Report By:

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

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 02/10/2026

Completed By: National TAB

PROJECT

02-09-26 QT #0400 TEMPE, AZ

2111 W. UNIVERSITY DR.

TEMPE, AZ

Client

QUIKTRIP

4705 SOUTH 129TH EAST AVENUE

TULSA, OK 74134

National TAB

Project: 02-09-26 QT #0400 TEMPE, 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

- RTU-3 Diffusers SGRD 3-1 and 3-2 are not intalled

02-09-26 QT #0400 TEMPE, AZ

Project Issue Information

Issue Name :	RTU-3 Diffusers SGRD 3-1 and 3-2 are not intalled		
Description :	SGRD 3-1 and 3-2 are not installed. This airflow was proportionally distributed to the remaining diffusers to maintain the total design for the unit.		
Created By :	National TAB	**Assigned To :**	National TAB - Dan Hertenstein
Status :	Open		
Priority :	InfoOnly	**Asset Tag :**	RT-3
Originated Date :	02/10/2026 - Ethan Van Orden - National TAB		

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	836	350	337				
RTU-2	SALES	800	808	350	351				
RTU-3	BOH/KITCHEN	800	752	350	379				
EF-1	WOMEN'S RR					225	220	225	220
EF-2	MEN'S RR					525	529	525	529
EF-3	HOOD					1350	1347	0	0
TOTALS		2400	2396	1050	1067	2100	2096	750	749

HOODS ON

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	2396
TOTAL EXHAUST	2100	2096
NET AIRFLOW	300	300

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0127
SIDE	0.0099
REAR	0.0131
AVERAGE	**0.0119**

HOODS OFF

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	1067
TOTAL EXHAUST	750	749
NET AIRFLOW	300	318

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0182
SIDE	0.0211
REAR	0.0156
AVERAGE	**0.0183**

NOTES:

CheckList List

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

02-09-26 QT #0400 TEMPE, AZ

CheckList Information

Name :	01: RTU’s/AHU’s	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	11/19/2025 - Trinity Dodds - National TAB		
Completed Date :	02/10/2026 - Ethan Van Orden - 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:	

02-09-26 QT #0400 TEMPE, AZ

CheckList Information

Name :	02: Exhaust Fans	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	11/19/2025 - Trinity Dodds - National TAB		
Completed Date :	02/10/2026 - Ethan Van Orden - 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:	

02-09-26 QT #0400 TEMPE, AZ

CheckList Information

Name :	03: Hoods	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	11/19/2025 - Trinity Dodds - National TAB		
Completed Date :	02/10/2026 - Ethan Van Orden - 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:	

02-09-26 QT #0400 TEMPE, AZ

CheckList Information

Name :	04: Final Tests	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	11/19/2025 - Trinity Dodds - National TAB		
Completed Date :	02/10/2026 - Ethan Van Orden - National TAB		

CheckList Item Details

FINAL CHECKS

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

Fryer

List smoke candle type used

Comment:

Smoke Bomb

Smoke test capture % - Perimeter of hood

Comment:

100%

Smoke test capture % - Top of cooking surface

Comment:

100%

WITNESS

Date test was completed	02/10/2026

Comment:

TAB tech name / Firm

Comment:

Ethan V/NTI

Site super name / Firm

Comment:

Owner representative name / Firm (if Applicable)

Comment:

QT

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)	Pass

Comment:

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Project: 02-09-26 QT #0400 TEMPE, AZ

System/Unit: AHU/RTU

Asset: RT-1 AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	201709-ANEL16310
Model Num	RN-015-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X22.5
Num Final Filter 1	2
Final Filter Size 1	46X20

Motor Data	
	Actual
Motor MFG	NL
Frame	NL
Horsepower	5
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	16.7

