Report By:

National TAB
1329 E. KEMPER ROAD
SUITE 4210
CINCINNATI, OH 45246

Report: PRELIM

Function: Test, Adjust, & Balance

Date: 02/02/2024

PROJECT

Valvoline (Bellevue, WI)

2171 MONROE RD

BELLEVUE, WI 54311

Client

Air Temperature Services

5301 Voges Road

Madison , WI 53718

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Project: Valvoline (Bellevue, WI)

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Project Summary

The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report is further detail about your building performance including recommendations and asset data. Our focus is to work with the trades to remedy any issues or deficiencies during the actual field balancing and not after the balancing has occurred to achieve a positive environment and outcome. The level of success is determined by the availability of the trades, parts needed, or time constraints.

Furnace Unit

The furnace was overridden to high speed and then measured at its terminal devices utilizing a flow hood and a velocity grid when necessary. The sum of these readings is equal to the total flow for the furnace. The total flow of each Furnace was then adjusted within tolerance of the specified design. Each terminal diffuser was balanced to within tolerance of the engineer's design volume utilizing the provided hand damper located at the takeoff of the main & branch trunk line(s). Any equipment that fell outside of this tolerance is noted throughout the report. The return airflow was unable to be successfully balanced on this system. Dampers were not installed on returns 1-1 and 1-2, so the return airflow could not be distributed evenly. Dampers will need to be installed to ensure proper pressurization in individual rooms. Of specific concern is the office, which has the correct supply but lacks return airflow. The system outside airflow was measured via an airfoil traverse. The damper position was set and marked at the appropriate setpoint.

Transfer Fan

The Transfer fan airflow was measured by reading the discharge air opening with a velocity grid and multiplying by the free area. Fan speed was then adjusted so that the airflow was within tolerance of design. Any equipment that fell outside of this tolerance is noted throughout the report.

Ceiling Exhaust Fan

The restroom ceiling exhaust fan was measured using a flow hood. If speed adjustment was provided, the fan speed was adjusted to within design tolerance. Any equipment that fell outside of this tolerance is noted throughout the report.

General Exhaust Fans w/ Grilles

The general exhaust fans were measured by reading the air intake with a flow hood and/or reading the intake air opening with a velocity grid and multiplying by the free area. Fan speed was then adjusted so that the airflow was within tolerance of design. Any equipment that fell outside of this tolerance is noted throughout the report. Both inline exhaust fans are mounted above hard ceiling in the shop area and are "accessible" through an access hatch. EF-3 can be reached for service with the correct body type, EF-2 may not be as accessible.

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Project: Valvoline (Bellevue, WI)

System/Unit: FAN - Exhaust

Asset: EF1 AREA:TOILET

Unit Data		
	Design	**Actual**
MFG	NA	LOREN COOK
Model Num	NA	GEMINI 140
Serial Num	-	615738
Configuration	CM	CEILING

Motor Data		
	Design	**Actual**
Horsepower	-	FRACTIONAL
Motor Rpm	970	970
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	0.4
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	100	91
Fan RPM	970	970
Fan Rotation	-	CORRECT
Motor RPM	-	970
System SetPt	-	HIGH SPEED (BLACK)
RL Voltage	-	121
RL Amperage	-	0.4

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Project: Valvoline (Bellevue, WI)

System/Unit: FAN - Exhaust

Asset: EF2 AREA:BUILDING EXHAUST

Unit Data		
	Design	**Actual**
MFG	NA	LOREN COOK
Model Num	NA	135SQN17DVF
Serial Num	-	NA
Configuration	-	HORIZONTAL INLINE

Motor Data		
	Design	**Actual**
Motor MFG	-	NA
Frame	-	NA
Horsepower	0.50	0.50
Motor Rpm	1436	NA
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	NA
Service Factor	-	NA

Test Data		
	Design	**Actual**
CFM	1665	1672
Fan RPM	1436	NA
Fan Rotation	-	NA
Motor RPM	-	NA
System SetPt	-	NA
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.50	NA
Fan Inlet SP	-	NA
Fan Discharge SP	-	ATM

Completed By: Michael McDonnell on 02/02/2024

Notes:
[1] INLINE FAN IS INSTALLED IN ATTIC SPACE BEHIND HARD CEILING. NOT ACCESSIBLE.

