



WE Series

Water to Water Heat Pumps

Installation, Operating & Maintenance Instructions

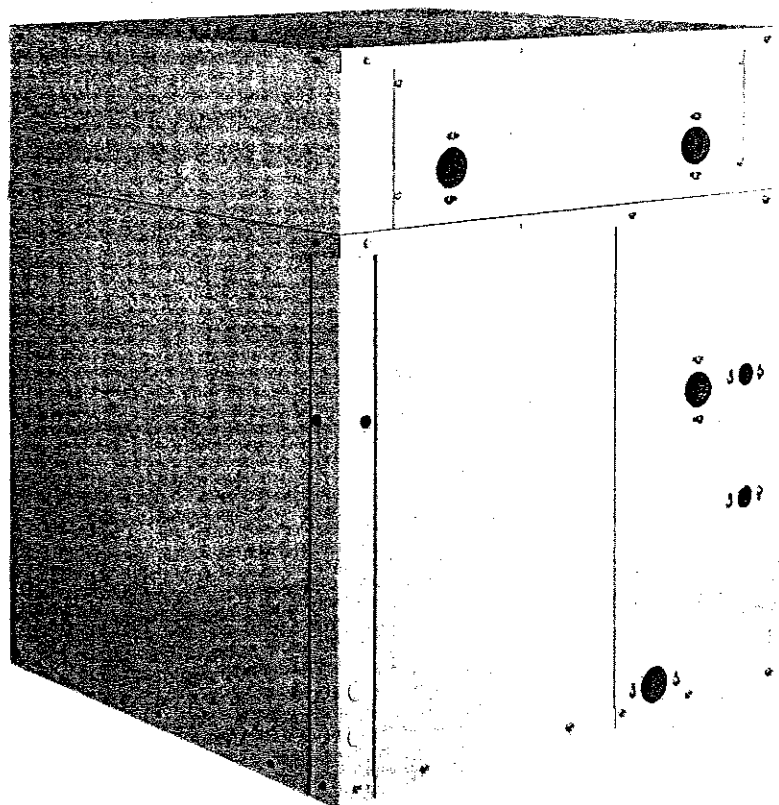


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GENERAL INFORMATION

Inspection

Upon receipt of shipment at the job site, carefully check the shipment against the bill of lading. Make sure all units have been received. Inspect the carton or crating of each unit and inspect each unit for damage. Assure that the carrier makes proper notation of any shortages or damage on all copies of the freight bill and that he completes a Carrier Inspection Report. Concealed damage not discovered during unloading must be reported to the carrier within 15 days of receipt of shipment. **NOTE: It is the responsibility of the purchaser to file all necessary claims with the carrier.** Notify the ClimateMaster Traffic Department of all damage within fifteen (15) days of shipment.

Introduction

This Installation and Operation Manual is for Climate Master Water to Water Heat Pump units (WE).

ClimateMaster WE units are typically installed in a floor level closet or in a mechanical room. The installation site chosen for these units must allow adequate clearance for maintenance and servicing of the unit without its removal from the installation location.

Electrical data is provided in the *Installation* section of this manual. Refer to project submittal drawings for specific unit technical data and wiring diagrams.

Storage

CAUTION: DO NOT store or install Water to Water units in corrosive environments or in locations subject to temperature or humidity extremes (e.g., attics, garages, rooftops, etc.). Corrosive conditions and high temperature or humidity can significantly reduce performance, reliability, and service life. Always move units in an upright position. Tilting units on their sides may cause equipment damage.

Upon the arrival of equipment at the job site, immediately store units in their shipping cartons in a clean, dry area. **Store units in an upright position at all times.** Stack Water to Water units a maximum of 3 units high. **Do not remove equipment from shipping cartons until equipment is required for installation.**

Unit Protection

Cover units on the job site with either shipping cartons, vinyl film, or an equivalent protective covering. Cap the open ends of pipe stored on the job site. In areas where painting, plastering, or the spraying of fireproof material

has not been completed, all due precautions must be taken to avoid physical damage to the units and contamination by foreign material. Physical damage and contamination may prevent proper start-up and may result in costly equipment clean-up.

Examine all pipes, fittings, and valves before installing any of the system components. Remove any dirt found on these components.

Pre-Installation

Installation, operation and maintenance instructions are provided with each unit. Before unit start-up, read all manuals and become familiar with the unit and its operation. Thoroughly check out the system before operation.

Prepare Water to Water units for installation as follows:

1. Compare the electrical data on the unit nameplate with ordering and shipping information to verify that the correct unit has been shipped.
2. Keep the unit covered with the shipping carton until installation is complete and all plastering, painting, etc. is finished.
3. Verify that refrigerant tubing is free of kinks or dents, and that it does not touch other unit components.
4. Inspect all electrical connections. Connections must be clean and tight at the terminals.
5. Loosen compressor bolts on units equipped with external spring vibration isolations until the compressor rides freely on the springs. Remove shipping restraints. Note: Compressors on all WE units are internally spring mounted for quiet operation.

▲ WARNING

To avoid equipment damage, do not use these units as a source of heating or cooling during the construction process. The mechanical components and filters used in these units quickly become clogged with construction dirt and debris which may cause system damage.

To avoid the release of refrigerant into the atmosphere, the refrigerant circuit of this unit must only be serviced by technicians which meet local, state and federal proficiency requirements.

All refrigerant discharged from this unit must be recovered without exception. Technicians must follow industry accepted guidelines and all local, state and federal statutes for the recovery and disposal of refrigerants.

When a compressor is removed from this unit, system refrigerant circuit oil will remain in the compressor. To avoid leakage of compressor oil, the refrigerant lines of the compressor must be sealed after it is removed.

Water to Water Units are typically installed in a floor level closet or a mechanical room. Install units with adequate clearance to allow maintenance and servicing. Follow the guidelines below when selecting unit location.

1. Provide an unobstructed path to the unit within the closet or mechanical room to enable access to the unit for servicing or for the removal of the unit if necessary.
2. Provide access to water valves and fittings and screwdriver access to unit panels and electrical connections.

INSTALLATION

The installation of Water to Water Heat Pump units and all associated components, parts and accessories that make up the installation shall be in accordance with the regulations of ALL Authorities having jurisdiction and MUST conform to all applicable Codes. It is the responsibility of the Installing Contractor to determine and comply with ALL applicable Codes and Regulations.

Installation of Supply and Return Piping

Follow these piping guidelines.

CAUTION: Piping must comply with all applicable Codes.

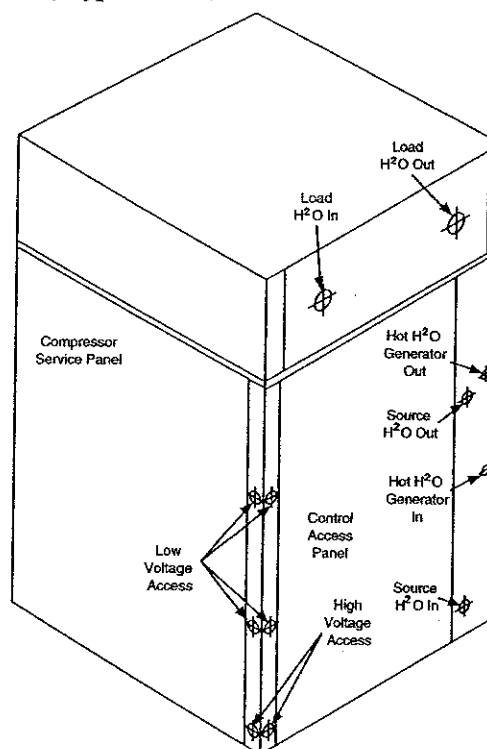
1. Install a drain valve at the base of each supply and return riser to facilitate system flushing.
2. Install shut-off/balancing valves and unions at each unit to permit unit removal for servicing.
3. Place strainers at the inlet of each system circulating pump.
4. Select the proper hose length to allow slack between connection points. Hoses may vary in length by +2% to -4% under pressure.
5. Refer to Table 1. Do not exceed the minimum bend radius for the hose selected. Exceeding the minimum bend radius may cause the hose to collapse which reduces water flow rate. Install an angle adapter to avoid sharp bends in the hose when the radius falls below the required minimum.

