



National TAB

Project: St Anne Convent

Address: 1000 St. Anne Street Melbourne, KY 41059

Summary

2/8/2023

The scope of work includes measuring and establishing flow at 3 pumps, 15 balance valves, and pressure drop at HTX-1 + P&F-2. Each pump was placed into manual mode, and pressure drop was measured across the impellar. Pump Flows were calculated via comparing actual head pressure VS design head pressures listed on each pump tag. Pump #3 serves the cooling tower and the system is currently drained. Pump #6 was not requested but added on site. Pressure drop and balance valves were recorded at each daikin unit as found. GPM was calculated via TA balancing valve flowchart based on the pressure drops and valve positions observed. Each system is comprised of a group of daikin units, so system totals and individual unit flows were recorded. HTX-1 does not have any balance valves or ports. There are shut-off valves that are confirmed to be wide open, however there is no way to measure water flow via pressure drop.



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Pumps and P&F #2 (Initial Readings Only)

	Pump #1	Pump #2	Pump #6
Pump Off Pressure	12.8 ft	12.8 ft	1 ft
Inlet Pressure	27.1 ft	26.2	0 ft
Discharge Pressure	87.8 ft	86.6 ft	50.5 ft
Actual Diff Head Pressure	60.7 ft	60.4 ft	50.5 ft
Design Diff Head Pressure	55 ft	55 ft	40 ft
Actual GPM	342.7	343.5	208.3
Design GPM	360	360	240

Plate And Frame HX #2	
Inlet Pressure	86.5 ft
Outlet Pressure	85.1 ft
Total Pressure Drop	1.4 ft



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Daikin Water Flows (Initial Readings Only)

	Valve Position	Max Position	Valve Size	PD (PSI)	Design GPM	Actual GPM	%
Unit 1A	1.6	4.0	1.5"	11.1	18.9	19.3	102%
Unit 1B	1.6	4.0	1.5"	11.5	18.9	19.6	104%
Unit 1C	1.6	4.0	1.5"	11.8	18.9	19.9	105%
System 1 Total					56.7	58.8	104%
Unit 2A	1.6	4.0	1.5"	12.5	18.9	20.5	108%
Unit 2B	1.7	4.0	1.5"	12.9	18.9	21.9	116%
Unit 2C	1.7	4.0	1.5"	13.1	18.9	22.1	117%
System 2 Total					56.7	64.5	114%
Unit 3A	1.6	4.0	1.5"	12.2	18.9	20.2	107%
Unit 3B	1.6	4.0	1.5"	11.8	18.9	19.9	105%
Unit 3C	1.6	4.0	1.5"	12.6	18.9	20.6	109%
System 3 Total					56.7	60.7	107%
Unit 4A	4.0	4.0	1.5"	6.6	28.35	57.4	202%
Unit 4B	4.0	4.0	1.5"	3.8	28.35	43.6	154%
System 4 Total					56.7	101	178%
Unit 5A	3.2	4.0	1.5"	5.6	18.9	38.9	206%
Unit 5B	4.0	4.0	1.5"	5.5	18.9	52.4	277%
Unit 5C	3.3	4.0	1.5"	5.7	18.9	41.1	217%
System 5 Total					56.7	132.4	234%
System 6 WWHR-1	25	50	2"	61.1 (feet)	66	69.9	106%



Pump 1 Design Data



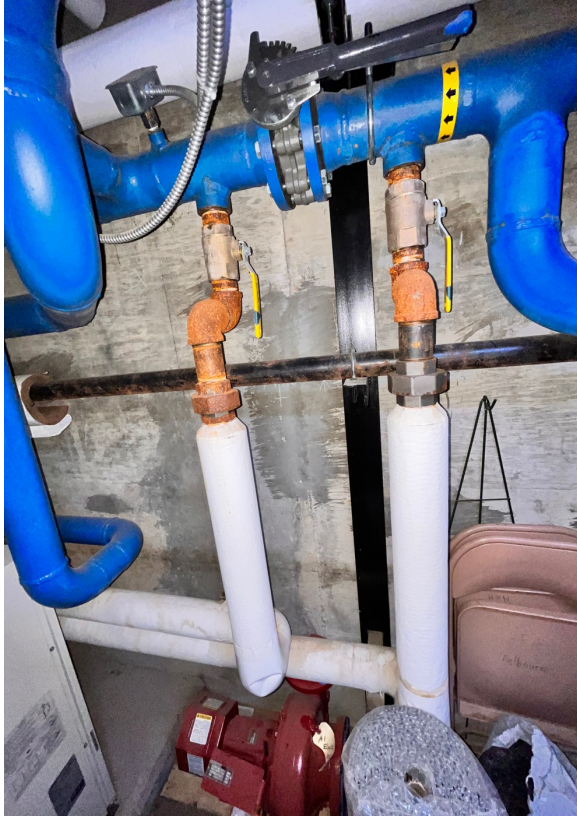
Pump 1 Motor Data



Pump 6 Design Data



Pump 6 Motor Data



Htx-1 at header does not have balance or control valves, only shut offs. All valves including bypass are 100% open.



There are three heat exchangers pictured here; #3 on top, #2 in the middle, #1 on bottom. There are no balance or control valves, only shut offs. All valves are 100% open.