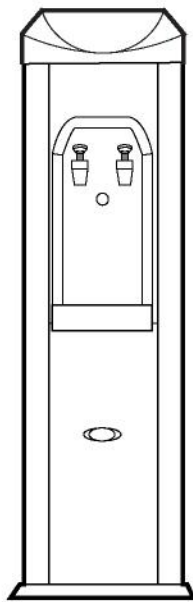


CLOVER WATER COOLERS

SERVICE MANUAL

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

MODEL : D14A, D14B



clover[®]

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FOR YOUR SAFETY

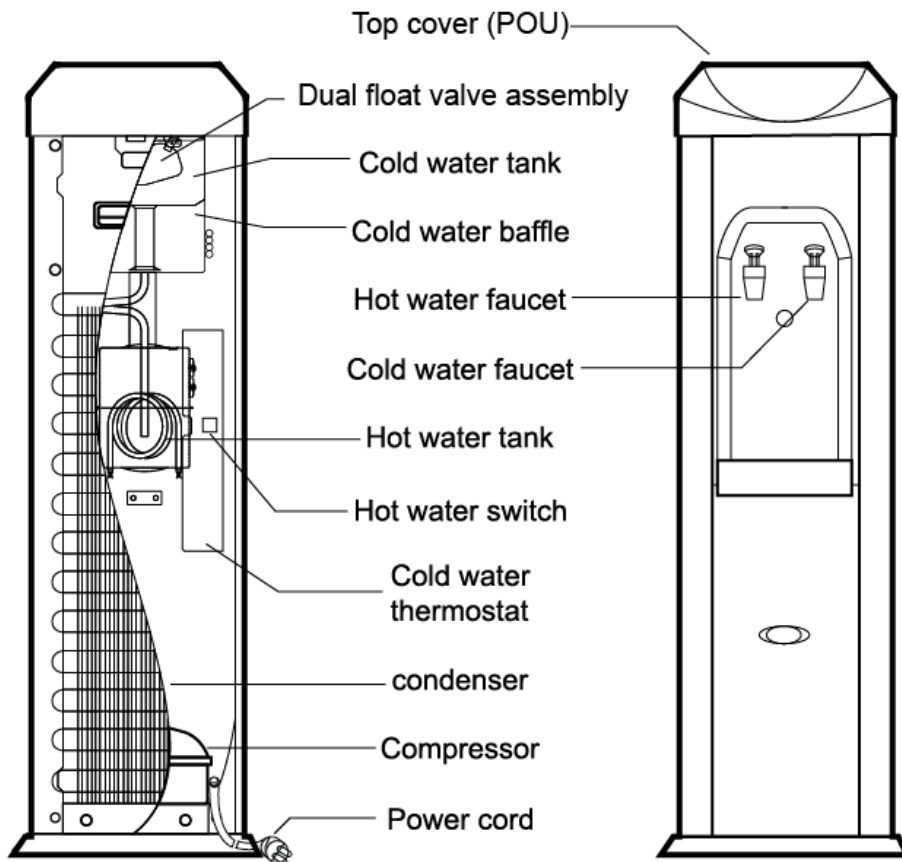
Please read the following safety precaution before servicing the watercooler.

- 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.