Insulation may be required on loop water piping (source side). Because loop temperature is normally between 40°F and 110° F, piping can sweat and suffer heat loss in

Table 1- Metal Hose Minimum Bend Radii

Hose in Inches	Minimum Bend Radius
1/2	2-1/2
3/4	4
1	5-1/2
1-1/4	6-3/4

Figure 1, Typical WE Unit



normal ambient conditions should the temperature of the piping fall below dew point (when the unit is used as a chiller) or when it is considerably above ambient temperature (when the unit is used as a boiler).

Pipe joint compound is not necessary when Teflon threaded tape is pre-applied to hose assemblies or when flared-end connections are used. If pipe joint compound is preferred, use compound only in small amounts on the male pipe threads of the fitting adapters. Prevent sealant from reaching the flared surfaces of the joint.

NOTE: When an anti-freeze solution is used in the system, the contractor must assure that the anti-freeze is compatible with any pipe joint compound or tape used on the piping or hose connections.

Maximum allowable torque for brass fittings is 30 foot-pounds. If a torque wrench is not available, tighten finger-tight plus one quarter turn. Tighten steel fittings as necessary.

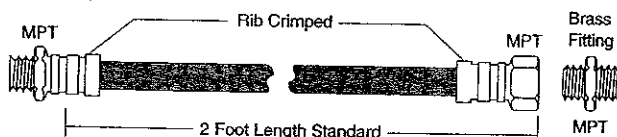
⚠ WARNING

Do not bend or kink supply lines or hoses.

Optional pressure-rated hose assemblies designed specifically for use with ClimateMaster units are available. Supply and return hoses are fitted with swivel-joint fittings at one end to prevent kinking during installation.

Refer to Figure 2 for an illustration of a Supply/Return Hose Kit. Male adapters secure hose assemblies to the unit and risers. Install hose assemblies properly and check them regularly to avoid system failure, reduced service life and possible damage to surrounding furniture and carpets.

Figure 2- Supply/Return Hose Kit



CAUTION: Corrosive system water requires corrosion-resistant fittings and hoses and may require water treatment.

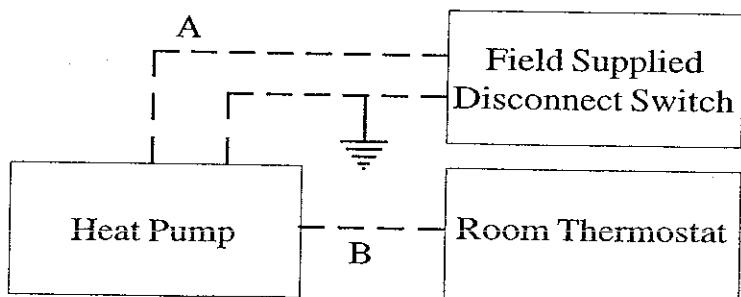
WE units are typically installed on the floor or on shelves designed to support the weight of the unit. Install the unit on a piece of rubber or neoprene for sound isolation. The pad should be 3/8" to 1/2" in thickness. Extend the pad beyond all four edges of unit.

Typical Field Installed Wiring

CAUTION: USE COPPER CONDUCTORS ONLY TO PREVENT EQUIPMENT DAMAGE.

⚠ WARNING

DISCONNECT ELECTRICAL POWER SOURCE TO PREVENT INJURY OR DEATH FROM ELECTRICAL SHOCK.



A= Two power wires on single-phase units; three power wires on three-phase units. B= 1 heat /1 cool /manual or Auto Change-over remote 24V thermostat. Note: All customer-supplied wiring to be copper only and must conform to NEC and local electrical codes. Wiring shown with dashed lines must be field-supplied and field-installed.

Electrical Wiring

⚠ WARNING

To avoid possible injury or death due to electrical shock, open the power supply disconnect switch and secure it in an open position during installation.

CAUTION: Use only copper conductors for field installed electrical wiring. Unit terminals are not designed to accept other types of conductors.

All field installed wiring, including electrical ground, must comply with the National Electrical Code as well as all applicable local codes. In addition, all field wiring must conform to Class II temperature limitations described in the NEC.

Refer to the unit wiring diagrams included with submittal drawings for fuse sizes and a schematic of the field connections which must be made by the installing (or electrical) contractor.

Consult the unit wiring diagram located on the inside of the compressor access panel to ensure proper electrical hookup.

Units rated 208-230 volts that have a 24 volt transformer must have the transformer connection modified if the actual power supply is 208 volts. Refer to the unit wiring diagram for details of this procedure.

All final electrical connections must be made with a length of flexible conduit to minimize vibration and sound transmission to the building.

For additional wiring information pertinent to units supplied with solid state controls, a ClimateMaster CMC-2000 Ver 8.9 Series Installation, Operation and Maintenance Manual (p/n 69626515) is supplied with this unit.

Operating Limits

Environment - This unit is designed for indoor installation ONLY.

Power Supply - A voltage variation of +/- 10% of nameplate utilization voltage is acceptable. Three-phase system imbalance shall not exceed 2%.

WE units start and operate with entering water at 40° F, and with water at the stated flow rates for initial winter start-up

NOTES

1. These are not normal or continuous operating conditions. It is assumed that winter start-up is to bring the building space up to occupancy temperatures.

2. Voltage utilization range complies with ARI Standard 110.

Table 2- Water Limits

Source Side Water Limits	Cooling	Heating
Min. Entering Water	40° F	25° F
Normal Entering Water	85° F	60° F
Max Entering Water	110° F	80° F
Load Side Water Limits		
Min. Entering Water	40° F	50° F
Normal Entering Water	50° F	100° F
Max Entering Water	80° F	120° F

START-UP PREPARATION

Boiler/Cooling Tower System Cleaning and Flushing

Cleaning and flushing the unit is the single most important step to ensure proper start-up and continued efficient operation of the system.

Follow the instructions below to properly clean and flush the system:

⚠ WARNING

To prevent injury or death due to electrical shock or contact with moving parts, open unit disconnect before servicing unit.

1. Verify that electrical power to the units is disconnected.
2. Install the system with the supply hose connected directly to the return riser valve. Use a single length of flexible hose.
3. Open all air vents. Fill the system with water. Do not allow system to overflow. Bleed all air from the system. Check the system for leaks and repair appropriately.
4. Verify that all strainers are in place. Start the pumps and systematically check each vent to ensure that all air is bled from the system.
5. Verify that make-up water is available. Adjust make-up water appropriately to replace the air which was bled from the system. Check and adjust the water/air level in the expansion tank.
6. Set the WE Unit to raise the loop temperature to approximately 85° F. Open a drain at the lowest point in the system. Adjust the make-up water replacement rate to equal the rate of bleed.

7. Refill the system and add trisodium phosphate in a proportion of approximately one pound per 150 gallons of water. Reset the WE Unit to raise the loop temperature to about 100° F.

CAUTION: To avoid possible damage to piping systems constructed of plastic piping, DO NOT allow loop temperature to exceed 110° F. Because of possible high load side winter temperatures, do not use plastic pipe on the load side of the unit.

Circulate the solution for a minimum of eight to 24 hours. At the end of this period, shut off the circulating pump and drain the solution. Repeat system cleaning if desired.

8. When the cleaning process is complete, remove the short-circuited hoses. Re-connect the hoses to the proper supply and return the connections to each of the Water to Water units. Refill the system and bleed off all air.
9. Test the system pH with litmus paper. The system water should be slightly alkaline (pH 7.5 to 8.5). Add chemicals as appropriate to maintain acidity levels.

CAUTION: DO NOT use "Stop-Leak" or any similar chemical agent in this system. Addition of these chemicals to the loop water will foul the system and will inhibit unit operation.

10. When the system is successfully cleaned, flushed, refilled and bled, check the main system panels, safety cutouts, and alarms. Set the controls to properly maintain loop temperatures.

Optional Hot Water Generator

When the unit is equipped with an optional hot water generator it will contain a coaxial tube-in-tube, vented double-wall heat exchanger.

CAUTION: To avoid equipment damage, do not seal the vents located at each end of the coaxial coil.

Two (2) FPT connections are located on the front of the unit labeled "HWG IN" and "HWG OUT" which connect to the hot water generator.

