PROVIDED BY:

THERMCO ENERGY SYSTEMS

74 Chula Brookfield Rd, Chula GA. 31733
Phone: (904) 424-9773
Email: info@thermcoenergysystems.com
www.Thermcoenergysystems.com

CAUTION- THIS UNIT IS FOR INDOOR USE ONLY!!

WARNING BEFORE ANY INSTALLATION OR MAINTANCE IS STARTED PLEASE READ COMPLETE INSTLLATION GUIDE.

INSTALLATION START -UP AND SERVICE INSTRUCTION -

The HP Water Source Series provides the best combination of performance and efficiency available. Safety devices are built into each unit to provide the maximum system protection possible when equipment is properly installed and maintained.

GENERAL DISCRIPTION -

The HP Water Source Series is a refrigeration machine that in the heating mode efficiently extracts heat from a water source (source side) such as well, lake, boiler/tower loop, or closed loop ground heat-exchanger. The unit transfers the heat to another flow of water (load side) the amount of heat added to the load side is greater than the amount taken from the source since the electrical energy supplied to the compressor is added to the output.
The HP Water Source Series single package unit consisting of compressor water to refrigerant evaporator coil, expansion valve (WP-with revering valve), and control panel with all necessary protection and safety circuit.

SAFETY CONSIDERATIONS -

Installation and serving of this system can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair, or service equipment. All other operations should be performed by qualified personnel.

WARNING - before performing service or maintenance operation on system, Turn off main power to unit. Electrical shock could cause PERSINAL INJURY OR DEATH

MOVING AND STORAGE

Move unit in normal "up" position as indicated on the carton. DO NOT STACK MORE THAN THREE UNITS HIGH. When the equipment is received, all items should be carefully inspected
and checked against the bill of lading to be sure all crates and cartons have been received. Examine units for shipping damage. Units in question should be internally inspected. If unit is damaged the carrier should make the proper notation on the delivery receipt acknowledging the damage

LOCATION -

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The unit should be centrally located with respect to the distribution system. The unit should be installed within the applicable area. If not, unit will be exposed to severe freeze damage that the warranty will not cover.
Servicing of the electrical controls is performed from the front. The compressor can be accessed from the back. A minimum of 24" clearance in front and back of the system should exist.
If the unit is installed on a floor over a crawl space, it should not rest on long, unsupported floor joists. Vibration may be crested in the joist with the crawl space acting as an amplifier box, resulting in undesirable noise. A drain pan is recommended where water released during start-up or maintenance could cause damage to floors.

CAUTION - before installation verify that the plug in back of drain pan is properly in place and secured.

INSTALLATION -

1. Uncrate the unit and remove from carton taking special care not to damage unit.
2. Inspect the equipment's internal components. All compressor sized units are recharged with refrigerant.
3. Connect water supply and return lines to water inlets and outlets. Flexible Hose may be used for waterline to reduce possible vibration and improve unit serviceability. Consult local codes. Make sure hose or pipe or pipes are suitable for system water Pressure and sized for proper flow rate.

START -UP PROCEDURES -

BEFORE ENERGIZING THE UNIT, CHECK THE FOLLOWING:

- High voltage power supply is correct and in accordance with specified nameplate ratings.
- Field wire and circuit protection are the correct size
- Low-voltage control circuit is correct.
- Piping system is complete and correct.
- Vibration isolation has been provided.
- Unit is serviceable
- Unit access panels are recurred in place.
- Thermostat is in "OFF" position.

INITIAL UNIT START -UP

- Set thermostat to highest position.
- Set thermostat system switch to "COOL" compressor should not run.

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• Reduce thermostat setting until the compressor reversing valve, loop pump is energized. Adjust water flow utilizing pressure/temperature plugs.
• Turn thermostat system switch to "OFF" position. Unit should stop running and reversing valve should be energized.
• Leave unit off for approximately five (5) minutes to allow for pressure equalization.
• Turn thermostat to lowest setting.
• Set thermostat system switch to "HEAT" position.
• Adjust temperature setting upward until unit is energized.
• Check for vibration, leaks, etc.
• Set thermostat to maintain desired space temperature.
• Instruct the owner on system operation.

