. The hot water is hot, but not hot enough.	<p>Usage of the hot water system is greater than its capacity.</p> <p>The hot control is defective.</p>	<p>Inform the customer of the hot water system's maximum capacity.</p> <p>Replace hot control.</p>
C. The hot water flows slowly or not at all.	<p>Hot water flow is designed to flow slowly than cold and cook water to prevent splashing.</p> <p>Defective faucet.</p> <p>Hot tank plugged with mineral deposits.</p>	<p>Advice the customer of this safety feature.</p> <p>Replace faucet.</p> <p>De-lime tank.</p>

D. Hot tank is noisy.	The hot tank heater is caked with mineral deposits.	Slight boiling sound normal during heating cycle. De-lime tank.
<b>NOISE</b>		
A. There is excessive noise coming from the cooler, but it is otherwise operating normally.	The cooler is not level.	The cooler must be leveled. Place the cooler on even surface.
	A section of the tubing inside the cooler is touching other parts of cooler, causing noise to be generated due to vibration. Check the connection of the fixed screws.	Adjust position of the tubing to make sure it is not in contact with any other parts. Completely connect the fixed screws.
	The compressor's operation is noisy because of inherent conditions.	Advise the customer of the cooler's normal operating sounds.
<b>WATER LEAKAGE</b>		
A. Water drips from faucet.	The faucet body packing and spring is defective.	Press down the faucet lever several times. Replace faucet assembly.
B. Leakage through inside or outside of appliance.	The faucet is not completely connected.	Properly connect the faucet.
C. Water drips from dual float valves assembly.	The dual float valves elbow union is defective.	Replace the dual float valves elbow union.
	The dual float valve's packing is defective.	Replace the dual float valves packing.
	The cold water piping is defective.	Properly connect and replace the cold water piping.
<b>NON SPILL SYSTEM</b>		
A. Water flow is slow from all faucet.	User has taken a large draw or series of draws and reservoir has not yet refilled. ( Non Spill System only )	Wait until the cold water tank is filled with water after a large draw due to inherent restriction of the Non Spill System.
	Air filter is wet.	Allow filter to dry. Airflow through the filter will gradually return to normal as the filters dries.
B. An excessive quantity of water accumulates in the housing.	The housing is designed to hold a small amount of water that may seep through the cap at the bottle neck.	If problem happens on a high percentage of cooler, there may be a defect in a cap. Contact the cap manufacturer.