Written By: Michael McDonnell on 02/02/2024

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Project: Valvoline (Bellevue, WI)

System/Unit: FAN - Exhaust

Asset: EF3 AREA:BUILDING EXHAUST

Unit Data		
	Design	**Actual**
MFG	NA	LOREN COOK
Model Num	NA	120SQN17DVF
Serial Num	-	012SK76404-00/0003501
Configuration	-	HORIZONTAL INLINE

Motor Data		
	Design	**Actual**
Motor MFG	-	NA
Frame	-	NA
Horsepower	0.50	0.50
Motor Rpm	1376	NA
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	NA
Service Factor	-	NA

Test Data		
	Design	**Actual**
CFM	1055	1036
Fan RPM	1376	1055
Fan Rotation	-	CORRECT
Motor RPM	-	1055
System SetPt	-	57%
RL Voltage	-	121
RL Amperage	-	NA [1]
Total ESP	0.50	NA [1]
Fan Inlet SP	-	NA [1]
Fan Discharge SP	-	NA [1]

Completed By: Michael McDonnell on 02/02/2024

Notes:
[1] INLINE FAN MOUNTED IN ATTIC SPACE ABOVE HARD CEILING. NOT EASILY ACCESSIBLE. COULD NOT READ AMPERAGE AND VOLTS SAFELY. LIGHT SWITCH DISCONNECT.

Written By: Michael McDonnell on 02/02/2024

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Project: Valvoline (Bellevue, WI)

System/Unit: FAN - Exhaust

Asset: TF1 AREA:PIT

Unit Data		
	Design	**Actual**
MFG	NA	LOREN COOK
Model Num	NA	120SQN17DVF
Serial Num	-	012SK76404-00/000070
Configuration	-	VERTICAL INLINE

Motor Data		
	Design	**Actual**
Motor MFG	-	NA
Frame	-	NA
Horsepower	0.50	0.50
Motor Rpm	1344	1725
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	NL
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	1515	1587
Fan RPM	1344	1727
Fan Rotation	-	CORRECT
Motor RPM	-	1727
System SetPt	-	100%
RL Voltage	-	[1]
RL Amperage	-	[1]
Total ESP	0.50	0.404"
Fan Inlet SP	-	-0.374"
Fan Discharge SP	-	0.03"

Completed By: Michael McDonnell on 02/02/2024

Notes:
[1] COULD NOT READ AMPS AND VOLTS SAFELY; LIGHTSWITCH DISCONNECT.

Written By: Michael McDonnell on 02/02/2024

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Project: Valvoline (Bellevue, WI)

System/Unit: Split Sys Furnace

Asset: F1 AREA:OFFICE AREA

Unit Data		
	Design	**Actual**
MFG	NA	TRANE
Model Num	NA	S9X1B060U4PSBAB
Serial Num	-	23412UBWMF
Configuration	-	VERTICAL
Filter Size Size 1	-	16X20X1

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Horsepower	0.50	0.50
Motor Rpm	-	NL
Phase	1	1
Voltage	120	120
Amperage	-	11.8

Test Data		
	Design	**Actual**
SF CFM	1100	1094
Motor Speed SetPt	-	SPEED TAP 5
RL Voltage	-	121
RL Amperage	-	4.0
RA CFM	950	949
OA CFM	150	145

Performance Data		
	Design	**Actual**
Suction ESP	-	-0.171"
Discharge ESP	-	0.194"
Total ESP	0.50	0.365"

Completed By: Michael McDonnell on 02/02/2024

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Project:Valvoline (Bellevue, WI)

Split Sys Furnace

Diffuser Supply (GRD)

F1/OFFICE AREA

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
Furnace1-SGRD1	MECH	SG1	6	100	91	94	94.0
Furnace1-SGRD2	UTILITY	SD1	10	400	468	418	104.5
Furnace1-SGRD3	OFFICE	SD2	6	125	105	126	100.8
Furnace1-SGRD4	RR	SD2	6	75	132	74	98.7
Furnace1-SGRD5	WAITING	SD1	10	400	374	382	95.5
Total				1100	1170	1094	99.45%