Connect the heat exchanger as follows:

- 1) Plumb the unit to the water tank as described in the ClimateMaster Geo-Thermal Heat Pump Manual Volume 3.

- 2) Fill the system with water.
- 3) Purge the system of air.
- 4) Connect the blue wire to terminal 5 of the low voltage terminal board to activate the circulating pump. The circulating pump cycles with the compressor when there is a demand for hot water.

CAUTION: To avoid damage to the circulating pump, do not connect the wire until plumbing is complete and the system is purged of air and filled with water.

UNIT START-UP

Use the procedure outlined below to initiate proper unit start-up:

▲ WARNING

When the disconnect switch is closed, high voltage is present in some areas of the electrical panel. Exercise caution when working with energized equipment.

1. Adjust all valves to their full open position. Turn on the line power to all heat pump units.
2. Operate each unit in the cooling cycle. Loop water temperature entering the heat pumps should be between 70° F and 110° F.
3. Operate each heat pump in the heating cycle immediately after checking cooling cycle operation. A time delay will prevent the compressor from re-starting for approximately five (5) minutes..
4. Establish a permanent operating record by logging the unit operating conditions at initial start-up for each unit.
5. If a unit fails to operate, conduct the following checks:
 - a. Check the voltage and current. They should comply with the electrical specifications described on the unit nameplate.
 - b. Look for wiring errors. Check for loose terminal screws where wire connections have been made on both the line and low-voltage terminal boards.
 - c. Check the supply and return piping. They must be properly connected to the inlet and outlet connections on the unit.
 - d. If the checks described above fail to reveal the problem and the unit still will not operate, contact a trained service technician to ensure proper diagnosis and repair of the equipment.

MAINTENANCE

Maintenance Procedures

Perform the maintenance procedures outlined below periodically as indicated.

▲ WARNING

To prevent injury or death due to electrical shock or contact with moving parts, open unit disconnect switch before servicing unit.

UNIT AMPERAGE: Conduct amperage checks annually. Amperage draw should not exceed normal full load or rated load amps by more than 10 percent of the values noted on the unit nameplate. Maintain a log of

amperage values to detect deterioration prior to component failure.

UNIT INSPECTION: Visually inspect the unit annually. Pay special attention to hose assemblies. Repair any leaks and replace deteriorated hoses immediately.

COMPRESSOR: Conduct an amperage check on the compressor annually. Amperage draw should not exceed normal full load or rated load amps by more than 10 percent of the values noted on the unit nameplate. Maintain a log of amperage values to detect deterioration prior to component failure.

HEAT EXCHANGERS: Clean heat exchangers annually. Inspect heat exchangers regularly and clean

more frequently if the unit is located in a "dirty" environment.

Safety Control Reset

All ClimateMaster Water to Water units are furnished with high and low pressure cutouts to prevent the machine from operating at abnormal or damaging temperature or water flow conditions.

The contacts of the high-pressure control used on Water to Water units are designed to open at 380 psig and automatically close at 300 psig. The contacts of the low-pressure switch open at 10 psig and close at 32 psig. The

contacts of the low-temperature switch open at 21° F and close at 31° F. A lockout relay, electrically linked with these cutouts, interrupts unit operation. The unit must be reset manually.

NOTE: If the unit must be reset more than twice, check the unit for abnormal entering water temperature, inadequate or excessive water flow and internal malfunction. If the unit continues to cutout, contact a trained service technician.

CLOSED LOOP EARTH COUPLED APPLICATIONS

Introduction

CAUTION: The following instructions represent industry accepted installation practices for Closed Loop Earth Coupled Heat Pump Systems. They are provided to assist the contractor in installing trouble free ground loops. These instructions are recommendations only. State and Local Codes MUST be followed and installations MUST conform to all applicable Codes. It is the responsibility of the Installing Contractor to determine and comply with ALL applicable Codes and Regulations.

Closed Loop Earth Coupled Heat Pump systems are commonly installed in one of three configurations: horizontal, vertical or pond loop. Each configuration provides the benefit of using the moderate temperature of the earth as a heat source/heat sink. Piping configurations can be either series or parallel.

Series piping configurations typically use 1-1/4", 1-1/2" or 2" pipe. Parallel piping configurations typically use 3/4" or 1" pipe for loops and 1-1/4", 1-1/2" or 2" pipe for headers and service lines. Parallel configurations require headers to be either "closed-coupled" short headers or reverse return design.

Select the installation configuration which provides the most cost effective method of installation after considering all application constraints.

Refer to IGSHPA publication *Closed Loop/Ground Source Heat Pump Systems Installation Guide* (Sections 4-6) for complete ground loop design, materials requirements and joining information.

Pre-Installation

Prior to installation, locate and mark all existing underground utilities, piping, etc. Install loops for new construction before sidewalks, patios, driveways and

other construction has begun. During construction, accurately mark all ground loop piping on the plot plan as an aid in avoiding potential future damage to the installation.

Horizontal Applications

To install Horizontal earth couplings, dig trenches using either a chain-type trenching machine or a backhoe. Dig trenches approximately 5 feet apart. Trenches must be at least 5 feet from existing utility lines, foundations and property lines and at least 10 feet from privies and wells. Trenches may be curved to avoid obstructions and may be turned around corners.

When multiple pipes are laid in a trench, space pipes properly and backfill carefully to avoid disturbing the spacing of the pipes in the trench.

Vertical Applications

To install Vertical earth couplings, drill boreholes using any size drilling equipment. Regulations which govern water well installations also apply to vertical ground loop installations. Vertical applications typically require multiple boreholes. Space boreholes a minimum of 10 feet apart.

Unless other requirements are mandated by code, use the following guideline when locating boreholes:

- 5 feet from foundations and lot lines
- 10 feet from utility lines and drain fields
- 20 feet from non-public wells
- 50 feet from public wells
- 100 feet from cesspools, feedlots, lagoons, privies, seepage pits and septic tanks.

The minimum diameter for 3/4" or 1" U-bend well bores is 4 inches. Larger diameter boreholes may be drilled if convenient unless local code requires an expensive method of backfilling. Assemble each U-bend assembly, fill with water and pressure test prior to insertion into the borehole.

To add weight and prevent the pipe from curving and digging into the borehole wall during insertion, tape a length of conduit, pipe or reinforcing bar to the U-bend end of the assembly. This technique is particularly useful when inserting the assembly into a borehole filled with water or drilling mud solutions, since a water filled U-bend assembly is somewhat buoyant under these circumstances. Tape the pipes together approximately every 10 feet to prevent the assembly from separating under downward pressure and bowing out against the borehole wall.

Carefully backfill the boreholes to within 10 feet of the surface. Follow IGSHPA specifications for backfilling unless local codes mandate otherwise.

When all U-bends are installed, dig the header trench 4 to 6 feet deep and as close to the boreholes as possible. Use a spade to break through from ground level to the bottom of the trench. At the bottom of the trench, dig a relief to allow the pipe to bend for proper access to the header.

Building Entry

Seal and protect the entry point of the earth coupling into the building as shown in Figures 4-7 below.

Slab on Grade Construction

New Construction: When possible, position the pipe in the proper location prior to pouring the slab. To prevent wear as the pipe expands and contracts, protect the pipe with a layer of insulation as shown in Figure 4. When the slab is poured prior to installation, create a chase through the slab for the service lines with 4" PVC street elbows and sleeves. Refer to Section 4 of the IGSHPA manual for details.

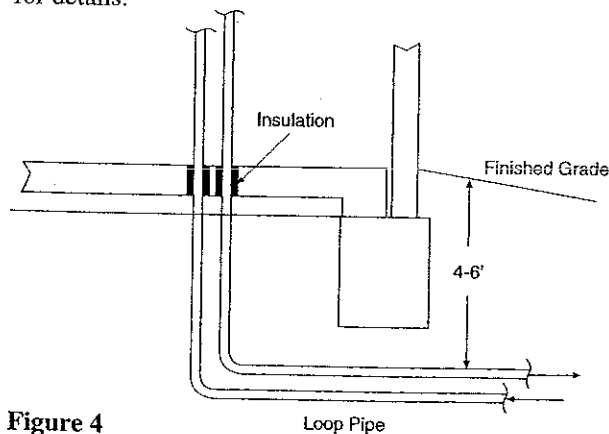


Figure 4

Retrofit Construction: Trench as close as possible to the footing. Bring the loop pipe up along the outside wall of the footing until it is higher than the slab. Enter the building as close to the slab as the construction allows. Shield and insulate the pipe to protect it from damage and the elements as shown in Figure 5.