### 8. WIRING DIAGRAM



EXPLODED VIEW  
MODEL: B14A

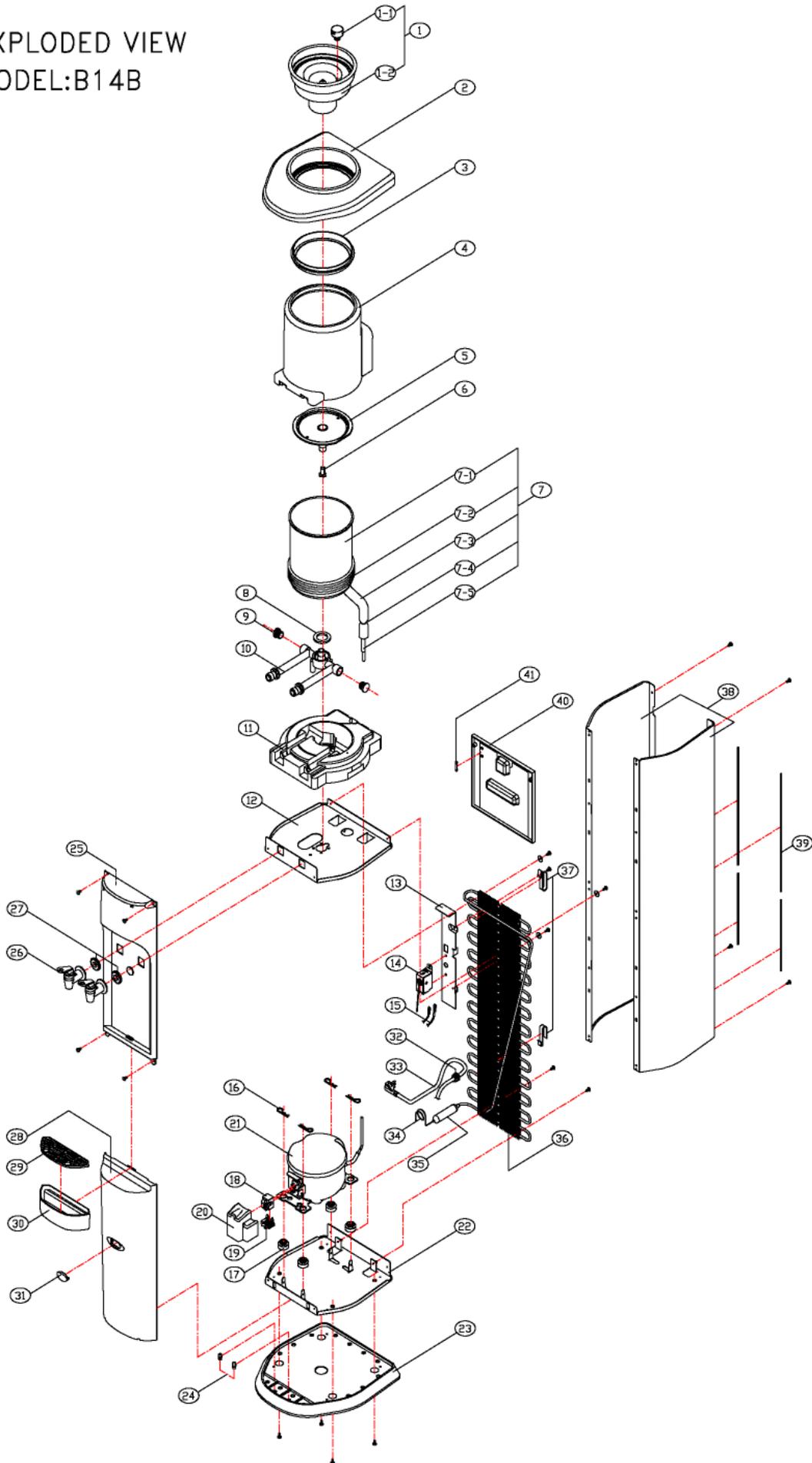


Updated December 30, 2008

## B14A SERVICE PARTS LIST

No.	Part name	Part No.	Q'ty	No.	Part name	Part No.	Q'ty
1	No-Spill Kit (CN3-PF)	24-012	1	20	Cold Water Thermostat	07-001	1
1-1	Air Filter Ass'y	24-101-008	1	21	Split Pin	12-009-001	4
1-2	No-Spill Kit	03-152	1	22	Seat Rubber-Compressor	09-048-002	4
2	Top Cover	03-151	1	23	PTC	05-021-003	1
3	Bottle Guide Packing	09-054	1	24	OLP	05-020-003	1
4	Side Insulation-Cold Water Tank	08-022	1	25	PTC Cover	05-022-001	1
5	Cold Water Baffle	03-107-001	1	26	Compressor	05-003B-029	1
6	Cold Water Tank Fitting Nut	03-066-001	1	27	Base-Compressor	02-076-001	1
7	Outlet Cold Water Pipe Nut	03-058-001	1	28	Bottom Base	03-153	1
8	Cold Water Tank Ass'y	-	1	29	Front Panel-Lower Seat Rubber	09-055	2
8-1	Cold Water Tank	02-003-008	1	30	Front Panel-Upper	03-149	1
8-2	Evaporator	10-002	1	31	Hot Water Caution Label	11-006-009	1
8-3	Cable Tie	17-003	1	32	Cold Faucet Ass'y	23-014A-003A	1
8-4	Insulation-Suction Tube	08-005-004	1	33	Hot Faucet Ass'y	23-003A-003A	1
8-5	Heat Shrinkable Tube	05-005	1	34	Silicone Washer-Faucet	09-003	2
9	Silicone-Outlet Pipe	09-001	1	35	Front Panel-Lower	03-150	1
10	Cold Water Outlet Pipe	03-048-001	1	36	Grid-Drip Tray	03-156	1
11	Silicone-Inlet Pipe	09-036	1	37	Drip Tray	03-155	1
12	Lower Insulation-Cold Water Tank	08-023	1	38	Lower-Name Plate	03-158A	1
13	Base-Cold Water Tank	02-075	1	39	Cord Bushing	07-006-003	1
14	Thermal Cut-Out(manual bimetal)	07-010-002	1	40	Power Supply Cord	07-052-005	1
15	Hot Water Thermostat(auto bimetal)	07-009-004	1	41	Capillary Tube	10-003-001	1
16	Wire Ass'y	07-115-002	1	42	Drier	05-002-001	1
17	Hot Water Tank Ass'y	-	1	43	Wire Condenser	05-008-009	1
17-1	Insulation Hot Water Tank-Side	08-004-002	1	44	Cord Hook	03-159	2
17-2	Hot Water Tank	21-015F-010E	1	45	Side Panel	02-075	2
17-3	Heater	06-002A-007	1	46	Protector-Side Panel	03-020-001	4
17-4	Drain Cap Packing	09-001	1	47	Rear Panel	03-154	1
17-5	Drain Cap Hot Water	03-031	1	48	Spare Fuse	07-003-019	1
18	Control Panel	02-073	1	49	Cold Water Tank Fitting Washer	03-163	1
19	Hot Water Switch	07-002-003	1				

