



AIA[®] Document G716[™] – 2004

Request for Information (“RFI”)

TO:

Brian T. Dunn, AIA
KG+D Architects, PC
285 Main Street
Mount Kisco, NY 10549

FROM: LJ Coppolla**PROJECT:**

Harrison, Town-Village Recreation Center Phase 2
270 Harrison Avenue
Harrison, NY 10528

ISSUE DATE:

2/18/2025

RFI No.

 #035

PROJECT NUMBERS: 2020-1005 /**REQUESTED REPLY DATE:****COPIES TO:****RFI DESCRIPTION:** *(Fully describe the question or type of information requested.)*

See Attached

REFERENCES/ATTACHMENTS: *(List specific documents researched when seeking the information requested.)***SPECIFICATIONS:**

See Attached

DRAWINGS:

See Attached

OTHER:

See Attached

SENDER'S RECOMMENDATION: *(If RFI concerns a site or construction condition, the sender may provide a recommended solution, including cost and/or schedule considerations.)***RECEIVER'S REPLY:** *(Provide answer to RFI, including cost and/or schedule considerations.)*

Phil Pignatelli

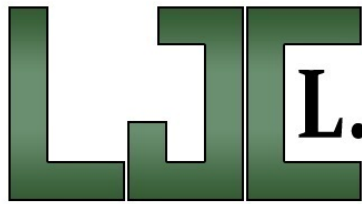
February 17th 2025

BY**DATE****COPIES TO**

Note: This reply is not an authorization to proceed with work involving additional cost, time or both. If any reply requires a change to the Contract Documents, a Change Order, Construction Change Directive or a Minor Change in the work must be executed in accordance with the Contract Documents.

OLA Response 04-02-2025:

Refer to Specification 230900, Section 2.9-H for water flow switches. Refer to Specification 230900, Section 2.12 for control valves. Refer to attached sequence from LG for water source heat pumps.



L.J. COPPOLA INC.

MECHANICAL CONTRACTORS

40 Farrington Road
Brewster, NY 10509
(914) 769-7666
Fax: (914) 769-5141
Plumbing License No. 750

PLUMBING

H.V.A.C.

PROCESS PIPING

SEWAGE TREATMENT

ESTABLISHED 1972

REQUEST FOR INFORMATION

Project: HARRISON REC CENTER PHASE 2 **Date:** 2/14/25 **Log No.:** LJC# -03

Drwg.: M-704 **Spec.:** N/A **Area:** MER

Directed To: PIAZZA BROTHERS **Date Required:**

Impact: BMS INTEGRATION

Regarding: WCHP COMPONENTS & SEQUENCE OF OPERATION

REQUESTED BY: LJC & TACONIC HVAC **cc:**

INFORMATION REQUIRED:

During the 2/13/25 conference call with OLA, Klima NY, LJC, ACL, and Piazza, it was requested that an official RFI be drafted to request the following information:

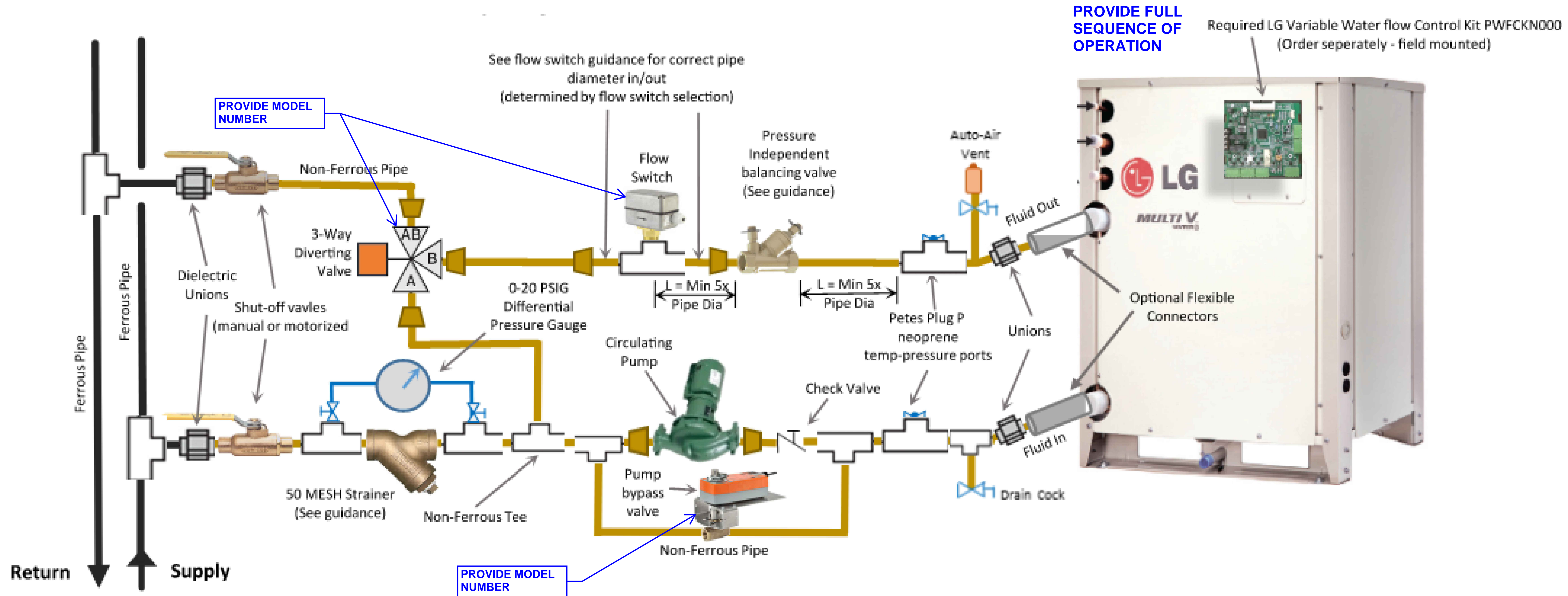
- 1 - Please provide the model numbers for the control valves and flow switch shown on M-704.
- 2 - Please provide the sequence of operation for the full system and components.

RESPONSE:

RESPONSE BY:

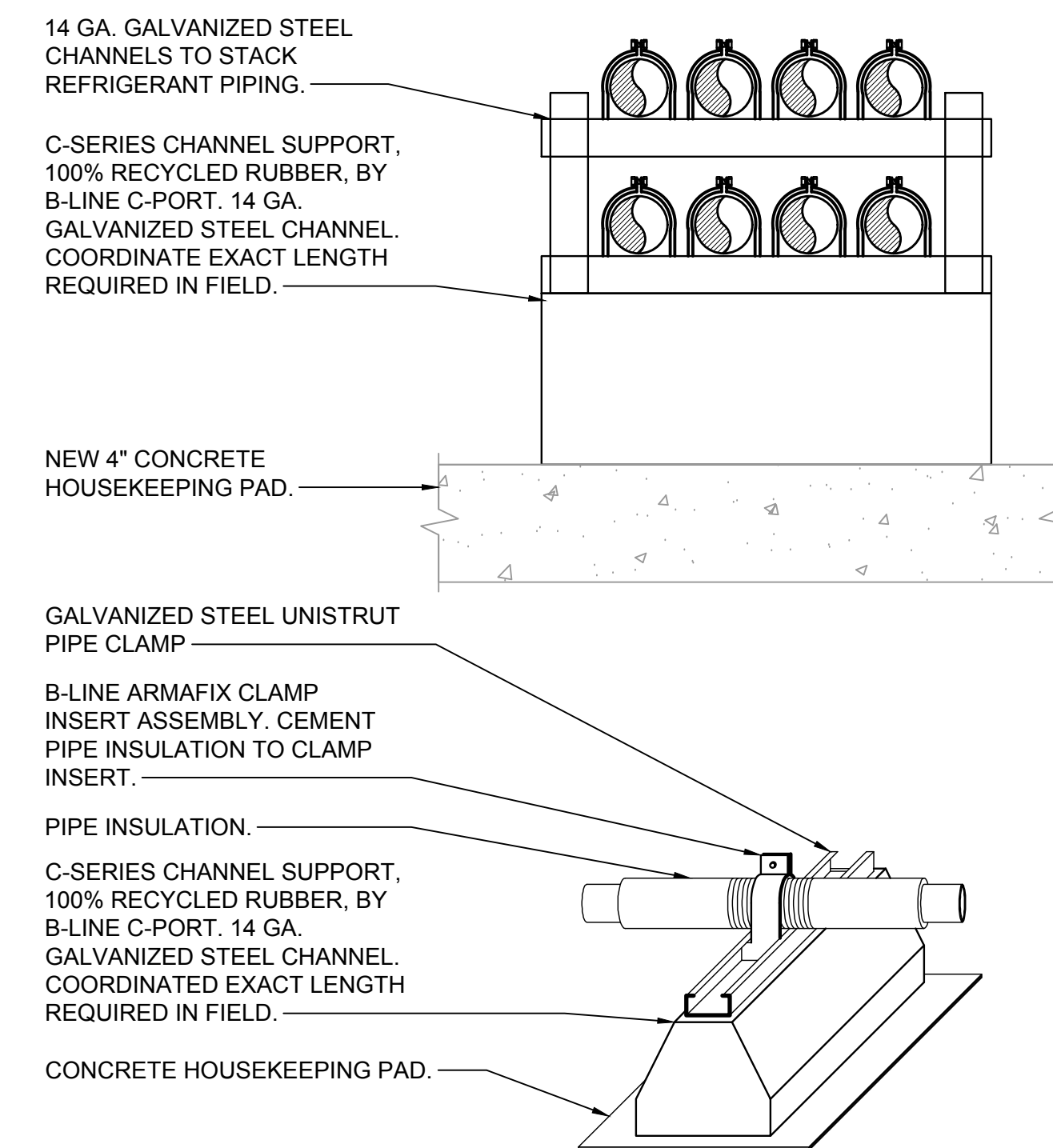
RESPONSE DATE: **cc:**

Your response is requested by the date listed above. Failure to respond by this date may delay the project schedule and may have a cost impact.



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WATER COOLED HEAT PUMP DETAIL
SCALE: NONE



- NOTES:
1. ALL BRACKETS, HANGERS, AND FASTENERS SHALL BE GALVANIZED STEEL.
 2. CLAMP INSERT ASSEMBLY SHALL INCLUDE GALVANIZED STEEL PIPE CLAMP, ARMAFLEX INSULATION WITH PAINTED ALUMINUM JACKET, AND INTERIOR SUPPORTS.
 3. CEMENT RUBBER SUPPORT BLOCKS TO HOUSEKEEPING PAD.

1

REFRIGERANT ON PAD PIPE SUPPORT DETAIL
SCALE: NONE

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Professional Seal

No.	Date	Issue
4	06/05/2024	ISSUED FOR BID
3	01/16/2024	ISSUED FOR PERMIT
2	06/01/2020	DESIGN DEVELOPMENT
1	03/31/2020	50% DESIGN DEVELOPMENT

Sheet Title

MECHANICAL
DETAILS

Job No. NKGD0207.00 Date 03/01/2024

Scale AS NOTED Drawn / Checked HM / RG

Sheet Number

M-704

Multi V Water 5 Frame – Three-Way Valve with Constant Speed Pump

Cooling cycle operation: Upon a thermal on request from an IDU, terminals 1(L) and 2(N) are energized with 220v/60/1 power. 460-volt frames will also provide ~220 volt power. These terminals can serve up to 500 VA load and are provided to power optional field provided motorized 220-volt isolation valves and 220-volt recirculation pump if the amperes of the combined connected total is ≤ 500 VA.

Note: This sequence assumes the constant volume, on/off controlled recirculation pump and optional two-way motorized 220-volt isolation valves are powered using Terminal 1(L) and 2(N). The pump start/ stop circuit is controlled using terminals 3(L) and 4(N). The pump is installed in the pipe connecting the heat exchanger outlet to the three-way control valve inlet as shown in Figure 77. If the combination of the pump and control valve operator(s) power draw exceeds 500VA, provide a separate source of power for the bypass pump and a field provided pilot relay connected to terminals 1(L) and 2(N). Provide fusing between the pump and the terminals as well as the optional isolation valves and the terminals. Fuse size for any single connected component cannot exceed 2.2 amperes @ 220v.

If motorized 220-volt two-position isolation valves are installed, the isolation valve operators shall open and fluid flow between the building and the frame will commence. After a delay of approximately 30 seconds following a thermal on request from an IDU, or following the completion of a reversing valve position changeover, Multi V Water 5 closes the circuit between Terminals 3(L) and 4(N) starting the pump. Simultaneously, the variable flow control kit provides 24 volts to power the 3-way valve operator and a variable 2-10 volt control signal initially set at 5-volts, setting the 3-way valve position at 50% of stroke.