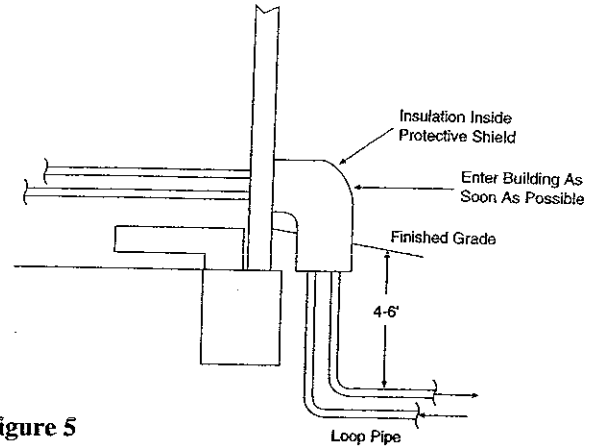


Figure 5

Pier and Beam (crawl space)

New and Retrofit Construction: Bury the pipe beneath the footing and between piers to the point that it is directly below the point of entry into the building. Bring the pipe up into the building. Shield and insulate piping as shown in Figure 6 to protect it from damage.

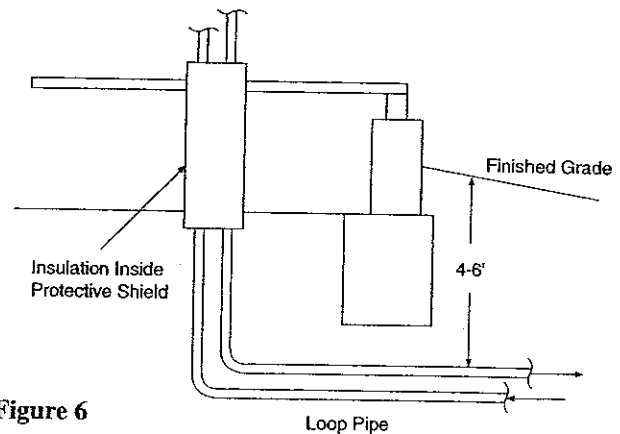


Figure 6

Below Grade Entry

New and Retrofit Construction: Bring the pipe through the wall as shown in Figure 7. For applications in which loop temperature may fall below freezing, insulate pipes at least 4 feet into the trench to prevent ice forming near the wall.

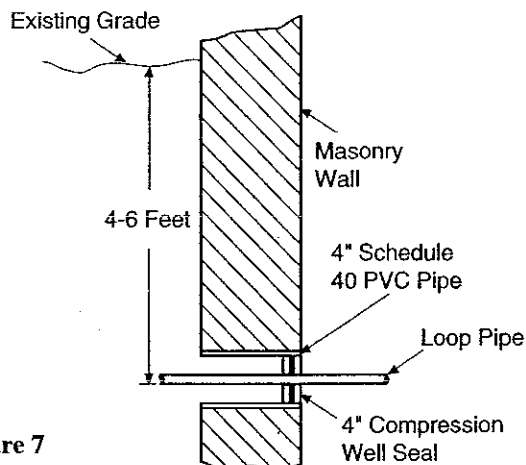


Figure 7

Loop Testing

Upon completion of the ground loop piping, pressure test the loop to assure a leak free system.

Parallel systems: Test Parallel systems as each leg is completed. Test again prior to the connection of the headers. Test the system for a final time when the entire loop is assembled and all legs are attached.

Series Systems: Test individual loops as installed. Test entire system when all loops are assembled.

Horizontal Systems: Test individual loops as installed. Test entire system when all loops are assembled.

Vertical U-Bends and Pool Loop systems: Test Vertical U-bends and pond loop assemblies prior to installation with a test pressure of at least 100 psi. Either water or air may be used as the testing medium.

Flushing and Purging

Upon completion of system installation and testing, flush the system to remove all foreign objects and purge to remove all air. See Table 3 below for approximate fluid volumes.

Table 3- Approximate Fluid Volume per 100' of Pipe

Size	Pipe	Volume (Gallons)
1"	Copper	4.1
1.25"	Copper	6.4
.75" Schedule 40	Polyethylene	2.77
.75" SDR-11	Polyethylene	3.01
1" Schedule 40	Polyethylene	4.49
1" SDR-11	Polyethylene	4.73
1.25" Schedule 40	Polyethylene	7.7
1.5" Schedule 40	Polyethylene	10.575
2" Schedule 40	Polyethylene	17.4

Refer to Section 7 of the IGSHPA manual for more information on flushing and purging Closed Loop Earth Coupled Systems.

Add antifreeze if necessary. Refer to the IGSHPA manual for the correct type and amount of antifreeze to add.

⚠ WARNING

DO NOT use calcium chloride in ClimateMaster units. The use of calcium chloride voids the equipment warranty.

Flushing, Purging, Adding Anti-Freeze and Pressurizing the System

Refer to GEO-EZ Pumping Module Series IOM (document number 70-MI110-9410) for complete instructions on flushing, purging, adding anti-freeze and pressurizing the system.



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Part No. 69197309

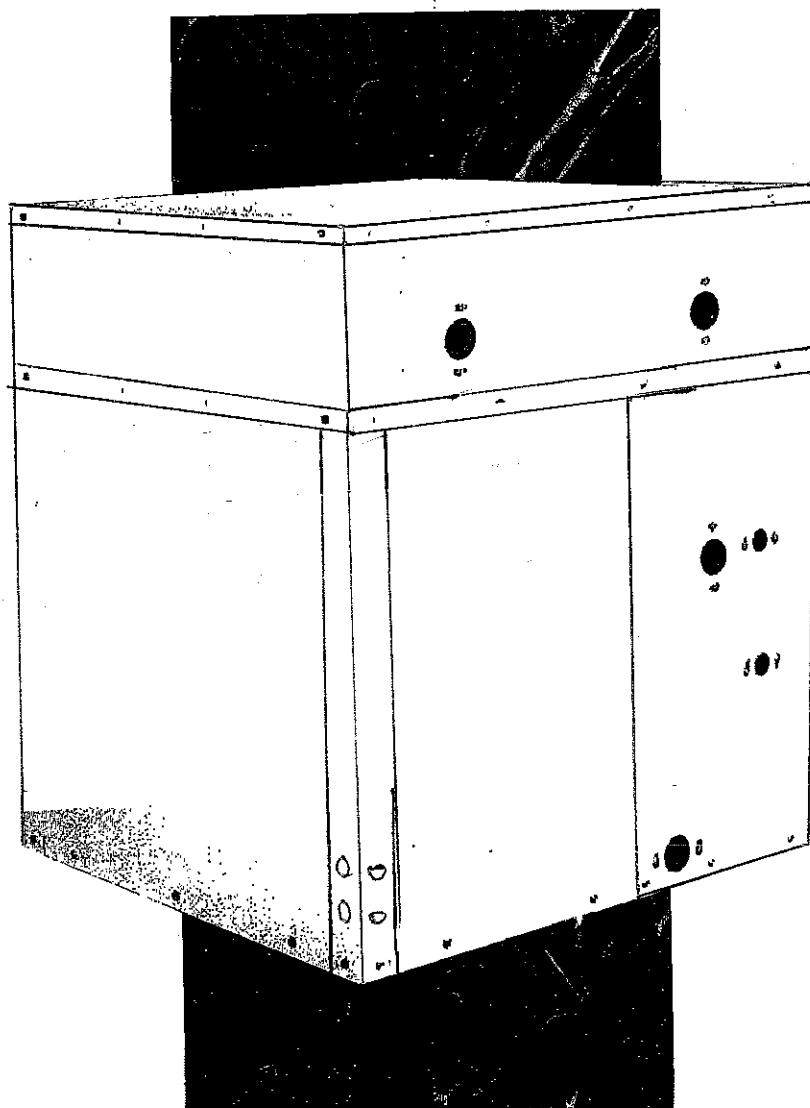
ClimateMaster works continually to improve its products. As a result, the design and specifications of each product at the time for order may be changed without notice and may not be as described herein. Please contact ClimateMaster's Customer Service Department at 1-405-745-6000 for specific information on the current design and specifications. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely ClimateMaster's opinion or commendation of its products.