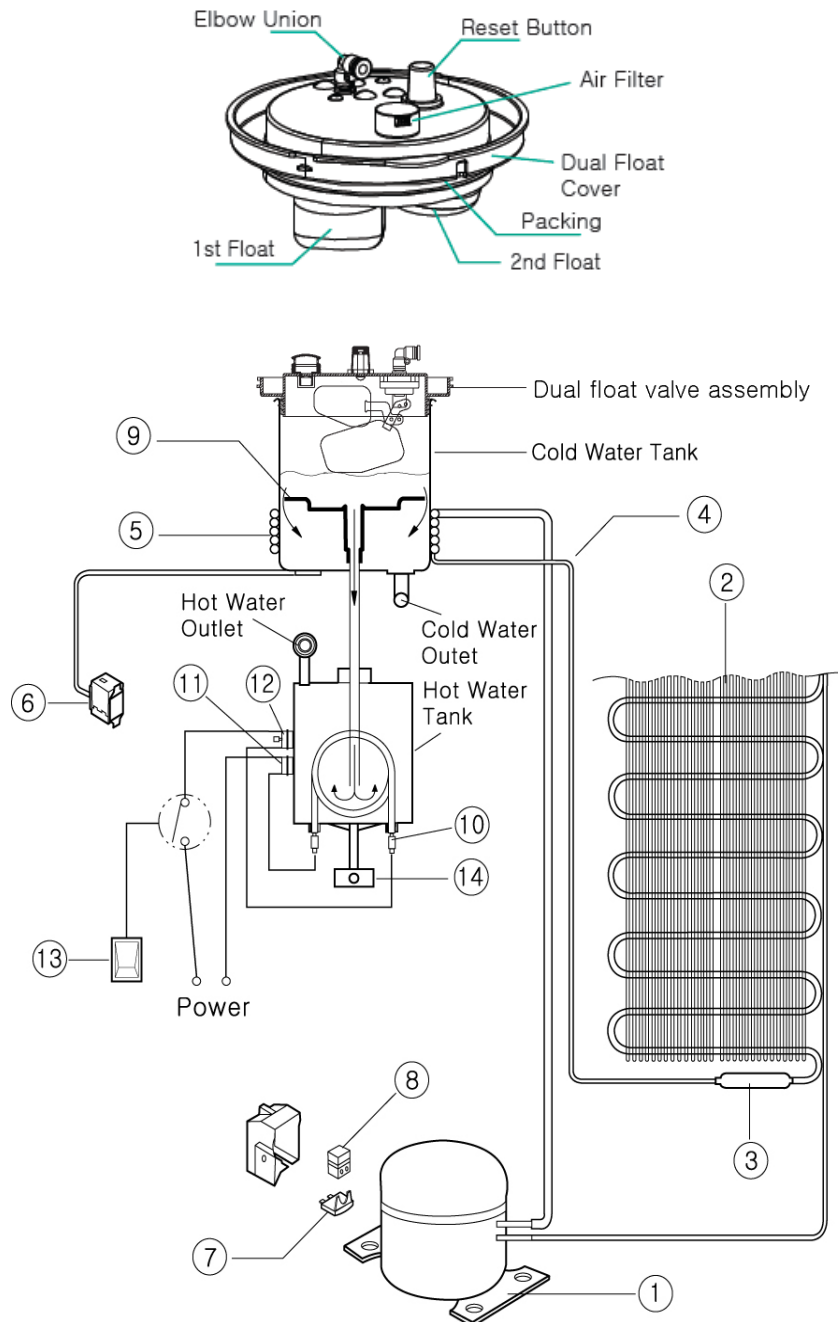
1. SPECIFICATION & PARTS IDENTIFICATION

MODEL		D14A(HOT & COLD)	D14B(COOK & COLD)
DIMENSION		313W×323D×1000H(mm)	
WEIGHT		16kg	15kg
COLD	CONSUMPTION	105W	
	TEMP CONTROL	AUTO	
	TANK	Stainless Steel	
	CAPACITY	3.8 ℓ/h (10°C)	
HOT	CONSUMPTION	440W/465W	
	PROTECTOR	Heat Limiter	
	TEMP. CONTROL	Hot Control	
	TANK	Stainless Steel	
	CAPACITY	7.5 ℓ/h (85°C)	
ELECTRICAL		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.
- ⑮ Dual float valve assembly: Controls the water level of cold water tank. When the primary valve malfunctions, secondary float activates and close the water inflows, preventing damage caused by water leakage.

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.

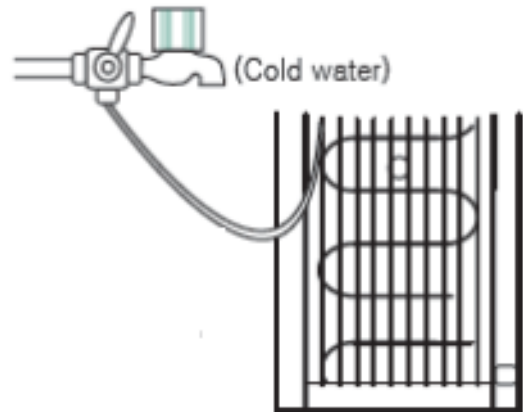
4. INSTALLATION PROCEDURES

- A. Install drip tray below faucet.
- B. Thoroughly clean the dual float valve, the cooling tank and baffle. The dual float valve and 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. Connect the supply water hose to cold water piping of the back of the product.