TROUBLE SHOOTING -

a. Check power supply for adequate voltage.
b. Check control circuit for proper connection.
c. Check for loose wires.
d. Check run capacitor.
e. Check internal compressor ground or open winding, after compressor is cool

NOTE- Shut power and restart
CAUTION- THIS IS FOR INDOOR USE ONLY.

Open high pressure switch
a. Check water flow.
b. Check water temperature.
c. Check for scold or fouled condenser

Open low-pressure switch
a. Check water flow.
b. Check water temperature.
c. Check for scolded or fouled condenser.
d. Check for loss of refrigerant charge.

NOTE- If lockout on safety circuit occurs, check lend side heat transfer surface for adequate size. Shut power and re-energized.

INSUFFICIENT COOLING OR HEATING
• Check the thermostat for proper location. Avoid outside walls and drafts.

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- Check water flow.
- Check refrigerant charge.
- Check system components.

OPTIONS

HEAT RECOVERY PACKAGES

A factory installed heat recovery package is available for portable water heating e.g. swimming pool applications.

CONTROL OPTIONS

Various controls options are available, such as time delay relays, random start relays, aqua stats, etc. Consult your Miami Heat Pump dealer for application insistence.

DUCT CONNECTION

Use duct tape to connect ducts to the A/C unit. For return airflow, connect duct with adapter which will be sized according to the following table in order to avoid air flow restriction.

MODEL	WIDTH	HEIGHT
	INCHES	
HP024V	16	20
HP031V	16	20
HPX036V	16	20
HPX041V	16	20
HPX048V	24	32
HPX060V	24	32

CAUTION- Galvanized pipe or fittings are not recommended for use with these units due to possible galvanic corrosion.

All plumbing, both supply water and discharge water lines must be sized to handle the required water flow with a minimum pressure drop.

Closed loop and pond applications require specialized design knowledge. No attempt at these installations should be made unless the dealer has received specialized training.

Pipe will sweat if low temperature water is run through the supply and discharged lines. These lines should be insulated to prevent damage from condensation.

Solenoid valves used should be a slow closing diaphragm type. If not, water hammer may occur on unit start up or shut down. Placing the solenoid valve on the outlet side of the system helps this situation.

CAUTION-improper heat exchanger water flow due to piping valving or improper pump operation is hazardous to units and constitutes abuse that will void heat exchanger and compressor warranty.

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An in-line water screen strainer is recommended where poor water quality may exist.

Ball valves with hose connections are recommended for back-flushing and chemical cleaning of the evaporator/condenser.

Field wiring must comply with local and national fire safety and electrical codes. Power to the unit must be within the operating voltage range indicated on the nameplate or on the performance data sheet. On three-phase units, phase must be balanced within 6%

CAUTION- Operation of unit on improper line voltage or with excessive phase imbalance will be hazardous to the unit and constitutes abuse and is not covered by warranty.

Properly sized fuses or HACR circuit breakers must be installed for branch circuit protection. See equipment-rating plate for maximum size. The unit is supplied with on opening for attaching conduits. Connect the ground lead to the ground lug in the control box. Connect the power leads as indicated in the wiring diagram.

