

Report By:

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SUITE 4210
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Report: TAB Report
Function: Test, Adjust, & Balance
Date: 11/11/2025
Completed By: National TAB

PROJECT
11-17-25 QT #1149 GREENVILLE, SC

2890 LAURENS RD

GREENVILLE, SC 29607

Client

QUIKTRIP
4705 SOUTH 129TH EAST AVENUE
TULSA, OK 74134

National TAB

Project: 11-17-25 QT #1149 GREENVILLE, SC

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Project: 11-17-25 QT #1149 GREENVILLE, SC
Function: Test, Adjust, & Balance

Project Summary

Project Summary

The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report are further details about your building performance including recommendations, asset data, and pictures. 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, possible parts needed, or time constraints.

RTU's (Roof Top Units)

Each of the RTU's was measured with a flow hood to establish total flow. The total flow was then adjusted via the VFD so that airflow fell within design tolerances. All diffusers on the kitchen RTU were balanced to the engineer's design flow. The diffusers on the sales floor were only adjusted when there were noticeable issues present like drafting or dampers that were found completely closed. The Hoods On outside air rate was set by first establishing the typical QT set point at the Emerson controller and then making manually adjustments on the roof. The hoods off airflow setpoint was found by adjusting the damper position at the Emerson controller until the design airflow was achieved. Outside air was measured by reading the intake air opening with a velocity grid and multiplying by the free area. After completion of TAB all overrides were released.

Kitchen Exhaust Hood & Associated Fans

The kitchen exhaust fan was measured at the hood filter bay utilizing a velocity matrix and a manufacturer's correction factor. Each filter velocity is multiplied by the manufacturer's corrected area. The sum of these readings equals the total flow of the exhaust fans. The total flow of the exhaust was then adjusted to within tolerance of the design flow.

Restroom Exhaust Fans

The restroom exhaust fans were measured with a flow hood. The total flow was balanced for the fan with the exception of the new grille over the combi-oven, which was balanced to the listed design.

Final Building Tests

After completing the test and balance the final building pressure was measured. It was confirmed that the building pressure fell within acceptable tolerances and that the pressure measurement coincides with the actual and design net airflow. Any deviations from these standards are noted throughout the report. The hood capture was tested at the perimeter of the hood and the cook top level with the equipment heat on to ensure satisfactory hood capture and containment.

Issue List

- EF-1 Excessive Airflow
- EF-2 Low Flow
- Incorrect Kitchen Diffusers

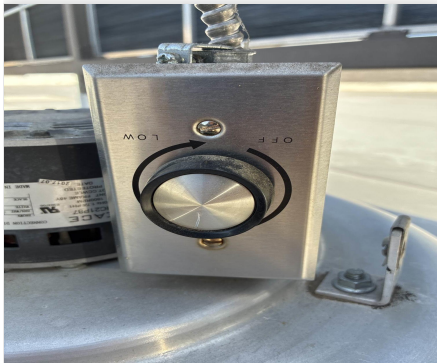


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Project Issue Information

Issue Name : EF-1 Excessive Airflow
Description : EF-1 is at the lowest speed setting and is exhausting more air than it needs to.
Created By : National TAB **Assigned To :** National TAB - Dan Hertenstein
Status : Open
Priority : InfoOnly **Asset Tag :** EF1
Originated Date : 11/19/2025 - Alex Bauer - National TAB

Project Issue File Details



11/19/2025



11/19/2025

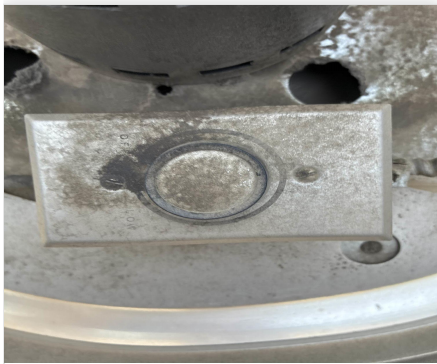


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Project Issue Information

Issue Name : EF-2 Low Flow
Description : EF-2 is at the highest speed setting and is not exhausting enough air.
Created By : National TAB **Assigned To :** National TAB - Dan Hertenstein
Status : Open
Priority : Low **Asset Tag :** EF2
Originated Date : 11/19/2025 - Alex Bauer - National TAB