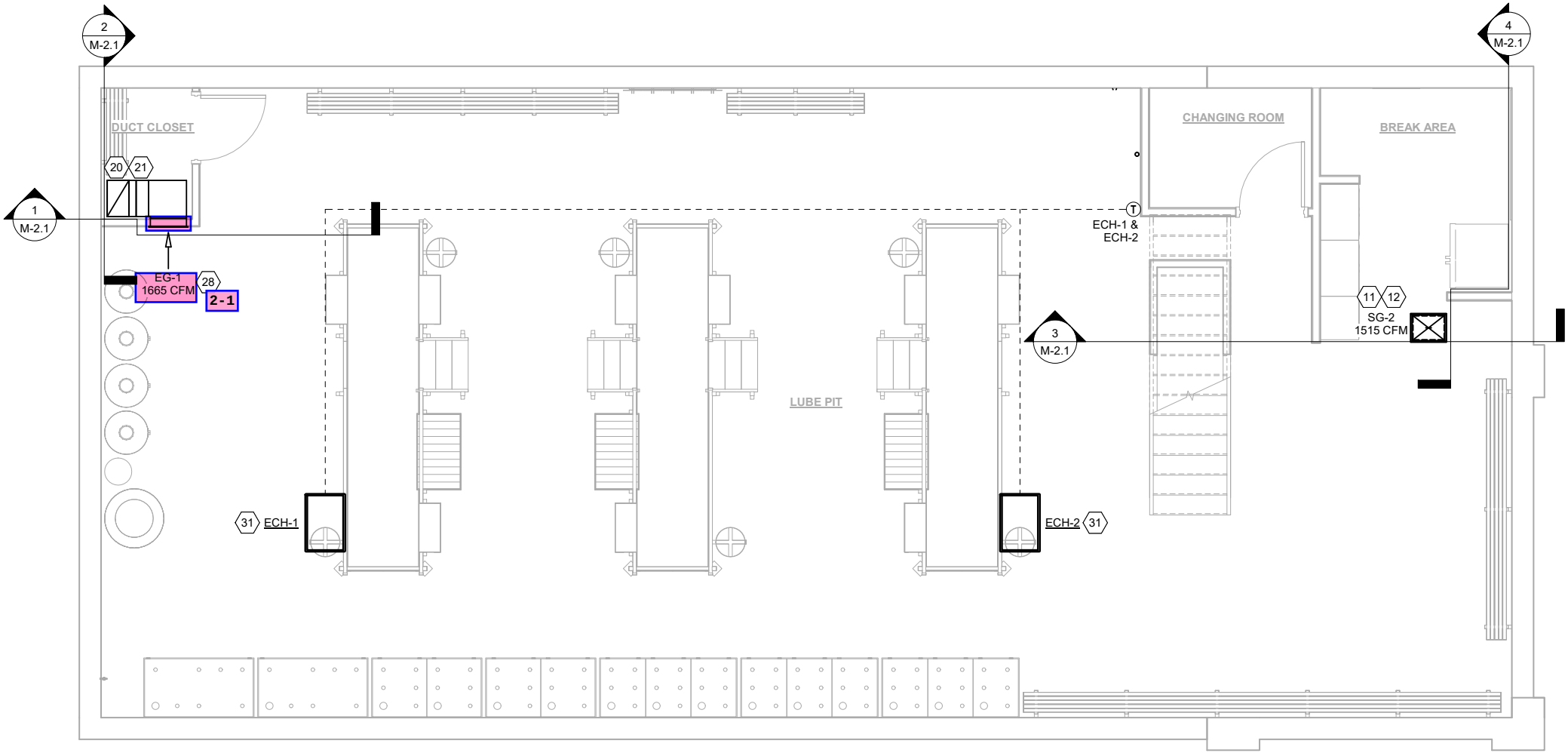
Diffuser Ret/Exh (GRD)

F1/OFFICE AREA

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
Furnace1-EGRD1	RG4	6	100	0.19	228	228	228	228.0
Furnace1-EGRD2	RG3	10	375	1.0	518	518	518	138.1
Furnace1-EGRD3	RG2	6	125	1.0	46	46	46	36.8
Furnace1-EGRD4	RG1	12	375	1.0	157	157	157	41.9
Total			975		949	949	949	97.33%

Completed By: Michael McDonnell on 02/02/2024

Asset	Notes	Date	Written By
Furnace1-EGRD1	[1] NO DAMPER INSTALLED	02/02/2024	Michael McDonnell
Furnace1-EGRD2	[1] NO DAMPER INSTALLED	02/02/2024	Michael McDonnell



LOWER LEVEL MECHANICAL PLAN

2
M-1.1
Scale: 1/4" = 1'-0"