COOLING TOWER/BOILER APPLICATION-
(SEE FIGURE #l & #2)

The cooling tower and boiler water loop temperature is usually maintained between 50°F to 100°F to assure adequate cooling and heating performance.
In the cooling mode, heat is ejected from the Miami Heat Pump unit into the source water loop. A cooling tower provides evaporative cooling to the loop water thus maintaining a constant supply temperature to the unit. When utilizing open cooling towers, chemical water treatment is mandatory to ensure the water is free from corrosive minerals. A secondary heat exchanger (plate form) between the unit and the open cooling tower may also be used. It is imperative that all air be eliminated from the source closed loop side of the heat exchanger to insure against fouling.
In the heating mode, heat is absorbed from the source water loop. A holler can be utilized to maintain the loop at the desired temperature, In a milder climates a "flooded tower" concept is often used. This concept involves adding make-up water to the cooling water sump to maintain the desired loop temperature.
CAUTION-Water piping exposed to extreme low ambient temperature are subject to freezing.
Units are equipped with female pipe thread fittings. Consult the specification sheets. Teflon tape sealer should be used when connecting to the unit to insure against leaks and possible condenser fouling. Do not over tighten the connections. Flexible hoses should be used between the unit and the rigid system to avoid possible vibration. Both valves should be installed in the supply and return lines for unit isolation and unit water flow rite balancing.

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Pressure/temperature parts are recommended in both supply and return lines for system flow balancing. Water flow can be accurately set by measuring the refrigerant to water heat exchangers water side pressure drop. See specification sheets for water flow and pressure drop information.

FIGURE # 1
COOLLING TOWER/BOILER
APPLICATION
(Source Side)
1. Ball Valves
2. Hose kits
3. P/T plugs
4. Load side Connection
5. Low-voltage control connection
6. Vibration pad
7. Line-voltage disconnect
8. Supply and return lines of central system

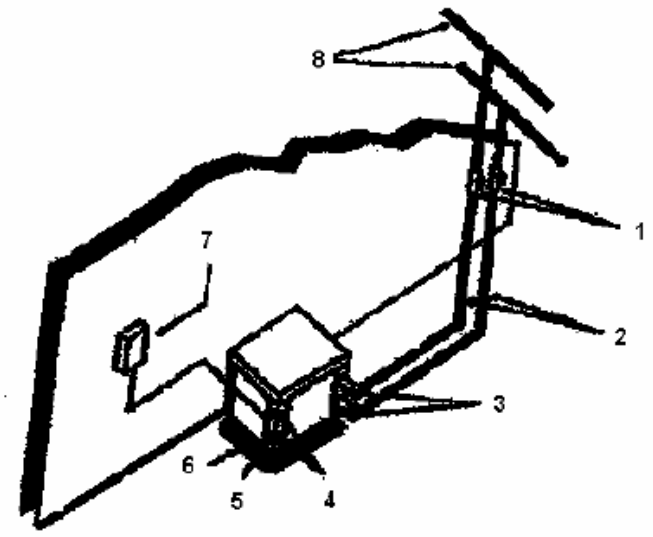
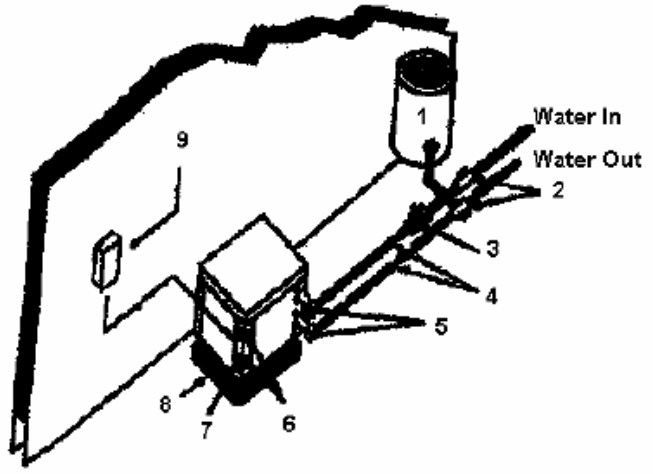


FIGURE # 2
WELL WATER
APPLICATION
(Source Side)
1. Pressure tank
2. Ball valve
3. Solenoid valve
4. Hose kit
5. P/T plugs
6. Load side connections
7. Low-voltage control connection
8. Vibration pad
9. Line-voltage disconnect



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TERM OF LIMITED WARRANTY

General - Miami Heat Pump warrants only to the original purchaser of a HP Series water source heat pump by Miami Heat Pump. Miami Heat Pump will furnish a new or rebuilt part during the first year limited warranty for any parts supplied by Miami Heat Pump which has failed due to workmanship or material defect within the warranty period.
Warranty Registration - Return the warranty registration form to Miami Heat Pump immediately after installation of the system. If the warranty registration is not returned, the warranty period will begin on the date of shipment from Miami Heat Pump. In any event, the warranty initiate date shall be no later than sixty (60) days from the date of shipment from Miami Heat Pump.