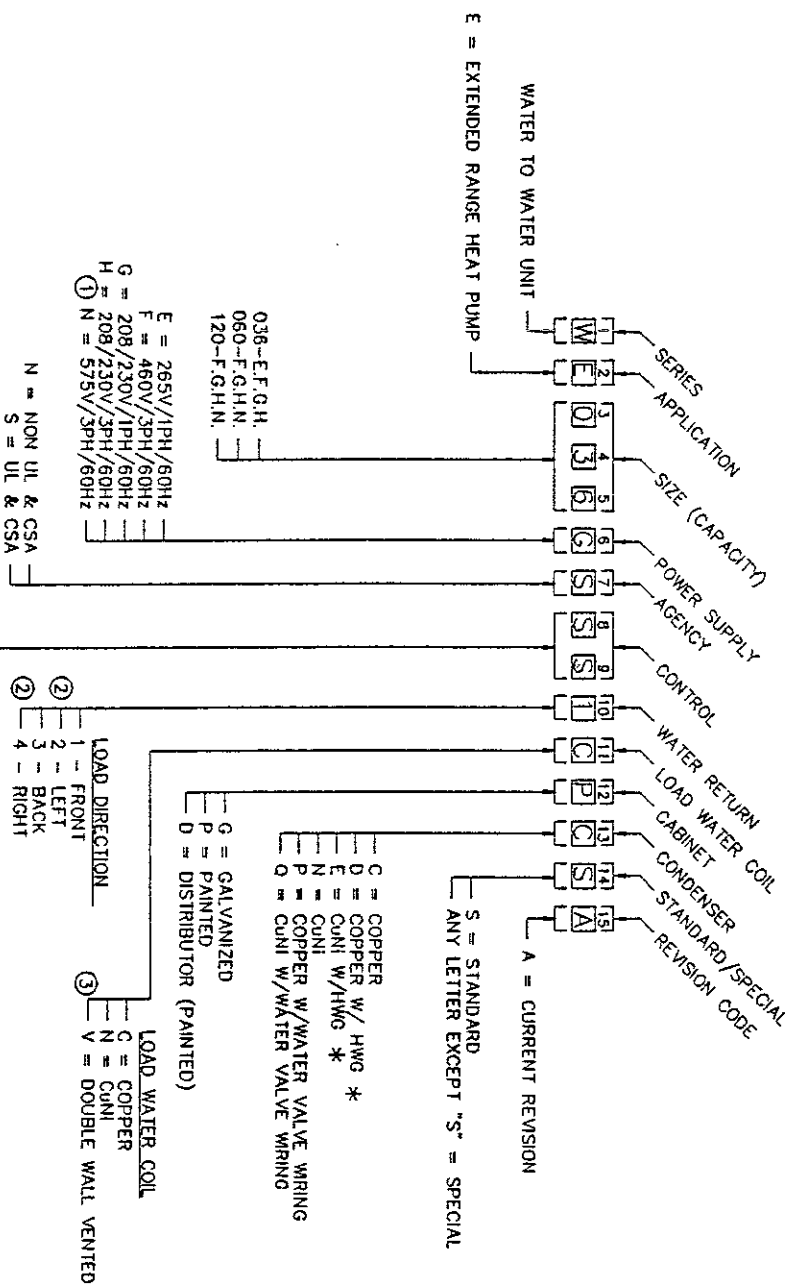
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Rev. 4/97

WATER TO WATER SERIES





AN = RANDOM START
AP = PROGRAM RELAY 24V
AV = SERVICE SIGNAL TO T'STAT
SS = STANDARD CONTROLS
AG = ANTI-SHORT-CYCLE TIMER
(STANDARD ON DISTRIBUTOR MODELS)

NOTES:

1. 575/3PH/60HZ IS NON-UL.
2. NOT AVAILABLE ON WE120.
3. "V" OPTION NOT AVAILABLE ON WE036.

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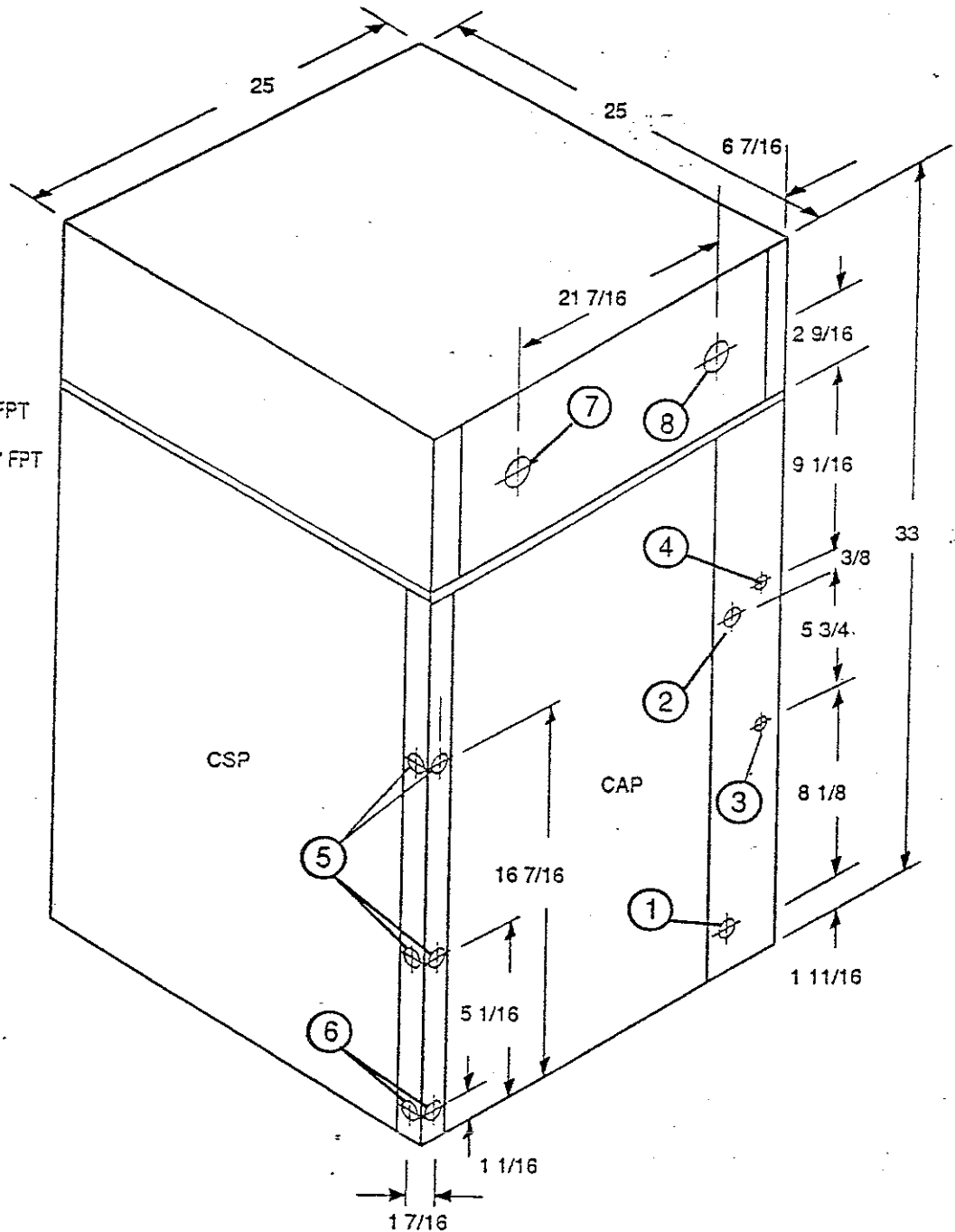
Dimensions Model WE 036

Contractor: _____ P.O.: _____
 Engineer: _____
 Project Name: _____ Unit Tag: _____

WE 036 Water To Water Unit

NOTES:

- 1 - Source Water In - 1" FPT
- 2 - Source Water Out - 1" FPT
- 3 - Hot Water Generator In - 1/2" FPT
- 4 - Hot Water Generator Out - 1/2" FPT
- 5 - Low Voltage Access - 1/2" KO
- 6 - High Voltage Access - 7/8" KO
- 7 - Load Water In - 1" FPT
- 8 - Load Water Out - 1" FPT
- CSP - Compressor Service Panel
- CAP - Control Access Panel



Dimensions Model WE 060

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

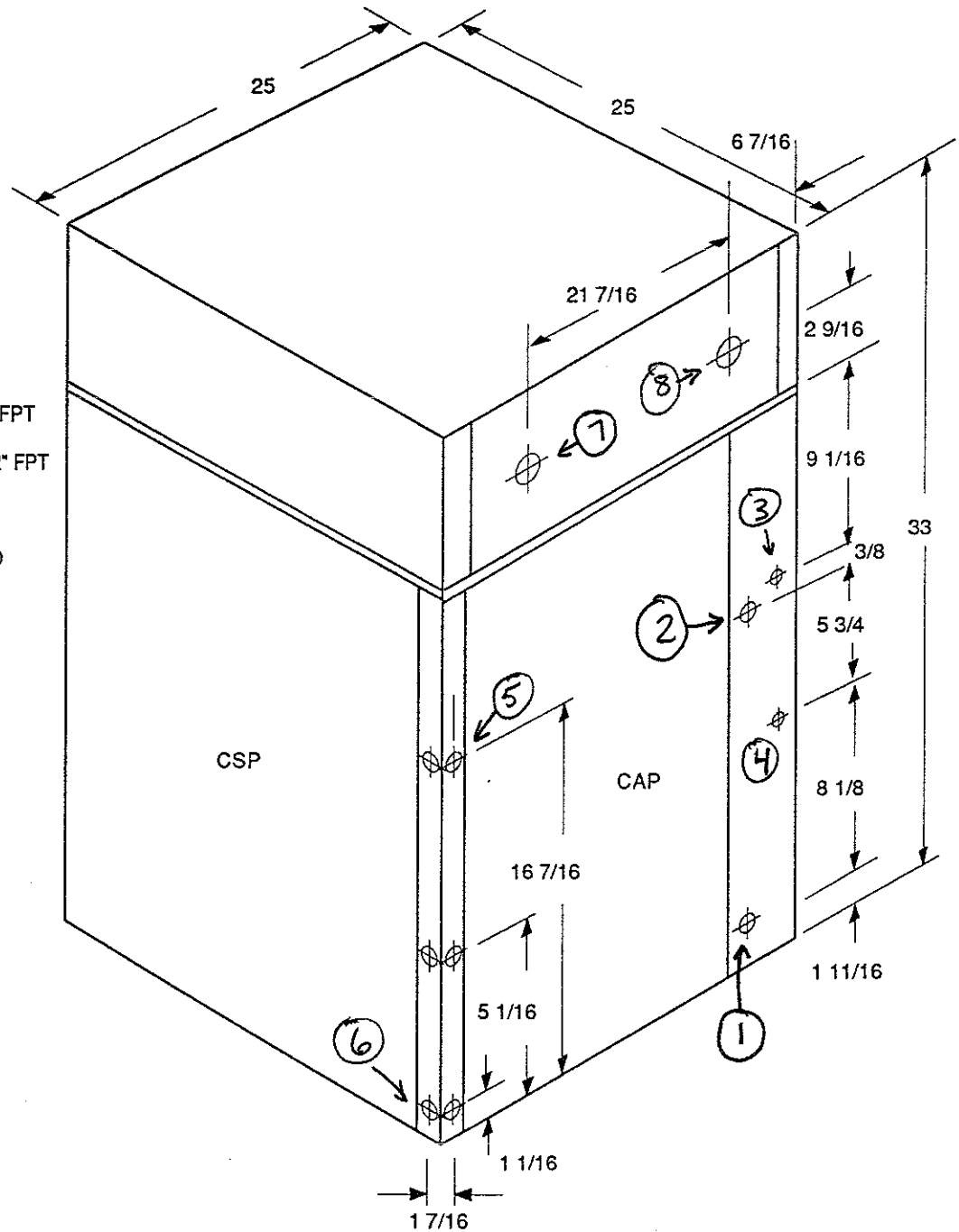
WE 060 Water To Water Unit

NOTES:

- 1 - Source Water In - 1" FPT
- 2 - Source Water Out - 1" FPT
- 3 - Hot Water Generator In - 1/2" FPT
- 4 - Hot Water Generator Out - 1/2" FPT
- 5 - Low Voltage Access - 1/2" KO
- 6 - High Voltage Access - 7/8" KO
- 7 - Load Water In - 1" FPT
- 8 - Load Water Out - 1" FPT

CSP - Compressor Service Panel

CAP - Control Access Panel



Physical Data WE 060

Contractor: _____ P.O.: _____
 Engineer: _____
 Project Name: _____ Unit Tag: _____

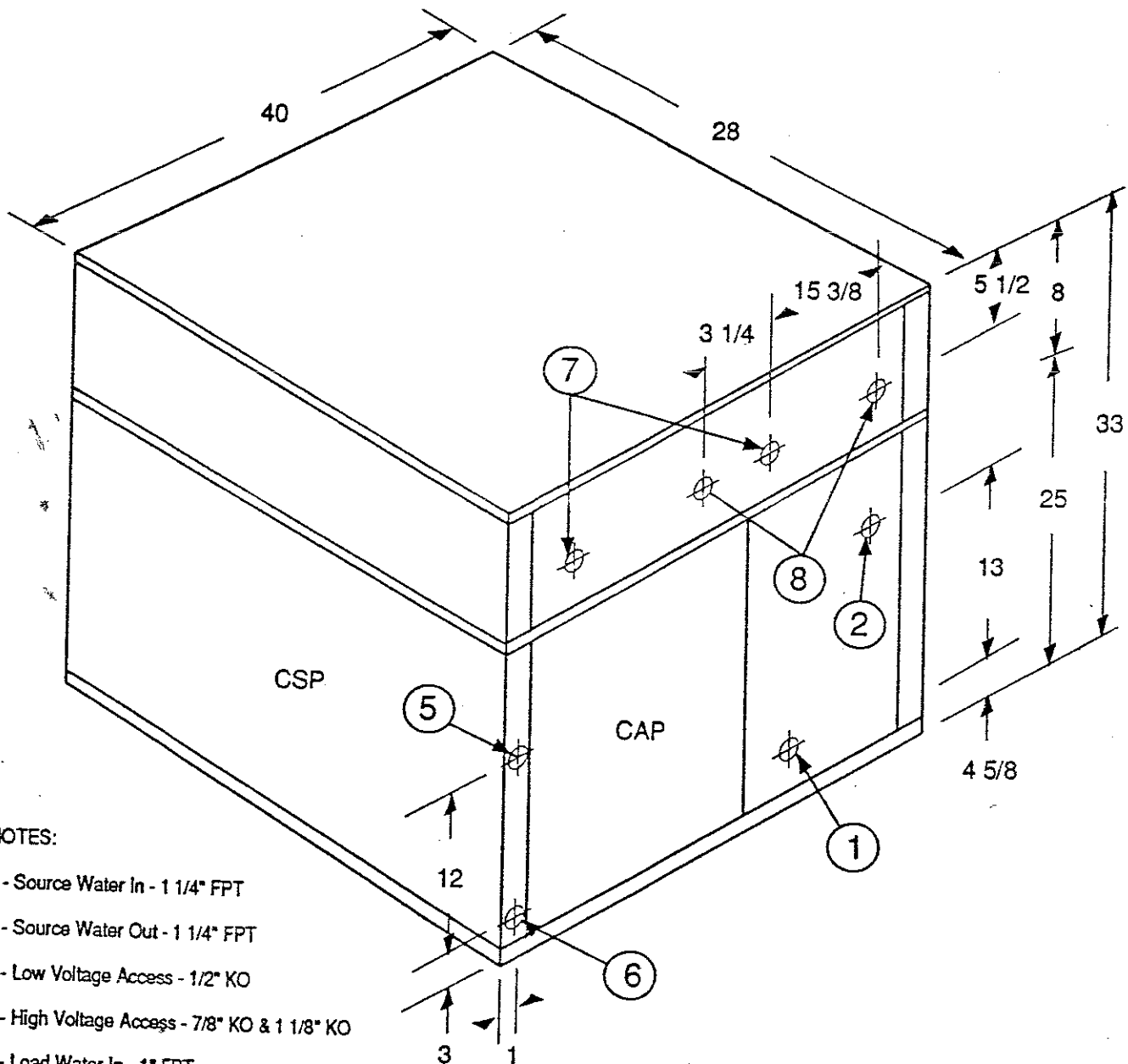
size	model no.	weight lbs	refrig. charge R22/ckt oz	Test pressure HI/LO	No. of circuits	Hi volt knockout	Lo volt knockout
60	WE		58	300/150	1	"7/8"™	"1/2"™

ClimateMaster works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice and may not be as described herein. Please contact ClimateMaster's Customer Service Department at 1-405-745-6000 for specific information on the current design and specifications. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely ClimateMaster's opinion or commendation of its products.