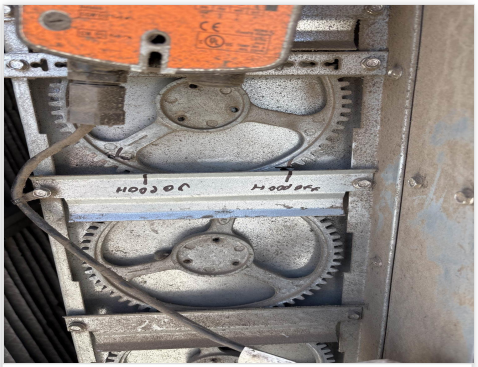
Test Data		
	Design	**Actual**
SF CFM	4200	4469
SF RPM	-	1126
OA CFM (Hoods On)	800	836
OA CFM (Hoods Off)	350	337
RL Voltage	-	105@VFD
RL Amperage	-	8.7@VFD
VFD Max SetPt	-	38.4HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	22%

Performance Data	
	Actual
MA Plenum SP	-0.47”
Fan Suction SP	-0.73”
Fan Discharge SP	0.32”
Total ESP	0.79"
Fan Total SP	1.05"

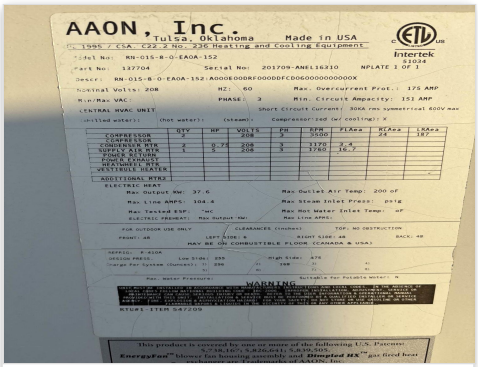
General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Completed By: Ethan Van Orden on 02/10/2026

Unit Data - PHOTO LOG



02/10/2026



02/10/2026

02/10/2026

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Project: 02-09-26 QT #0400 TEMPE, AZ

System/Unit: AHU/RTU

Asset: RT-2 AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	201709-ANEL16311
Model Num	RN-015-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X22.5
Num Final Filter 1	2
Final Filter Size 1	46X20

Motor Data	
	Actual
Motor MFG	NL
Frame	NL
Horsepower	5
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	16.7

Test Data		
	Design	**Actual**
SF CFM	4200	4341
SF RPM	-	1179
OA CFM (Hoods On)	800	808
OA CFM (Hoods Off)	350	351
RL Voltage	-	117@VFD
RL Amperage	-	9.7@VFD
VFD Max SetPt	-	40.2HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	26%

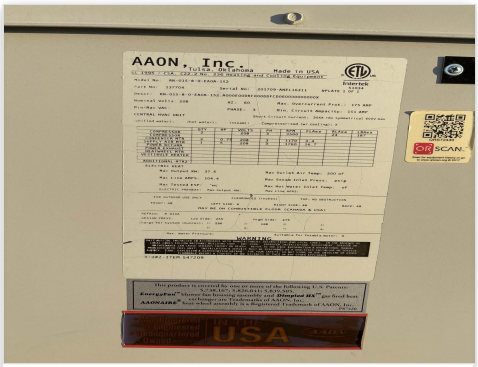
Performance Data	
	Actual
MA Plenum SP	-0.56”
Fan Suction SP	-0.82”
Fan Discharge SP	0.74”
Total ESP	1.3"
Fan Total SP	1.56"

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

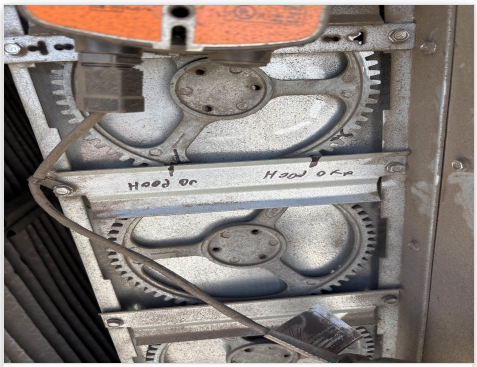
Completed By: Ethan Van Orden on 02/10/2026