- Connect the supply water pipe to water inlet at the back of the product.
- Use potable water only.
- Acceptable supply water pressure is 20 ~ 100psi.
- Press reset button if cold water does not flow.
- Once all the requirements above are met, open the tap water valve.



CAUTION: TO PREVENT PROPERTY DAMAGE DUE TO WATER LEAKAGE, SEEK INSPECTION BY PLUMBERS TO SEE THE WATER PRESSURE IS LESS THAN 100PSI (690KPA) BEFORE YOU CONNECT THE SUPPLY WATER HOSE.

- 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.)
- 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.

CAUTION: FAILURE TO ABIDE BY ABOVE PROCEDURE CAN CAUSE PHYSICAL DAMAGE ON THE COOLER.

5. STORAGE

- A. Close off the adapter valve to cut flow from main water pipe.
- B. Switch off hot water switch.
- C. Unplug power cord.
- D. Disconnect the water pipe from the product.
- E. Drain hot water by opening faucet. Then, do the same on cold water faucet.
- F. 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 end of drain pipe. Close draining pipe with cap.

G. 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.)

H. 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 WOULD BE EXTREMELY HOT AND MAY SCALD.

6. CLEANING

A. Close off the adapter valve to cut flow from main water pipe.

B. Switch off hot water switch.

C. Unplug power cord.

D. Disconnect the water pipe from the product.

E. Drain hot water by opening faucet. Then, do the same on cold water faucet.

F. 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 end of drain pipe. Close draining pipe with cap.

G. Remove the dual float valve and baffle parts in cold water tank.

H. Remove faucets from the product. Both faucets are disassembled by turning them counter clockwise.

I. Wear disposable gloves (clean and safe material for drinking water).

J. Wash the faucets, the dual float valve, baffle, drip tray and grid with mild soap and water. Then, rinse them with clean water immediately.

K. Cleanse interior of cold water tank with a clean dish towel.

Do not use bleach or any cleaning agents containing bleach or chlorine.

L. Assemble drip tray, grid, faucets, baffle and the dual float valve.

M. 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 N, O are for Hot & Cold model only.

N. 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.

O. 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.

P. The black static condenser on the rear of the cooler should be cleaned with a small stiff non-wire brush.

Q. Follow Installation Procedures to operate the cooler.

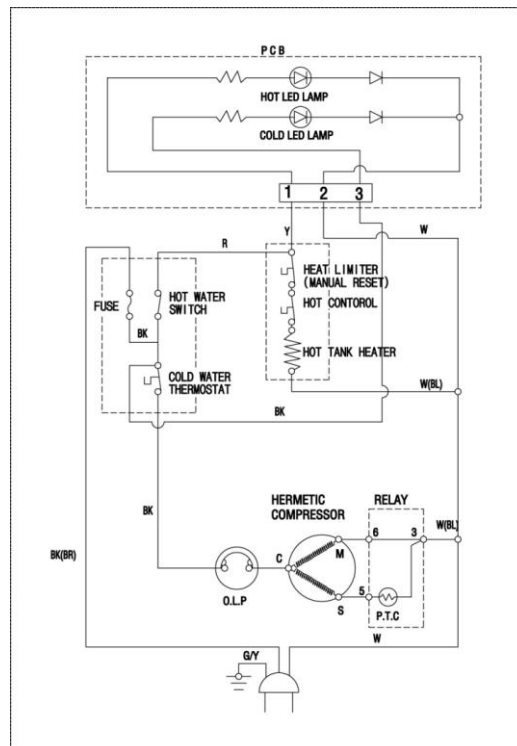
7. TROUBLESHOOTING GUIDE

<u>TROUBLE</u>	<u>POSSIBLE CAUSE</u>	<u>REMEDY</u>
REFRIGERATION SYSTEM		
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.
	The thermostat is defective. (the contacts are shorted or the control is not adjusted properly)	Replace or adjust the thermostat as necessary.
C. The cooler compressor runs continuously, but I do not have cold water.	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 water cooler to prevent restricting the condenser.
	The cold water thermostat is set high or the water cooler is in a high ambient environment.	Check the cold water thermostat setting. Adjust the setting as necessary.
	Usage of the cold water system is greater than the water cooler capacity.	Inform the customer of the cold water system's maximum capacity.
	The refrigeration system is overcharged or undercharged.	Return water cooler to authorized service center or factory for repair.
	There is a partial restriction in the refrigeration system.	