Miami Heat Pump will provide
1. A new or rebuilt part during Two years limited warranty for any part supplied by Miami Heat Pump which fails as a result of defects in workmanship or materials within 24 months from date of installation.
2. A new or rebuilt refrigerant circuit part, reversing valve, refrigerant - to - water heat exchanger, refrigerant- to - air heat exchanger, high and low pressure refrigerant switches, refrigerant expansion device, check valve (if installed). Filter drier or desuperheater (if installed), during limited warranty which has been supplied by Miami Heat Pump and fails due to defect in workmanship or materials within 24 months from date of installation (compressor is covered for 60 months under the same conditions as above).

Miami Heat Pump will not provide:
1. Transportation costs of replacement parts to the installation site.
2. The cost of labor, refrigerant, materials, or service incurred in removal of defective part or in obtaining and reinstalling of the new or rebuilt part.
3. Any item other than repair or replacement of the unit itself.

APPLICABILITY - The warranty is applicable only to HP Series that are purchased and installed in the United States. This warranty is not applicable to:
1. Air Filter, fuses and refrigerants.
2. Units or parts, which have been moved from the location where they were initially installed
3. Products on which payment is in default.
4. Products which have damages or defects resulting from improper installation, wiring, electrical characteristics or maintenance or caused by misuse, abuse or accident, fire, flood, alteration and/or misapplication of the unit, default or delay in performance caused by war, government restrictions or restraints, strikes, material shortage beyond control of Miami Heat Pump or an Act of God.
5. Any portion of the system not supplied by Miami Heat Pump.
6. Products which the model or serial number has been removed or defaced.
7. Units which have suffered damages resulting from water contamination, use of corrosive fluids, erosion, operation at abnormal water temperature and/or flow and unauthorized opening of refrigerant circuit.

OBTAINING WARRANTY PERFORMANCE
Warranty is valid for licensed contractors only. Contact your local distributor for details Miami Heat Pump will charge a handling fee any parts, repair or service required. All items will be charged F.O.B. factory.

Note: Certain states do not allow limitation on how long an implied warranty lasts or the limitation or exclusion of consequential or incidental damages so the foregoing may not apply.
This warranty gives you specific legal rights and you may also have other rights from state to state. Change in legislation of compressor may require an additional fee.

Limitations
The warranty given in lieu of all other warranties or fitness for particular purpose and merchantability shall be limited to the duration of this express warranty. Manufacturer expressly disclaims and excludes any liability for consequential or incidental damage fir breach of any express or implied warranty.

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Warranty Registration

First Name: * _____

Last Name: * _____

Phone Number: * (_____) _____-_____

E-mail Address: * _____

Product Model: * _____

Serial Number: * _____

Receipt/ Order Number _____

Purchase Date: * _____ / _____ / _____

Purchased From: * _____

Installer Name * _____

Price Paid: $_____._____

End User Copy

First Name: * _____

Last Name: * _____

Phone Number: * (_____) _____-_____

E-mail Address: * _____

Street Address: * _____

Address Line 2: _____

City: * _____

State: * _____

Postal Code: * _____ - _____

Country: * _____

Product Model: * _____

Serial Number: * _____

Receipt/ Order Number _____

Purchase Date: * _____ / _____ / _____

Purchased From: *_____

Installer Name * _____

Price Paid: $_____._____

Please return this bottom portion to Thermco Energy Systems at the above address