Report By:

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

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 11/17/2025

Completed By: National TAB

PROJECT

11-17-25 QT #1418 SCOTTSDALE, AZ

8780 E McDOWELL RD

SCOTTSDALE, AZ 85257

Client

QUIKTRIP

4705 SOUTH 129TH EAST AVENUE

TULSA, OK 74134

National TAB

Project: 11-17-25 QT #1418 SCOTTSDALE, AZ

Table Of Contents

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

- DAMPER INACCESSIBLE
- DAMPER INACCESSIBLE, SW ENTRANCE TOO WARM

11-17-25 QT #1418 SCOTTSDALE, AZ

Project Issue Information

Issue Name :	DAMPER INACCESSIBLE		
Description :	In order to properly balance kitchen grilles, ceiling tiles must not be installed. When installed, the lighting, hood, and metal rails make the tiles immobile and dampers inaccessible.		
Created By :	National TAB	**Assigned To :**	National TAB - Dan Hertenstein
Status :	Open		
Priority :	Low	**Asset Tag :**	SGRD4
Originated Date :	11/16/2025 - Christine Weale - National TAB		

11-17-25 QT #1418 SCOTTSDALE, AZ

Project Issue Information

Issue Name : DAMPER INACCESSIBLE, SW ENTRANCE TOO WARM

Description : Damper is not where it's supposed to be, and is inaccessible. Air flow is too low at SW front door, area is uncomfortable.

Created By :	National TAB	**Assigned To :**	National TAB - Dan Hertenstein
Status :	Open		
Priority :	Medium	**Asset Tag :**	SGRD1
Originated Date :	11/14/2025 - Christine Weale - National TAB		

Project Issue File Details

11/15/2025

11/15/2025

NATIONAL TAB

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	866	350	358				
RTU-2	SALES	800	873	350	355				
RTU-3	BOH/KITCHEN	800	853	350	348				
EF-1	RR/JANITOR					750	698	750	698
EF-3	HOOD					1350	1410	0	0
TOTALS		2400	2592	1050	1061	2100	2108	750	698

HOODS ON

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	2592
TOTAL EXHAUST	2100	2108
NET AIRFLOW	300	484

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.004
SIDE	0.003
REAR	0.005
AVERAGE	**0.004**

HOODS OFF

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	1061
TOTAL EXHAUST	750	698
NET AIRFLOW	300	363

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.002
SIDE	0.003
REAR	0.005
AVERAGE	**0.0033**

NOTES:

CheckList List

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

11-17-25 QT #1418 SCOTTSDALE, AZ

CheckList Information

Name :	01: RTU’s/AHU’s	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	10/24/2025 - Trinity Dodds - National TAB		
Completed Date :	11/15/2025 - Christine Weale - 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?	Pass
Comment:	
Unit free of noticeable noise and vibration	Pass
Comment:	

11-17-25 QT #1418 SCOTTSDALE, AZ

CheckList Information

Name :	02: Exhaust Fans	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	10/24/2025 - Trinity Dodds - National TAB		
Completed Date :	11/15/2025 - Christine Weale - 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:	

11-17-25 QT #1418 SCOTTSDALE, AZ

CheckList Information

Name :	03: Hoods	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	10/24/2025 - Trinity Dodds - National TAB		
Completed Date :	11/15/2025 - Christine Weale - 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?	Pass
Comment:	

11-17-25 QT #1418 SCOTTSDALE, AZ

CheckList Information

Name : 04: Final Tests **Status :** Not Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/24/2025 - Trinity Dodds - National TAB

CheckList Item Details

FINAL CHECKS

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

Fryers and dual oven.

List smoke candle type used

Comment:

N/A - observed smoke from cooking

Smoke test capture % - Perimeter of hood

Comment:

100

Smoke test capture % - Top of cooking surface

Comment:

100

WITNESS

Date test was completed 11/14/2025

Comment:

TAB tech name / Firm

Comment:

Christine Weale, NTI

Site super name / Firm

Comment:

Todd Palmer, T-Built

Owner representative name / Firm (if Applicable)

Comment:

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:

Yes; however, West side door is neutral and goes negative when restroom doors are opened due to exhaust fan (EF1) running too high.