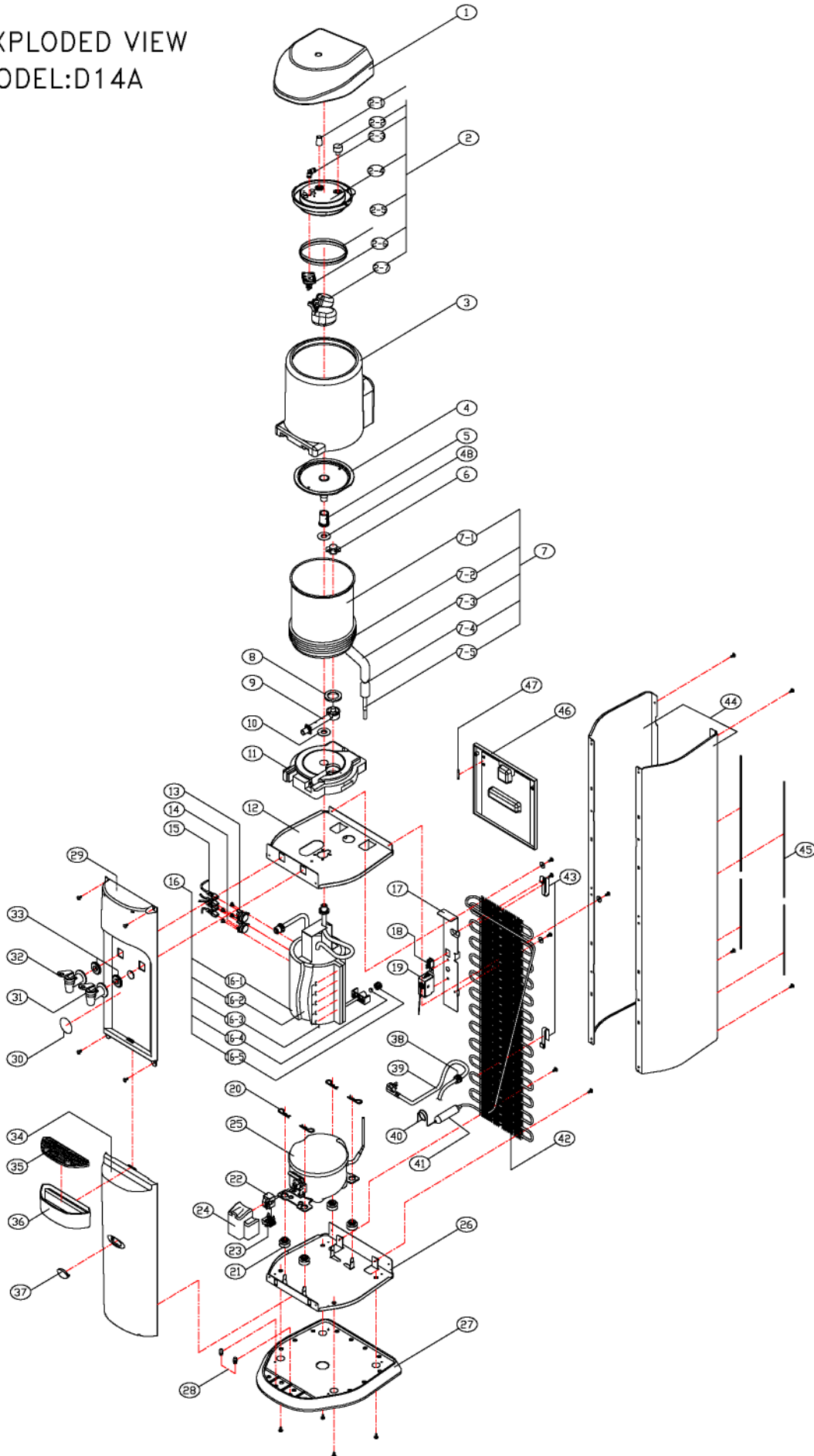
	The compressor is defective.	
E. The water cooler has a short running cycle. It is cooling, but does not run long enough to cool water to the required level.	If wattage readings are normal, the cold water thermostat may be defective.	Replace the cold water thermostat.
	The cold water thermostat is improperly set for the prevailing environmental conditions and water cooler usage.	Adjust the cold water thermostat.
	The compressor motor is defective, causing the watercooler to cycle on the overload protector.	Replace the compressor. Return water cooler to authorized service center or factory for repair.
F. The cold water flows slowly or not at all.	Defective faucet.	Replace faucet assembly.
	The cold water thermostat is so much low, causing ice to build up in the cold tank, blocking water flow.	Defrost water cooler. Adjust the temperature control.
G. Cook water too Cold. (cook & cold models)	If cook water is only occasionally used, cold water will migrate into the cook water system.	This phenomenon can happen under normal condition.
HOT WATER SYSTEM		
A. The hot water is not hot.	If cooler equipped with hot water switch may be OFF.	Turn the hot water switch ON.
	There is a loose or broken wire connection in the hot water system.	Identify the loose or broken wire connection, repair as necessary.
	The hot control is defective.	Replace the hot control.
	The heat limiter is "ON".	Push "Reset" button of heat limiter.
	The hot tank heater is defective.	Replaced the hot tank heater or hot tank assembly.
B. The hot water is hot, but not hot enough.	Usage of the hot water system is greater than its capacity.	Inform the customer of the hot water system's maximum capacity.
	The hot control is defective.	Replace hot control.
C. The hot water flows slowly or not at all.	Hot water flow is designed to flow slowly than cold and cook water to prevent splashing.	Advice the customer of this safety feature.
	Defective faucet.	Replace faucet.
	Hot tank plugged with mineral deposits.	De-lime tank.
D. Hot tank is noisy.	The hot tank heater is caked with mineral deposits.	Slight boiling sound normal during heating cycle. De-lime tank.
NOISE		
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.	Adjust position of the tubing to make sure it is not in contact with any other parts.
	Check the connection of the fixed screws.	Completely connect the fixed screws.
	The compressor's operation is noisy	Advise the customer of the cooler's normal