Unit Data - PHOTO LOG

02/10/2026



02/10/2026



02/10/2026

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Project: 02-09-26 QT #0400 TEMPE, AZ

System/Unit: AHU/RTU

Asset: RT-3 AREA:BOH/KITCHEN

Unit Data	
	Actual
MFG	AAON
Serial Num	201709-ANEK16312
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X22.5
Num Final Filter 1	2
Final Filter Size 1	45X20

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

Test Data		
	Design	**Actual**
SF CFM	4200	4206
SF RPM	-	1144
OA CFM (Hoods On)	800	752
OA CFM (Hoods Off)	350	379
RL Voltage	-	117@VFD
RL Amperage	-	8.6@VFD
VFD Max SetPt	-	39HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	22%

Performance Data	
	Actual
MA Plenum SP	-0.57”
Fan Suction SP	-0.83”
Fan Discharge SP	0.58”
Total ESP	1.15"
Fan Total SP	1.41"

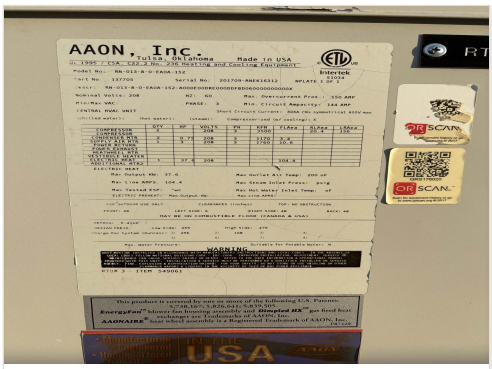
General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Completed By: Ethan Van Orden on 02/10/2026

Notes:
Diffuser 1 and 2 are not installed the 200 CFM was added to other diffusers for total air flow

Written By: Ethan Van Orden on 02/10/2026

Unit Data - PHOTO LOG



02/10/2026

02/10/2026

02/10/2026

National TAB

Project:02-09-26 QT #0400 TEMPE, 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	SALES	ES	12"	100					-
SGRD2	SALES	ES	12"	100					-
SGRD3	SUPPORT SERVICE	SI	12"	800	1	585	788	788	98.5
SGRD4	SUPPORT SERVICE	SI	12"	800	1	783	842	842	105.3
SGRD5	SUPPORT SERVICE	SI	12"	800	1	924	862	862	107.8
SGRD6	SUPPORT SERVICE	SI	12"	800	1	802	841	841	105.1
SGRD7	DOCK	ES	12"	650	1	867	721	721	110.9
SGRD8	WORKROOM	ES	8"	150	1	108	152	152	101.3
Total				4200		4069	4206	4206	100.14%

Completed By: Ethan Van Orden on 02/10/2026

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Project: 02-09-26 QT #0400 TEMPE, AZ

System/Unit: FAN - Exhaust

Asset: EF1 AREA:WOMEN'S RR

Unit Data	
	Actual
MFG	COOK
Model Num	90 ACEH 90C15DH
Serial Num	346SH25446-00/0000701
Type	DOWNBLAST
Configuration	VERTICAL

Motor Data	
	Actual
Motor MFG	USMOTORS
Frame	48Y
Horsepower	0.125
Motor Rpm	1550
Phase	1
Voltage (rated)	115
Amperage (rated)	1.7
Service Factor	NL

Test Data		
	Design	**Actual**
CFM	225	220
Fan Rotation	-	CCW
System SetPt	-	LOW
RL Amperage	-	0.47
Total ESP	-	0.19”
Fan Inlet SP	-	-0.19”
Fan Discharge SP	-	ATMS

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Unit Data - PHOTO LOG

02/10/2026

02/10/2026

02/10/2026

National TAB

Project: 02-09-26 QT #0400 TEMPE, AZ

System/Unit: FAN - Exhaust

Asset: EF2 AREA:MEN'S RR/COMBI

Unit Data	
	Actual
MFG	COOK
Model Num	101 ACE 101C15D
Serial Num	346SH25446-00/0002101
Type	DOWNBLAST
Configuration	VERTICAL