Project Issue File Details



11/19/2025



11/19/2025



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Project Issue Information

Issue Name : Incorrect Kitchen Diffusers
Description : The kitchen diffusers 3-1 through 3-4 are not the Titus S1 diffuser with the controllable damper.
Created By : National TAB **Assigned To :** National TAB - Dan Hertenstein
Status : Open
Priority : Low **Asset Tag :** RT-3
Originated Date : 11/19/2025 - Alex Bauer - National TAB

Project Issue File Details

CHILLER, REGISTER, & DIFFUSER SCHEDULE

CHILLER	MANUFACTURER	MODEL	SERVICE	FACE SIZE	BOX SIZE	DESCRIPTION	NOTES
4	TITUS	330L	364637	18" X 18"	SEE PLAN	3/4" 20" SLAVE REGISTER CHILLER AL. W/TE	12
5	TITUS	302FS	36917	22" X 22"	SEE PLAN	DOUBLE REGISTER CHILLER AL. W/TE	13

NOTES
 1. REVIEW FOR CHILLER AL. DIFFUSERS FOR 18" X 18" & 22" X 22" SIZE.

11/19/2025



AIR BALANCE SCHEDULE

UNIT	AREA SERVED	HOOD ON OA		HOOD OFF OA		HOOD ON EXHAUST		HOOD OFF EXHAUST	
		DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
RTU 1	SALES	800	779	350	369				
RTU-2	SALES	800	744	350	327				
RTU-3	BOH/KITCHEN	800	793	350	341				
EF-1	WOMEN'S RR					225	311	225	311
EF-2	MEN'S RR					525	203	525	203
EF-3	HOOD					1350	1310	0	0
TOTALS		2400	2316	1050	1037	2100	1824	750	514

HOODS ON

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	2316
TOTAL EXHAUST	2100	1824
NET AIRFLOW	300	492

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.013
SIDE	0.0195
REAR	0.0202
AVERAGE	0.0176

HOODS OFF

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	1037
TOTAL EXHAUST	750	514
NET AIRFLOW	300	523

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0392
SIDE	0.0388
REAR	0.04
AVERAGE	0.0393

NOTES:

CheckList List

- 01: RTU's/AHU's
- 02: Exhaust Fans
- 03: Hoods
- 04: Final Tests



11-17-25 QT #1149 GREENVILLE, SC

CheckList Information

Name : 01: RTU's/AHU's **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 11/11/2025 - Trinity Dodds - National TAB

Completed Date : 11/19/2025 - Alex Bauer - National TAB

CheckList Item Details

RTU's/AHU's

Evaporator coils are clean?	Pass
-----------------------------	------

Comment:

Condenser coils are clean?	Pass
----------------------------	------

Comment:

Gas piping is installed and valves are turned on?	N/A
---	-----

Comment:

Unit free of noticeable noise and vibration	Pass
---	------

Comment:

Notes/Comments :

The layout on Facilibuild is different to what is in the field.

Date :11/19/2025



11-17-25 QT #1149 GREENVILLE, SC

CheckList Information

Name : 02: Exhaust Fans **Status :** Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 11/11/2025 - Trinity Dodds - National TAB
Completed Date : 11/19/2025 - Alex Bauer - National TAB

CheckList Item Details

EF's

Hinge kit installed installed on hood fan? Pass

Comment:

Flex conduit is long enough so that fan can be completely tilted back? Pass

Comment:

No major leakage around the fan base Pass

Comment:

Unit is free of noise and vibration Pass

Comment:

Notes/Comments :

See issues list.

Date :11/19/2025



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CheckList Information

Name : 03: Hoods **Status :** Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 11/11/2025 - Trinity Dodds - National TAB
Completed Date : 11/19/2025 - Alex Bauer - National TAB

CheckList Item Details

HOODS

Hood is free of alarms? Pass

Comment:

Hood is free of damage? Pass

Comment:

End panels are installed per prototype? N/A

Comment:



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CheckList Information

Name : 04: Final Tests **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 11/11/2025 - Trinity Dodds - National TAB

Completed Date : 11/19/2025 - Alex Bauer - National TAB

CheckList Item Details

FINAL CHECKS

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

OVEN, FRYER.

List smoke candle type used

Comment:

SMOKE PELLET.