Dimensions Model WE 120

Contractor: _____ P.O.: _____
 Engineer: _____
 Project Name: _____ Unit Tag: _____

WE 120 Water To Water Unit



NOTES:

- 1 - Source Water In - 1 1/4" FPT
- 2 - Source Water Out - 1 1/4" FPT
- 5 - Low Voltage Access - 1/2" KO
- 6 - High Voltage Access - 7/8" KO & 1 1/8" KO
- 7 - Load Water In - 1" FPT
- 8 - Load Water Out - 1" FPT

CSP - Compressor Service Panel

CAP - Control Access Panel

Dimensions Model WE 060

Contractor: _____ P.O.: _____

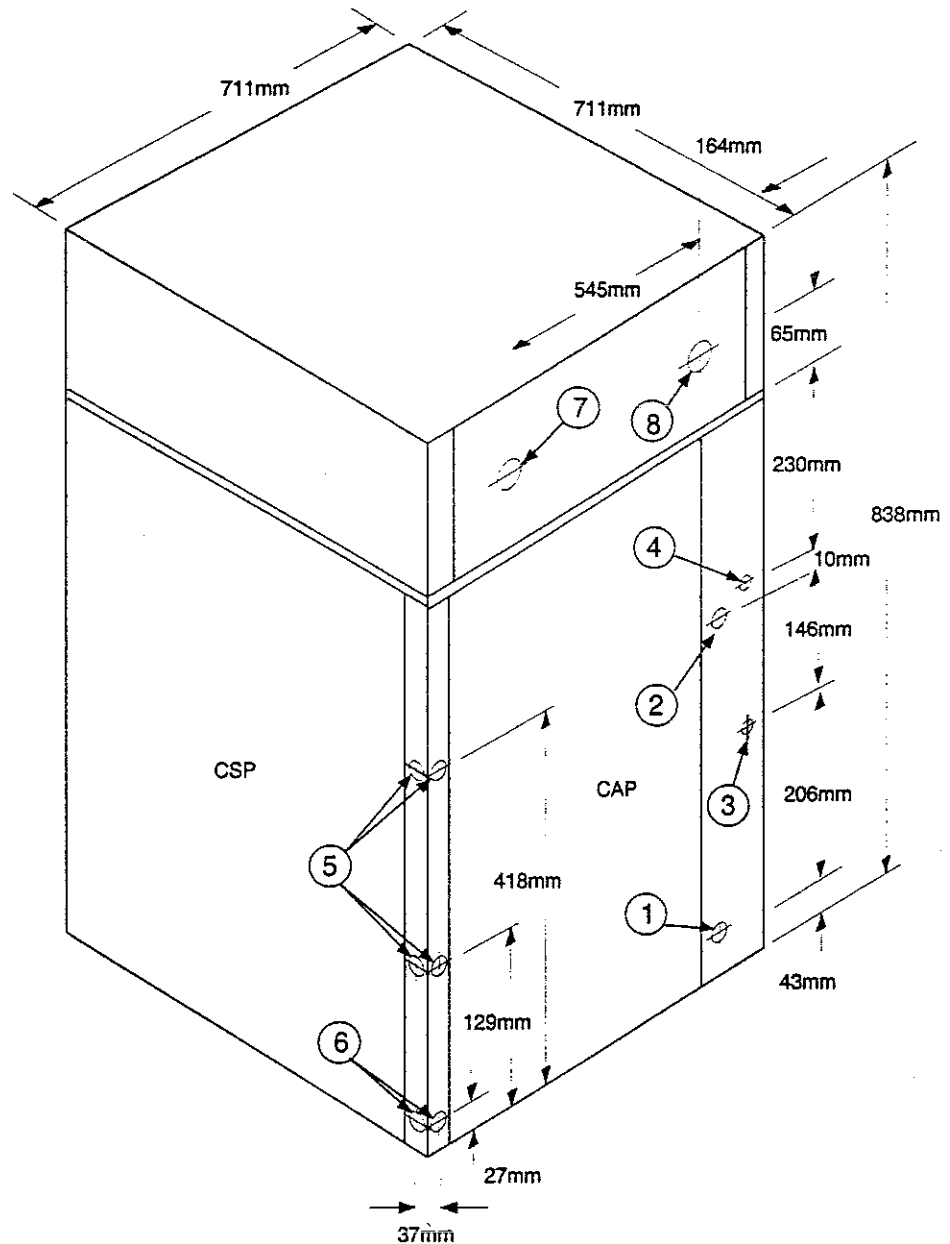
Engineer: _____

Project Name: _____ Unit Tag: _____

WE 060 Water To Water Unit

NOTES:

- 1 - Source Water In - 25 mm FPT
- 2 - Source Water Cut - 25 mm FPT
- 3 - Hot Water Generator In - 13 mm FPT
- 4 - Hot Water Generator Cut - 13 mm FPT
- 5 - Low Voltage Access - 13 mm KC
- 6 - High Voltage Access - 22 mm KC
- 7 - Load Water In - 25 mm FPT
- 8 - Load Water Cut - 25 mm FPT
- CSP - Compressor Service Panel
- CAP - Control Access Panel



HEATING

SOURCE		10 DEG. RISE		HEAT OF	HEAT OF	
<---COLD SIDE--->		<---HOT SIDE--->		REJ.	ABS.	HTG
GPM	EWT	GPM	EWT	BTUH	BTUH	COP
10.0	50.0	9.2	100.0	45900	32750	3.5
12.5	50.0	10.2	100.0	50920	37296	3.7
15.0	50.0	11.2	100.0	55939	41842	4.0
10.0	50.0	9.0	110.0	44862	30982	3.2
12.5	50.0	10.0	110.0	49881	35529	3.5
15.0	50.0	11.0	110.0	54901	40075	3.7
10.0	50.0	8.8	120.0	43823	29215	3.0
12.5	50.0	9.8	120.0	48842	33761	3.2
15.0	50.0	10.8	120.0	53862	38307	3.5
10.0	70.0	13.0	100.0	65215	50163	4.3
12.5	70.0	14.0	100.0	70234	54709	4.5
15.0	70.0	15.1	100.0	75254	59255	4.7
10.0	70.0	12.8	110.0	64176	48395	4.1
12.5	70.0	13.8	110.0	69196	52942	4.3
15.0	70.0	14.8	110.0	74215	57488	4.4
10.0	70.0	12.6	120.0	63137	46628	3.8
12.5	70.0	13.6	120.0	68157	51174	4.0
15.0	70.0	14.6	120.0	73176	55720	4.2

COOLING

SOURCE		10 DEG. DROP		REJ.	ABS.	
<---HOT SIDE--->		<---COLD SIDE--->		BTUH	BTUH	CLG
GPM	EWT	GPM	EWT	BTUH	BTUH	EER
10.0	50.0	7.8	50.0	48078	39004	14.7
12.5	50.0	9.1	50.0	54881	45605	16.8
15.0	50.0	10.4	50.0	61684	52205	18.8
10.0	50.0	8.4	55.0	51531	41845	14.7
12.5	50.0	9.7	55.0	58334	48446	16.7
15.0	50.0	11.0	55.0	65137	55046	18.6
10.0	50.0	8.9	60.0	54984	44686	14.8
12.5	50.0	10.3	60.0	61787	51287	16.7
15.0	50.0	11.6	60.0	68590	57887	18.5
10.0	70.0	7.1	50.0	46115	35724	11.7
12.5	70.0	8.5	50.0	52918	42324	13.6
15.0	70.0	9.8	50.0	59720	48925	15.5
10.0	70.0	7.7	55.0	49568	38565	12.0
12.5	70.0	9.0	55.0	56371	45165	13.8
15.0	70.0	10.4	55.0	63173	51766	15.5
10.0	70.0	8.3	60.0	53021	41406	12.2
12.5	70.0	9.6	60.0	59823	48006	13.9
15.0	70.0	10.9	60.0	66626	54607	15.5

INTERPOLATION OF DATA IS PERMISSIBLE. CONSULT FACTORY FOR PERFORMANCE BEYOND THE RANGE OF ABOVE DATA.