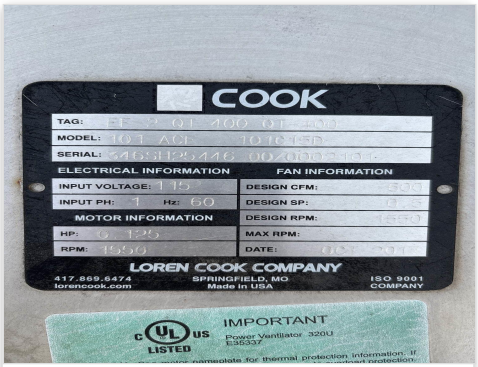
Motor Data	
	Actual
Motor MFG	USMOTORS
Frame	48Y
Horsepower	0.125
Motor Rpm	1550
Phase	1
Voltage (rated)	115
Amperage (rated)	1.7
Service Factor	NL

Test Data		
	Design	**Actual**
CFM	525	529
Fan Rotation	-	CCW
System SetPt	-	DIAL
RL Amperage	-	1.00
Total ESP	-	0.32”
Fan Inlet SP	-	-0.32”
Fan Discharge SP	-	ATMS

Completed By: Ethan Van Orden on 02/10/2026

Unit Data - PHOTO LOG

02/10/2026



02/10/2026

02/10/2026

National TAB

Project:02-09-26 QT #0400 TEMPE, AZ

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	147	147	147	98.0
Total				150		147	147	147	98%

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Project: 02-09-26 QT #0400 TEMPE, AZ

System/Unit: FAN - Exhaust

Asset: EF3 AREA:KITCHEN HD

Unit Data	
	Actual
MFG	CAPTIVEAIRE
Model Num	DU50HFA
Serial Num	8384990
Type	UPBLAST
Configuration	VERTICAL

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

Test Data		
	Design	**Actual**
CFM	1350	1347
Fan RPM	-	1124
Fan Rotation	-	CCW
Motor RPM	-	1124
System SetPt	-	49.8HZ
RL Voltage	-	215
RL Amperage	-	1.67
Total ESP	-	0.58”
Fan Inlet SP	-	-0.58”
Fan Discharge SP	-	ATMS

Completed By: Ethan Van Orden on 02/10/2026

Unit Data - PHOTO LOG

02/10/2026

02/10/2026

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Project: 02-09-26 QT #0400 TEMPE, AZ

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:GRIDDLE

Unit Data	
	Actual
MFG	CAPTIVEAIRE
Model Num	6030ND-2-F
Job / Serial Num	8384990
Type	TYPE I CANOPY
Hood length	108”
Hood Width	60”

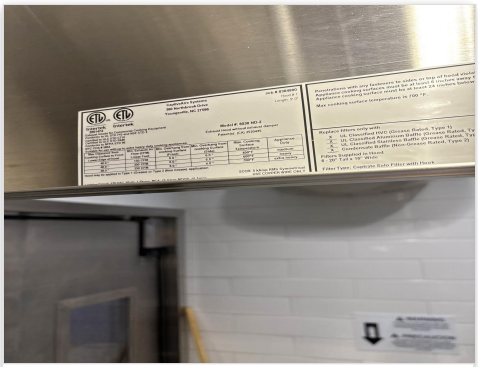
Test Data Exhaust		
	Design	**Actual**
Filter Type	-	BAFFLE
Filter Size 1	-	20X16
Filter Qty 1	-	6
Filter AK factor size 1	-	2.08
Filter Total AK Area	-	12.48
Filter1 FPM	-	105
Filter2 FPM	-	109
Filter3 FPM	-	113
Filter4 FPM	-	111
Filter5 FPM	-	108
Filter6 FPM	-	107
Filter Ave FPM(corr)	-	108
CFM	1350	1347

Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	OVEN

Completed By: Ethan Van Orden on 02/10/2026

Unit Data - PHOTO LOG

02/10/2026



02/10/2026