	because of inherent conditions.	operating sounds.
WATER LEAKAGE		
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.

8. WIRING DIAGRAM

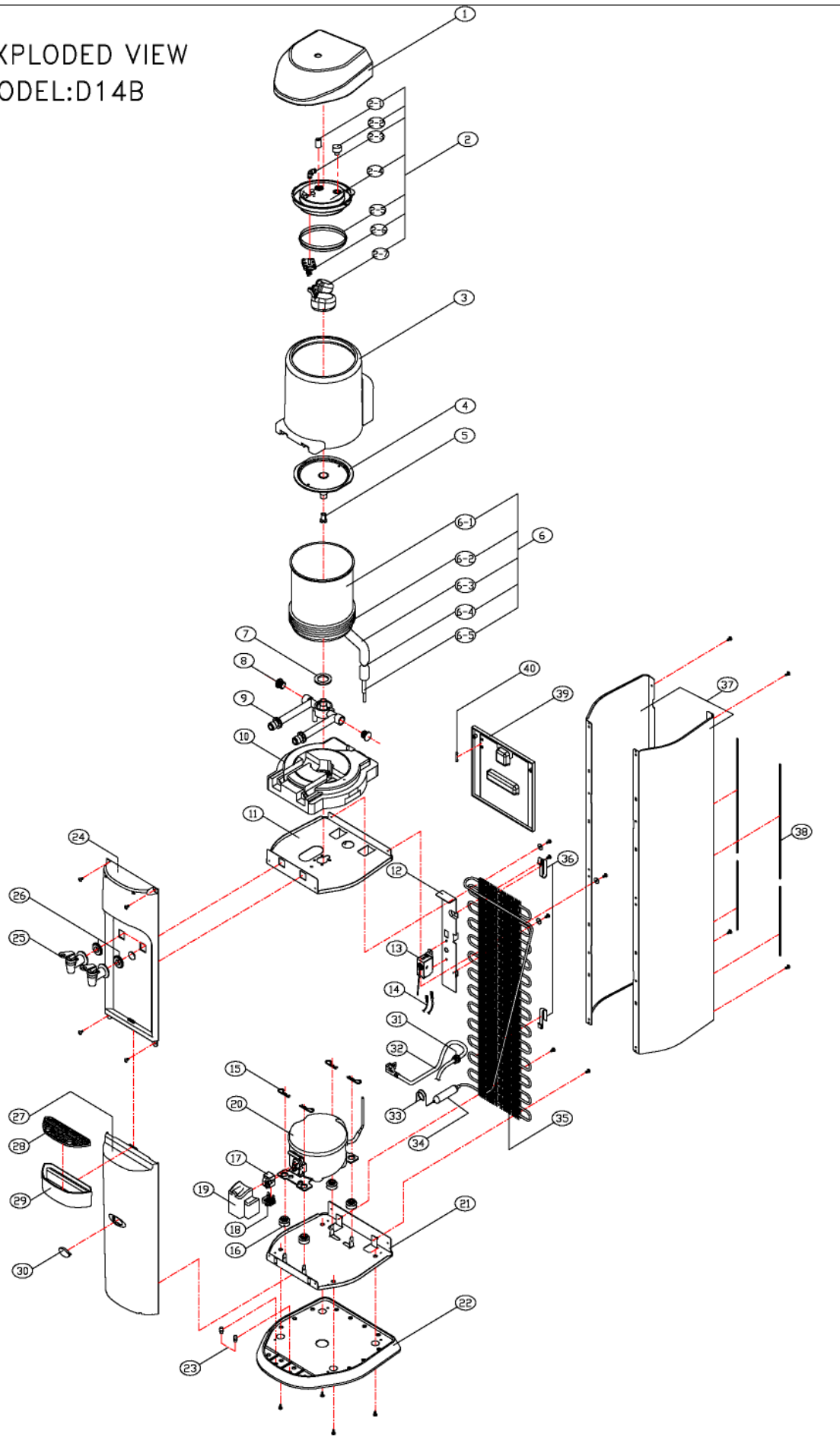


EXPLODED VIEW
MODEL:D14A



D14A SERVICE PARTS LIST				Updated December 30, 2008			
NO	PART NAME	PART NO	Q'TY	NO	PART NAME	PART NO	Q'TY
1	Top Cover(POU)	03-169	1	17	Control Panel	02-073	1
2	Float Valve Ass'y	25-004	1	18	Hot Water Switch	07-002-003	1
2-1	Float Valve RESET Packing	09-052	1	19	Cold Water Thermostat	07-001	1
2-2	Air Filter	08-021	1	20	Split Pin	12-009-001	4
2-3	Elbow Union	10-009-008	1	21	Seat Rubber-Compressor	09-048-002	4
2-4	Float Valve Cover	03-147	1	22	OLP	05-020-003	1
2-5	Packing	09-037-001	1	23	PTC	05-021-003	1
2-6	Float Valve Body	03-144	1	24	PTC Cover	05-022-001	1
2-7	Float Valve	03-145	1	25	Compressor	05-003B-029	1
3	Side Insulation-Cold Water Tank	08-022	1	26	Base-Compressor	02-076-001	1
4	Cold Water Baffle	03-107-001	1	27	Bottom Base	03-153	1
5	Cold Water Tank Fitting Nut	03-066-001	1	28	Front Panel-Lower Seat Rubber	09-055	2
6	Outlet Cold Water Pipe Nut	03-058-001	1	29	Front Panel-Upper	03-149	1
7	Cold Water Tank Ass'y	-	1	30	Hot Water Caution Label	11-006-009	1