Physical Data WE 060

Contractor: _____ P.O.: _____
 Engineer: _____
 Project Name: _____ Unit Tag: _____

size	model no.	weight lbs		refrig. charge R22/ckt oz	Test pressure HI/LO	No. of circuits	Hi volt knockout	Lo volt knockout
		SHIP	OPER.					
60	WE			58	300/150	1	7/8"	1/2"

ClimateMaster works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice and may not be as described herein. Please contact ClimateMaster's Customer Service Department at 1-405-745-6000 for specific information on the current design and specifications. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely ClimateMaster's opinion or commendation of its products.

Electrical Data WE 060

Contractor: _____ P.O.: _____
 Engineer: _____
 Project Name: _____ Unit Tag: _____

size	model no.	voltage	phase	min ckt. ampacity	max. fuse	LRA comp. (ea)	RLA comp. (ea)	min. volts	pump amps
60	WE060H	208	3	26.4	45	90	17.9	197	4.0
60	WE060G	208	1	42.3	70	125	30.7	197	4.0

ClimateMaster

Submittal Data

Chiller
Performance
WE 060

Contractor: _____ P.O.: _____
Engineer: _____
Project Name: _____ Unit Tag: _____

Based on 10°F drop on load side

SOURCE HOT SIDE		10 DEG. DROP CHILLER SIDE		HEAT OF REJECTION BTUH	CHILLER CAPACITY BTUH	EER
GPM	EWI	GPM	EWI			
10.0	50	7.8	50	43078	39004	14.7
12.5	50	9.1	50	54381	45605	16.8
15.0	50	10.4	50	61684	52205	18.8
10.0	50	8.4	55	51531	41845	14.7
12.5	50	9.7	55	58334	48446	16.7
15.0	50	11.0	55	65137	55046	18.6
10.0	50	8.9	60	54984	44686	14.8
12.5	50	10.3	60	61787	51287	16.7
15.0	50	11.6	60	68590	57887	18.5
10.0	70	7.1	50	46115	35724	11.7
12.5	70	8.5	50	52918	42324	13.6
15.0	70	9.8	50	59720	48925	15.5
10.0	70	7.7	55	49568	38565	12.0
12.5	70	9.0	55	56371	45165	13.8
15.0	70	10.4	55	63173	51766	15.5
10.0	70	8.3	60	53021	41406	12.2
12.5	70	9.6	60	59823	48006	13.9
15.0	70	10.9	60	66626	54607	15.5

ClimateMaster

Submittal Data

Cooling
Performance
WE 060

Contractor: _____ P.O.: _____
Engineer: _____
Project Name: _____ Unit Tag: _____

Based on 10°F drop on load side

SOURCE COLD SIDE		10 DEG. DROP HOT SIDE		REJECTION BTUH	ABSORPTION BTUH	CLG EER
GPM	EWT	GPM	EWT			
10.0	50	7.8	50	48078	39004	14.7
12.5	50	9.1	50	54881	45605	16.8
15.0	50	10.4	50	61684	52205	18.8
10.0	50	8.4	55	51531	41845	14.7
12.5	50	9.7	55	58334	48446	16.7
15.0	50	11.0	55	65137	55046	18.6
10.0	50	8.9	60	54984	44686	14.8
12.5	50	10.3	60	61787	51287	16.7
15.0	50	11.6	60	68590	57887	18.5
10.0	70	7.1	50	46115	35724	11.7
12.5	70	8.5	50	52918	42324	13.6
15.0	70	9.8	50	59720	48925	15.5
10.0	70	7.7	55	49568	38565	12.0
12.5	70	9.0	55	56371	45165	13.8
15.0	70	10.4	55	63173	51766	15.5
10.0	70	8.3	60	53021	41406	12.2
12.5	70	9.6	60	59823	48006	13.9
15.0	70	10.9	60	66626	54607	15.5

ClimateMaster works continuously to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice and may not be as described herein. Please contact ClimateMaster's Customer Service Department at 1-800-745-6888 for specific information on the current design and specifications. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely ClimateMaster's opinion or representation of its products.

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FAX NO. 4057452051

CLIMATE MASTERS

AUG-19-97 TUE 12:45

ClimateMaster

Submittal Data

Heating
Performance
WE 060

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

Based on 10°F rise on load side

SOURCE COLD SIDE		10 DEG. RISE HOT SIDE		HEAT OF REJECTION BTUH	HEAT OF ABSORPTION BTUH	HTG. COP
GPM	EWI	GPM	EWI			
10.0	30	5.3	100	26586	15337	2.4
12.5	30	6.3	100	31605	19883	2.7
15.0	30	7.3	100	36625	24429	3.0
10.0	30	5.1	110	25547	13569	2.1
12.5	30	6.1	110	30567	18115	2.5
15.0	30	7.1	110	35586	22662	2.8
10.0	30	4.9	120	24508	11802	1.9
12.5	30	5.9	120	29528	16348	2.2
15.0	30	6.9	120	34547	20894	2.5
10.0	50	9.2	100	45900	32750	3.5
12.5	50	10.2	100	50920	37296	3.7
15.0	50	11.2	100	55939	41842	4.0
10.0	50	9.0	110	44862	30982	3.2
12.5	50	10.0	110	49881	35529	3.5
15.0	50	11.0	110	54901	40075	3.7
10.0	50	8.8	120	43823	29215	3.0
12.5	50	9.8	120	48842	33761	3.2
15.0	50	10.8	120	53862	38307	3.5
10.0	70	13.0	100	65215	50163	4.3
12.5	70	14.0	100	70234	54709	4.5
15.0	70	15.1	100	75254	59255	4.7
10.0	70	12.8	110	64176	48395	4.1
12.5	70	13.8	110	69196	52942	4.3
15.0	70	14.8	110	74215	57488	4.4
10.0	70	12.6	120	63137	46928	3.8
12.5	70	13.6	120	68157	51174	4.0
15.0	70	14.6	120	73176	55720	4.2

ClimateMaster warrants and agrees to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice and may not be as described herein. Please contact ClimateMaster's Customer Service Department at 1-800-745-6886 for specific information on the current design and specifications. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely ClimateMaster's opinion or representation of its products.

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FAX NO. 4057452051

CLIMATE MASTERS

AUG-19-97 TUE 12:45

WE SERIES
ELECTRICAL DATA
60 Hz

Contractor: _____ P.O.: _____
 Engineer: _____
 Project Name: _____ Unit Tag: _____

MODEL	VOLTAGE	COMPRESSOR		QTY	MAX FUSE & UL	MIN CKT	R-22 CHARGE
		RLA	LRA		BREAKER SIZE	AMPS	OZ/CKT
WE036G	208/230/1	14.5	78.0	1	35	22.1	38
WE036H	208/230/3	8.9	59.5	1	25	15.1	38
WE060G	208/230/1	30.7	125.0	1	70	42.3	58
WE060H	208/230/3	17.9	90.0	1	45	26.4	58
WE060F	460/3	8.6	45.0	1	15	10.8	58
WE060N	575/3	7.0	45.0	1	15	8.8	58
WE120G	208/230/1	30.7	125.0	2	100	73.1	58
WE120H	208/230/3	17.9	90.0	2	60	44.3	58
WE120F	460/3	8.6	45.0	2	25	19.4	58
WE120N	575/3	7.0	45.0	2	20	15.8	58