The normally open pump bypass valve operator is wired to the pump auxiliary contactor. When the pump starts, the auxiliary contactor on the pump is energized closing the normally open bypass pump valve stopping the flow of fluid through the pump bypass pipe. The bypass valve operator's auxiliary contact (end switch) (or variable 2-10 volt signal) whichever is the case will provide a feedback signal to confirm the valve is closed.

Note: If confirmation from the end switch is not received within 90 seconds (adjust the time delay period for valve operator end to end stroke time) of a pump start, the time delay relay will stop the pump and the pump auxiliary contact will open. The bypass valve operator will be de-energized stroking the valve to the open position. If the valve operator fails, the fail-open spring of the valve operator will return the bypass valve to the open position.

After the pump starts, Multi V Water 5 is seeking flow confirmation by monitoring the circuit between terminals 5(L) and 6(N). When the flow switch closes confirming a minimum of 90% of rated flow is present (see Table 65 for flow switch setting specifications), the circuit between terminal 5(L) and 6(N) is completed. If the flow leaving the heat exchanger falls below 80% of rated flow, the flow switch will open.

Note: when the flow switch opens signaling loss of flow, error code CH189 will be displayed on the Multi V Water 5 seven-segment display.

Upon flow confirmation, the compressor begins a soft-start and ramps up to a warm-up speed of approximately 30 Hz. After approximately two minutes the main controller adjusts the compressor speed and modulates the position of the 3-way valve in response the variable voltage signal provided by the variable flow control kit (VWFC).

The VWFC kit adjusts valve position to maintain compressor head pressure. When the measured compressor head (high) pressure is above the target, the voltage value sent by the VWFC kit to the 3-way valve will increase, fluid flow from/ to the building fluid circuit will rise, and the volume of fluid flowing through the bypass pipe will decrease. When the compressor head (high) pressure is below target, the voltage value from the VWFC kit to the 3-way control valve will decrease, fluid flow from/to the building fluid circuit will be reduced, and the volume of fluid passing through the bypass will increase.

When the building cooling load decreases, the microprocessor instructs the compressor to slow down. When the compressor in the frame has stopped running, the control voltage signal from the VWFC kit will be reduced to zero (0) volts and the valve position will be 100% open between the heat exchanger and the building return with no flow through the bypass. The dry contact closure between Terminals 3(L) and 4(N) will open, opening the pump auxiliary contact de-energizing the pump operation and pump bypass valve operator. Simultaneously, 220-volt power to terminals 1(L), 2(N) will cease, closing the optional 220-volt isolation valves and de-energizing the pump.

Heating Cycle Operation: Upon a thermal on request from an IDU, terminals 1(L) and 2(N) are energized with 220v/60/1 power. 460-volt frames will also provide ~220 volt power. These terminals can serve up to 500 VA load and are provided to power optional field provided 220-volt motorized isolation valves and recirculation pump if the amperes of the connected total is ≤ 500 V A.

Note: This sequence assumes the constant volume, on/off controlled recirculation pump and optional two-way motorized 220-volt isolation valves are powered using Terminal 1(L) and 2(N). The pump start/ stop circuit is controlled using terminals 3(L) and 4(N). The pump is installed in the pipe connecting the heat exchanger outlet to the three-way control valve inlet as shown in Figure 77. If the combination of the pump and control valve operator(s) power draw exceeds 500VA, provide a separate source of power for the bypass pump and a field provided pilot relay connected to terminals 1(L) and 2(N). Provide fusing between the pump and the terminals as well as the optional isolation valves and the terminals. Fuse size for any single connected component cannot exceed 2.2 amperes @ 220v.

If motorized 220-volt two-position isolation valves are installed in lieu of manual shutoff valves the isolation valve operators shall open and fluid flow between the building and the frame will commence.

WATER CIRCUIT INSTALLATION



Water Circuit Design

After a delay of approximately 30 seconds following a thermal on request from an IDU, or following the completion of a reversing valve position changeover, Multi V Water 5 will NOT close the circuit between Terminals 3(L) and 4(N). The pump remains off and the 3-Way control valve remains 100% open between the heat exchanger and the building return providing 100% flow through the pump bypass pipe to the heat exchanger.

Note: If the pump operates while in heating mode shut the system down. Leaving the system operational could result in damaged heat exchanger or to ice formation. Verify the function code settings are correct and that bypass pump has been selected for FNXX. Also confirm the firmware version is valid for use with bypass pump operation. If a firmware change is required contact LG Aftermarket Service.