7-1	Cold Water Tank	02-003-008	1	31	Cold Faucet Ass'y	23-014A-003A	1
7-2	Evaporator	10-002	1	32	Hot Faucet Ass'y	23-003A-003A	1
7-3	Insulation-Suction Pipe	08-005-004	1	33	Silicon Washer-Faucet	09-003	2
7-4	Cable Tie	17-003	1	34	Front Panel-Lower	03-150	1
7-5	Heat Shrinkable Tube	05-005	1	35	Grid-Drip Tray	03-156	1
8	Silicon-Outlet Pipe	09-001	1	36	Drip Tray	03-155	1
9	Cold Water Outlet Pipe	03-048-001	1	37	Lower-Name Plate	03-158A	1
10	Silicon-Inlet Pipe	09-036	1	38	Cord Bushing	07-006-003	1
11	Lower Insulation-Cold Water Tank	08-023	1	39	Power Cord	07-052-005	1
12	Base-Cold Water Tank	02-075	1	40	Capillary Tube	10-003-001	1
13	Thermal Cut-out (manual bimetal)	07-010-002	1	41	Drier	05-002-001	1
14	Hot Water Thermostat (auto bimetal)	07-009-004	1	42	Wire Condenser	05-008-009	1
15	Wire Ass'y	07-115-002	1	43	Cord Hook	03-159	2
16	Hot Water Tank Ass'y	-	1	44	Side Panel	02-074	2
16-1	Side Insulation-Hot Water Tank	08-004-002	1	45	Protector-Side Panel	03-020-001	4
16-2	Hot Water Tank	21-015F-010E	1	46	Rear Panel	03-154	1
16-3	Heater	06-002A-007	1	47	Spare Fuse	07-003-019	1
16-4	Silicon-Rubber Drain Cap	09-005	1	48	Cold Water Tank Fitting Washer	03-163	1
16-5	Drain Cap Hot Water	03-031	1				