EXPLODED VIEW  
MODEL: B14B



B14B SERVICE PARTS LIST							
Updated December 30, 2008							
No.	Part name	Part No.	Q'ty	No.	Part name	Part No.	Q'ty
1	No-Spill Kit (CN3-PF)	24-012	1	18	PTC	05-021-003	1
1-1	Air Filter Ass'y	24-101-008	1	19	OLP	05-020-003	1
1-2	No-Spill Kit	03-152	1	20	PTC Cover	05-022-001	1
2	Top Cover	03-151	1	21	Compressor	05-003B-029	1
3	Bottle Guide Packing	09-037	1	22	Base-Compressor	02-076-001	1
4	Side Insulation-Cold Water Tank	08-022	1	23	Bottom Base	03-153	1
5	Cold Water Baffle	03-107-001	1	24	Front Panel-Lower Seat Rubber	09-055	2
6	Cold Water Tank Fitting Nut	03-067	1	25	Front Panel-Upper	03-149	1
7	Cold Water Tank Ass'y	-	1	26	Faucet Ass'y	23-015A-010D 23-016A-010D	2
7-1	Cold Water Tank	02-003-010	1	27	Silicone Washer-Faucet	09-003	2
7-2	Evaporator	10-002	1	28	Front Panel-Lower	03-150	1
7-3	Cable Tie	17-003	1	29	Grid-Drip Tray	03-156	1
7-4	Insulation-Suction Tube	08-005-004	1	30	Drip Tray	03-155	1
7-5	Heat Shrinkable Tube	05-005	1	31	Lower-Name Plate	03-158B	1
8	Silicone-Outlet Pipe	09-001	1	32	Cord Bushing	07-006-003	1
9	Plug-Partition Tube	09-039	2	33	Power Supply Cord	07-052-005	1
10	Partition Tube	03-113	1	34	Capillary Tube	10-003-001	1
11	Lower Insulation-Cold Water Tank	08-023-001	1	35	Drier	05-002-001	1
12	Base-Cold Water Tank	02-075	1	36	Wire Condenser	05-008-009	1
13	Control Panel	02-073	1	37	Cord Hook	03-159	2
14	Cold Water Thermostat	07-001	1	38	Side Panel	02-074	2
15	Wire Ass'y	07-116	1	39	Protector-Side Panel	03-020	4
16	Split Pin	12-009-001	4	40	Rear Panel	03-154	1
17	Seat Rubber-Compressor	09-048-002	4	41	Spare Fuse	07-003-019	1