Multi V Water 5 is seeking flow confirmation by monitoring the circuit between terminals 5(L) and 6(N). When the flow switch closes confirming a minimum of 90% of rated flow is present (see Table 65), the circuit between terminal 5(L) and 6(N) is completed. If the flow leaving the heat exchanger falls below 80% of rated flow, the flow switch will open.

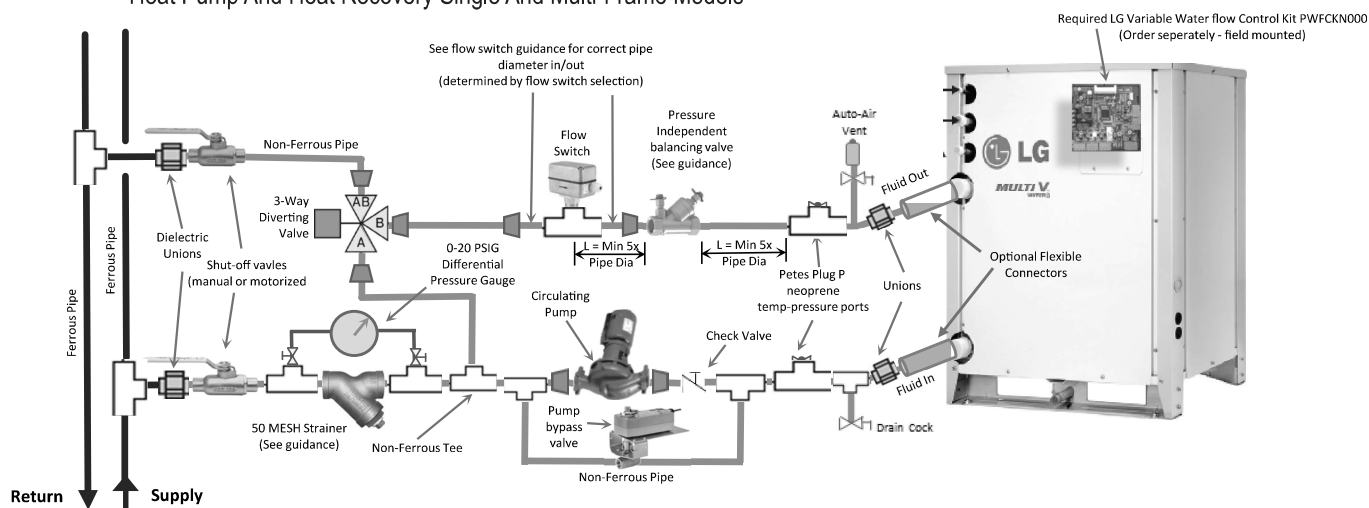
Note: when the flow switch opens signaling loss of flow, error code CH189 will be displayed on the Multi V Water 5 seven-segment display.

Upon flow confirmation, the compressor begins a soft-start and ramps up to a warm-up speed of approximately 30 Hz. After approximately two minutes the main controller adjusts the compressor speed to satisfy the building heating load. The VWFC kit does not modulate with low temperature fluid entering the heat exchanger while operating in heating mode. The voltage signal to the 3-way control valve remains at zero (0) volts.

The microprocessor instructs the compressor to slow down. When the compressor in the frame stops running, the 220-volt power to Terminals 1(L) and 2(N) will cease, closing the optional isolation valves.

Note: For valve malfunction and power loss safety logic see page 117

Figure 77: Entering Fluid Temperature < 50°F, 3-Way Control Valve and Constant Speed Pump Heat Pump And Heat Recovery Single And Multi-Frame Models



Note: Belimo ball valve orientation depicted. Valve port identification and installation orientation different for other manufacturers and Belimo globe valves.

Component Selection Guidance

Note: This information is not all inclusive and should not be your only source of technical information when engineering the hydronic system. ALWAYS refer to the selected manufacturer's device, engineering, installation, and start-up instructions. DO NOT rely on this information as the manufacturer's data may have changed. The data is provided for training purposes only. If any information presented here conflicts with information in the device manufacturer's published documentation, use the manufacturer's information.

LG Variable Water Control Kit (VWFC)

When the fluid temperature entering the heat exchanger is below 60°F, the LG Variable Water Flow Control (VWFC) Kit is required. The VWFC kit consists of a printed circuit board, and provisions are provided to power a 24-volt third party pressure independent control valve/actuator supplied by others. Reference sequence