Smoke test capture % - Perimeter of hood

Comment:

100%

Smoke test capture % - Top of cooking surface

Comment:

100%

WITNESS

Date test was completed

11/19/2025

Comment:

TAB tech name / Firm

Comment:

ALEX BAUER/NTAB

Site super name / Firm

Comment:

NA

Owner representative name / Firm (if Applicable)

Comment:

NA

BUILDING PRESSURE

Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)

Comment:



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Project: 11-17-25 QT #1149 GREENVILLE, SC

System/Unit: AHU/RTU

Asset: RT-1

AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	201711-ANEK16487
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	44.5X22.5
Num Final Filter 1	2
Final Filter Size 1	19.5X46.5

Motor Data	
	Actual
Motor MFG	NA
Frame	NA
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	NA

Test Data		
	Design	Actual
SF CFM	4200	4105
SF RPM	-	DD
OA CFM (Hoods On)	800	779
OA CFM (Hoods Off)	350	369
RL Voltage	-	79.3 VFD
RL Amperage	-	7.22 VFD
VFD Max SetPt	-	33 Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	26%

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.32"
Fan Suction SP	-	-0.43"
Fan Discharge SP	-	0.37"
Total ESP	-	0.75"
Fan Total SP	-	0.80"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Completed By: Alex Bauer on 11/19/2025

Notes:
RTU-1 is actually RTU-2 on the site. Facilibuild is incorrect.

Written By: Alex Bauer on 11/19/2025



National TAB

Project: 11-17-25 QT #1149 GREENVILLE, SC

System/Unit: AHU/RTU

Asset: RT-2

AREA: SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	201711-ANEK16488
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	44.5X22.5
Num Final Filter 1	2
Final Filter Size 1	19.5X46.5

Motor Data	
	Actual
Motor MFG	NA
Frame	NA
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	NA

Test Data		
	Design	Actual
SF CFM	4200	4201
SF RPM	-	DD
OA CFM (Hoods On)	800	744
OA CFM (Hoods Off)	350	327
RL Voltage	-	79.5 VFD
RL Amperage	-	7.24 VFD
VFD Max SetPt	-	33 Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	0.125"

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.45"
Fan Suction SP	-	-0.45"
Fan Discharge SP	-	0.36"
Total ESP	-	0.90"
Fan Total SP	-	0.81"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Completed By: Alex Bauer on 11/19/2025

Notes:
RTU-2 is actually RTU-3 on the site. Facilibuild is incorrect.

OA for the hood off was set manually. The gap is 0.125" (1/8").

Written By: Alex Bauer on 11/19/2025



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Project: 11-17-25 QT #1149 GREENVILLE, SC

System/Unit: AHU/RTU

Asset: RT-3

AREA:BOH/KITCHEN

Unit Data	
	Actual
MFG	AAON
Serial Num	201711-ANEK16486
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	22.5X44.5
Num Final Filter 1	2
Final Filter Size 1	19.5X46.5

Motor Data	
	Actual
Motor MFG	NA
Frame	NA
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	NA

Test Data		
	Design	Actual
SF CFM	4200	3943
SF RPM	-	DD
OA CFM (Hoods On)	800	793
OA CFM (Hoods Off)	350	341
RL Voltage	-	61 VFD
RL Amperage	-	6.89 VFD
VFD Max SetPt	-	30 Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	26%

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.31"
Fan Suction SP	-	-0.40"
Fan Discharge SP	-	0.31"
Total ESP	-	0.71"
Fan Total SP	-	0.71"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Completed By: Alex Bauer on 11/19/2025

Notes:

RTU-3 is actually RTU-1 on the site. Facilibuild is incorrect.

[1] INCORRECT KITCHEN DIFFUSERS/

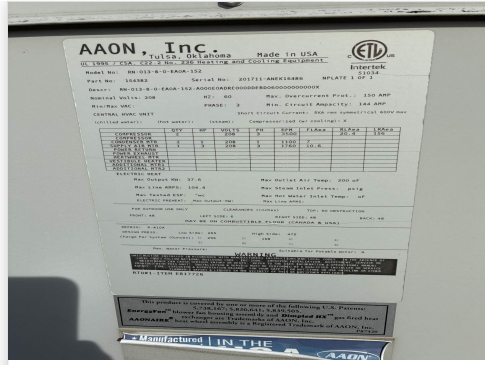
[2] DAMPERS INACCESSIBLE.