National TAB

Project: 11-17-25 QT #1418 SCOTTSDALE, AZ

System/Unit: AHU/RTU

Asset: RT-1 AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	202302-ANEK25454
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X22
Num Final Filter 1	2
Final Filter Size 1	46X19.5X2

Motor Data	
	Actual
Motor MFG	NL
Frame	48Y
Horsepower	3.0
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4193
SF RPM	-	49.5 HZ
OA CFM (Hoods On)	800	866
OA CFM (Hoods Off)	350	358
RL Voltage	-	179.0
RL Amperage	-	8.22
VFD Max SetPt	-	82.5
VFD Min SetPt	-	24
OA Damper Position (Hoods On)	-	46.0
OA Damper Position (Hoods Off)	-	0.0

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.59"
Fan Suction SP	-	-0.86"
Fan Discharge SP	-	0.25"
Total ESP	-	0.84"
Fan Total SP	-	1.11"

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

Completed By: Christine Weale on 11/28/2025

Unit Data - PHOTO LOG

11/15/2025

12/08/2025

National TAB

Project: 11-17-25 QT #1418 SCOTTSDALE, AZ

System/Unit: AHU/RTU

Asset: RT-2 AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	202302-ANEK25455
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X22
Num Final Filter 1	2
Final Filter Size 1	46X19.5X2

Motor Data	
	Actual
Motor MFG	NL
Frame	NL
Horsepower	3.0
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

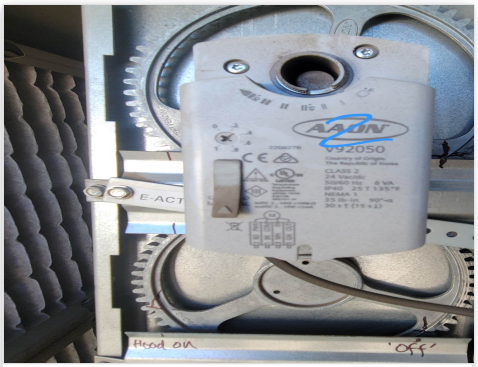
Test Data		
	Design	**Actual**
SF CFM	4200	4032
SF RPM	-	49.5 HZ
OA CFM (Hoods On)	800	873
OA CFM (Hoods Off)	350	355
RL Voltage	-	179.7
RL Amperage	-	8.45
VFD Max SetPt	-	82.5
VFD Min SetPt	-	24.0
OA Damper Position (Hoods On)	-	46.0
OA Damper Position (Hoods Off)	-	0.0

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.47"
Fan Suction SP	-	-0.73"
Fan Discharge SP	-	0.46"
Total ESP	-	0.93"
Fan Total SP	-	1.19"

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

Completed By: Christine Weale on 11/28/2025

Unit Data - PHOTO LOG



12/08/2025

11/15/2025

National TAB

Project: 11-17-25 QT #1418 SCOTTSDALE, AZ

System/Unit: AHU/RTU

Asset: RT-3 AREA:BOH/KITCHEN

Unit Data	
	Actual
MFG	AAON
Serial Num	202302-ANEK25456
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X22
Num Final Filter 1	2
Final Filter Size 1	46X19.5X2

Motor Data	
	Actual
Motor MFG	NL
Frame	NL
Horsepower	3.0
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

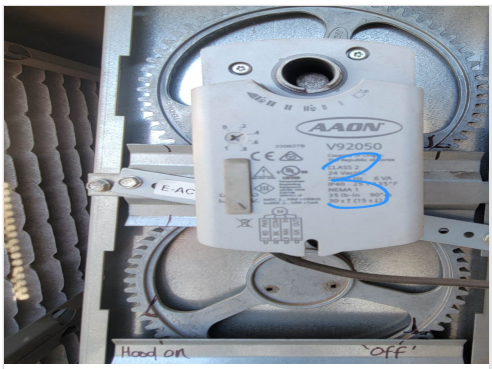
Test Data		
	Design	**Actual**
SF CFM	4200	4205
SF RPM	-	47.04 HZ
OA CFM (Hoods On)	800	853
OA CFM (Hoods Off)	350	348
RL Voltage	-	164.0
RL Amperage	-	8.1
VFD Max SetPt	-	78.4
VFD Min SetPt	-	24.0
OA Damper Position (Hoods On)	-	46.0
OA Damper Position (Hoods Off)	-	0.0

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.57"
Fan Suction SP	-	-0.84"
Fan Discharge SP	-	0.25"
Total ESP	-	0.82"
Fan Total SP	-	1.09"