EXPLODED VIEW
MODEL:D14B



D14B SERVICE PARTS LIST				Updated December 30, 2008			
NO	PART NAME	PART NO	Q'TY	NO	PART NAME	PART NO	Q'TY
1	Top Cover(POU)	03-169	1	15	Split Pin	12-009-001	1
2	Float Valve Ass'y	25-004	1	16	Seat Rubber-Compressor	09-048-002	4
2-1	Float Valve Reset Packing	09-052	1	17	OLP	05-020-003	1
2-2	Air Filter	08-021	1	18	PTC	05-021-003	1
2-3	Elbow Union	10-009-008	1	19	PTC Cover	05-022-001	1
2-4	Float Valve Cover	03-147	1	20	Compressor	05-003B-029	1
2-5	Packing	09-037-001	1	21	Base-Compressor	02-076-001	1
2-6	Float Valve Body	03-144	1	22	Bottom Base	03-153	1
2-7	Float Valve	03-145	1	23	Front Panel-Lower Seat Rubber	09-055	2
3	Side Insulation-Cold Water Tank	08-022	1	24	Front Panel-Upper	03-149	1
4	Cold Water Baffle	03-107-001	1	25	Faucet Ass'y	23-015A-010D 23-016A-010D	2
5	Cold Water Tank Fitting Nut	03-067	1	26	Silicon Washer-Faucet	09-003	2
6	Cold Water Tank Ass'y	-	1	27	Front Panel-Lower	03-150	1
6-1	Cold Water Tank	02-003-010	1	28	Grid-Drip Tray	03-156	1
6-2	Evaporator	10-002	1	29	Drip Tray	03-155	1
6-3	Insulation-Suction Pipe	08-005-004	1	30	Lower-Name Plate	03-158B	1
6-4	Cable Tie	17-003	1	31	Cord Bushing	07-006-003	1
6-5	Heat Shrinkable Tube	05-005	1	32	Power Cord	07-052-005	1
7	Silicon-Outlet Pipe	09-001	1	33	Capillary Tube	10-002	1
8	Plug-Patition Tube	09-039	2	34	Drier	05-002-001	1
9	Patition Tube	03-113	1	35	Wire Condenser	05-008-009	1
10	Lower Insulation-Cold Water Tank	08-023-001	1	36	Cord Hook	03-159	2
11	Base-Cold Water Tank	02-075	1	37	Side Panel	02-074	2
12	Control Panel	02-073	1	38	Protector-Side Panel	03-020	4
13	Cold Water Thermostat	07-001	1	39	Rear Panel	03-154	1
14	Wire Ass'y	07-116	1	40	Spare Fuse	07-003-019	1