Written By: Michael McDonnell on 12/15/2025

Unit Data - PHOTO LOG



11/19/2025



11/19/2025



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Project:11-17-25 QT #1149 GREENVILLE, SC

AHU/RTU

Diffuser Supply (GRD)

RT-3/BOH/KITCHEN

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	SUPPORT SERVICE	SI	12"	800	1	1271	1217	922	115.3
SGRD2	SUPPORT SERVICE	SI	12"	800	1	1121	1121	847	105.9
SGRD3	SUPPORT SERVICE	SI	12"	800	1	1047	1047	771	96.4
SGRD4	SUPPORT SERVICE	SI	12"	800	1	867	867	669	83.6
SGRD5	DOCK	ES	12"	750	1	693	693	536	71.5
SGRD6	WORKROOM	ES	8"	250	1	272	272	198	79.2
Total				4200		5271	5217	3943	93.88%



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Project: 11-17-25 QT #1149 GREENVILLE, SC

System/Unit: FAN - Exhaust

Asset: EF1

AREA:WOMEN'S RR

Unit Data		
	Design	Actual
MFG	NA	COOK
Model Num	NA	90 ACEH 90C15DH
Serial Num	-	044SH27681- 00/0000701
Type	-	VERTICAL
Configuration	-	UPBLAST

Motor Data		
	Design	Actual
Motor MFG	-	QUEACE
Frame	-	48Y
Horsepower	-	0.125
Motor Rpm	-	1600
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	1.7
Service Factor	-	1

Test Data		
	Design	Actual
CFM	225	311
Fan RPM	-	DD
Fan Rotation	-	CCW
Motor RPM	-	DD
System SetPt	-	LOW
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	0.36"
Fan Inlet SP	-	-0.36"
Fan Discharge SP	-	ATMO

Completed By: Alex Bauer on 11/19/2025

Unit Data - PHOTO LOG



11/19/2025



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Project: 11-17-25 QT #1149 GREENVILLE, SC

System/Unit: FAN - Exhaust

Asset: EF2

AREA: MEN'S RR/COMBI

Unit Data		
	Design	Actual
MFG	NA	COOK
Model Num	NA	120 ACE 120C13D
Serial Num	-	044SH27681- 00/0002101
Type	-	VERTICAL
Configuration	-	UPBLAST

Test Data		
	Design	Actual
CFM	525	203
Fan RPM	-	DD
Fan Rotation	-	CCW
Motor RPM	-	DD
System SetPt	-	MAX
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	0.19"
Fan Inlet SP	-	-0.19"
Fan Discharge SP	-	ATMO

Motor Data		
	Design	Actual
Motor MFG	-	QUEACE
Frame	-	48Y
Horsepower	-	0.25
Motor Rpm	-	1550
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	3.3
Service Factor	-	1

Completed By: Alex Bauer on 11/19/2025

Notes:

[1] FAN SPEED MAXIMIZED, UNABLE TO REACH DESIGN AIRFLOW.

Written By: Michael McDonnell on 12/15/2025

Unit Data - PHOTO LOG



11/19/2025



National TAB

Project:11-17-25 QT #1149 GREENVILLE, SC

Diffuser Ret/Exh (GRD)

EF2/MEN'S RR/COMBI

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	SUPPORT SERVICE	RI	8"	150	1	85	85	85	56.7
Total				150		85	85	85	56.67%



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Project: 11-17-25 QT #1149 GREENVILLE, SC

System/Unit: FAN - Exhaust

Asset: EF3

AREA:KITCHEN HD

Unit Data		
	Design	Actual
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	7644854
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	HSSA
Frame	-	48
Horsepower	1/2	0.5
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	6.2
Service Factor	-	1

Test Data		
	Design	Actual
CFM	1350	1310
Fan RPM	-	DD
Fan Rotation	-	CCW
Motor RPM	-	DD
System SetPt	-	54.8 Hz
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	0.73"
Fan Inlet SP	-	-0.73"
Fan Discharge SP	-	ATMO

Completed By: Alex Bauer on 11/19/2025

Unit Data - PHOTO LOG



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Project: 11-17-25 QT #1149 GREENVILLE, SC

System/Unit: Kitchen Hood Type I

Asset: HD1

AREA:GRIDDLE

Unit Data

	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030ND-2-F	6030 ND-2
Job / Serial Num	-	7644854
Type	-	TYPE I CANOPY
Hood length	-	108"
Hood Width	-	60"

Test Data Exhaust

	Design	Actual
Filter Type	-	BAFFLE FILTERS
Filter Size 1	-	16X20
Filter Qty 1	-	6
Filter AK factor size 1	-	2.08
Filter Total AK Area	-	12.48
Filter1 FPM	-	107
Filter2 FPM	-	112
Filter3 FPM	-	110
Filter4 FPM	-	110
Filter5 FPM	-	101
Filter6 FPM	-	90
Filter Ave FPM(corr)	-	105
CFM	1350	1310

Cooking Equipment

	Actual
Item 1	OVEN
Item 2	FRYER

Completed By: Alex Bauer on 11/19/2025