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

Completed By: Christine Weale on 11/28/2025

Unit Data - PHOTO LOG



12/08/2025

11/15/2025

National TAB

Project:11-17-25 QT #1418 SCOTTSDALE, AZ

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	847	847	847	105.9
SGRD2	SUPPORT SERVICE	SI	12"	800	1	828	828	828	103.5
SGRD3	SUPPORT SERVICE	SI	12"	800	1	745	745	745	93.1
SGRD4	SUPPORT SERVICE	SI	12"	800	1	693	693	693	86.6
SGRD5	WORKROOM	ES	10"	500	1	508	508	508	101.6
SGRD6	WORKROOM	ES	10"	500	1	584	584	584	116.8
Total				4200		4205	4205	4205	100.12%

National TAB

Project: 11-17-25 QT #1418 SCOTTSDALE, AZ

System/Unit: FAN - Exhaust

Asset: EF1 AREA:RR/JANITOR

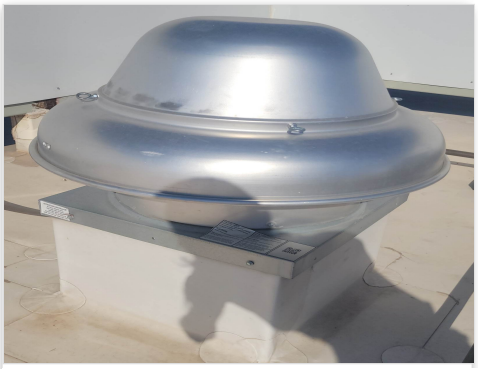
Unit Data		
	Design	**Actual**
MFG	NA	CAPTIVEAIRE
Model Num	NA	DR50HFA
Serial Num	-	5996844
Type	-	DOWNBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	HSSA
Frame	-	48Y
Horsepower	-	0.75
Motor Rpm	-	1625
Phase	-	1
Voltage (rated)	-	115/230
Amperage (rated)	-	8.4
Service Factor	-	1.0

Test Data		
	Design	**Actual**
CFM	750	698
Fan RPM	-	N/A
Fan Rotation	-	CCW
Motor RPM	-	N/A
System SetPt	-	LOW
RL Voltage	-	N/A
RL Amperage	-	7.02
Total ESP	-	0.43"
Fan Inlet SP	-	-0.43"
Fan Discharge SP	-	ATMS

Completed By: Christine Weale on 11/28/2025

Unit Data - PHOTO LOG



11/15/2025

National TAB

Project:11-17-25 QT #1418 SCOTTSDALE, AZ

Diffuser Ret/Exh (GRD)

EF1/RR/JANITOR

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EGRD4	COMBI-OVEN	RI	8"	150	1	373	373	184	122.7
Total				150		373	373	184	122.67%

National TAB

Project: 11-17-25 QT #1418 SCOTTSDALE, AZ

System/Unit: FAN - Exhaust

Asset: EF3 AREA:KITCHEN HD

Unit Data		
	Design	**Actual**
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	7662831
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	NL
Horsepower	1/2	0.5
Motor Rpm	-	1800
Phase	-	3
Voltage (rated)	-	208
Amperage (rated)	-	3.8
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	1350	1410
Fan RPM	-	1404
Fan Rotation	-	CCW
Motor RPM	-	1404
System SetPt	-	58.8 HZ
RL Voltage	-	214.3
RL Amperage	-	2.67
Total ESP	-	0.43"
Fan Inlet SP	-	0.43"
Fan Discharge SP	-	ATMS

Completed By: Christine Weale on 11/28/2025

National TAB

Project: 11-17-25 QT #1418 SCOTTSDALE, AZ

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:GRIDDLE

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030ND-2-F	6030ND-2-F
Job / Serial Num	-	7662831
Type	-	TYPE I CANOPY
Hood length	-	108"
Hood Width	-	60"

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	CAPTRATE SOLO
Filter Size 1	-	16X20
Filter Qty 1	-	6
Filter AK factor size 1	-	2.08
Filter Total AK Area	-	12.48
Filter1 FPM	-	123
Filter2 FPM	-	123
Filter3 FPM	-	112
Filter4 FPM	-	104
Filter5 FPM	-	108
Filter6 FPM	-	108
Filter Ave FPM(corr)	-	113
CFM	1350	1410

Cooking Equipment	
	Actual
Item 1	FRYERS
Item 2	DUAL OVEN

Completed By: Christine Weale on 11/15/2025

Unit Data - PHOTO LOG

11/15/2025