

**Report By:**

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**Report: TAB Report**  
**Function: Test, Adjust, & Balance**  
**Date: 03/06/2026**  
**Completed By: National TAB**

**PROJECT**  
**03-16-26 QT #1024 CHARLOTTE, NC**

4200 BROOKSHIRE BLVD

CHARLOTTE, NC

**Client**

QUIKTRIP  
4705 SOUTH 129TH EAST AVENUE  
TULSA, OK 74134

# National TAB

Project: 03-16-26 QT #1024 CHARLOTTE, NC

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# National TAB

Project: 03-16-26 QT #1024 CHARLOTTE, NC  
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 Flow
- EF-2 Low Flow
- RTU-3 Dampers Inaccessible

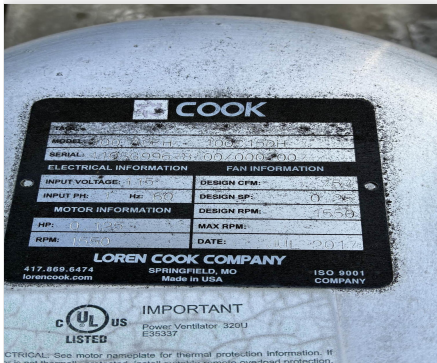


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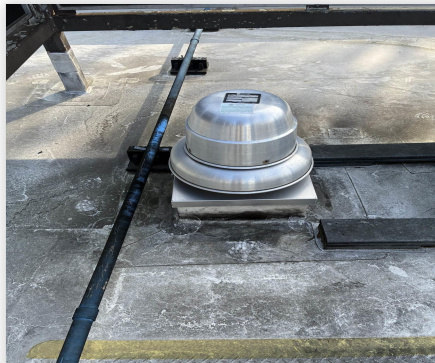
**Project Issue Information**

**Issue Name :** EF-1 Excessive Flow  
**Description :** EF-1 is set to the lowest possible limit and there is more air being exhausted than necessary.  
**Created By :** National TAB                      **Assigned To :** National TAB - Dan Hertenstein  
**Status :** Open  
**Priority :** Low                                      **Asset Tag :** EF1  
**Originated Date :** 03/24/2026 - Alex Bauer - National TAB

Project Issue File Details



03/24/2026



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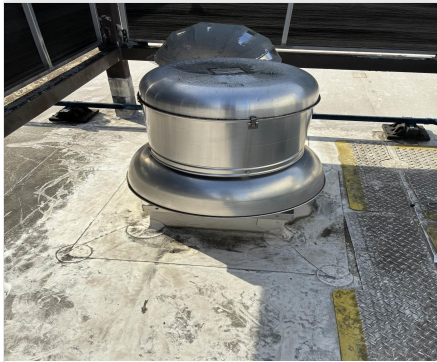


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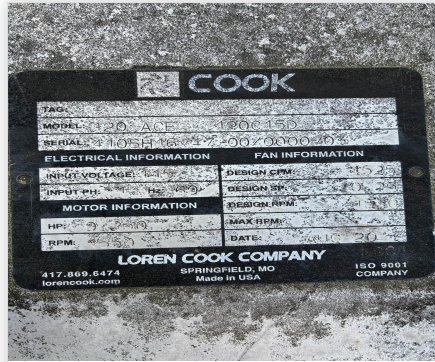
Project Issue Information

**Issue Name :** EF-2 Low Flow  
**Description :** EF-2 is set to the maximum speed and not enough air is being exhausted. It should also be noted neither diffuser have dampers.  
**Created By :** National TAB      **Assigned To :** National TAB - Dan Hertenstein  
**Status :** Open  
**Priority :** High      **Asset Tag :**  
**Originated Date :** 03/24/2026 - Alex Bauer - National TAB

Project Issue File Details



03/24/2026



03/24/2026



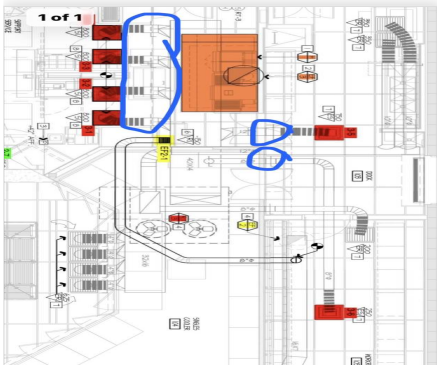
**03-16-26 QT #1024 CHARLOTTE, NC**

**Project Issue Information**

**Issue Name :** RTU-3 Dampers Inaccessible  
**Description :** The dampers for all the RTU-3 diffusers are inaccessible. Dampers 3-1 through 3-4 are above a ceiling tile wall with lights installed. These panels are immovable and the dampers can't be accessed on the other side of the wall. Dampers 3-5 and 3-6 are behind a wall that makes them unreachable.  
**Created By :** National TAB                      **Assigned To :** National TAB - Dan Hertenstein  
**Status :** Open  
**Priority :** Urgent                                      **Asset Tag :** RT-3  
**Originated Date :** 03/24/2026 - Alex Bauer - National TAB

Project Issue File Details

- 1. [Open](#) IMG\_1318.mp4  
03/24/2026



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### 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	848	350	382				
RTU-2	SALES	800	855	350	375				
RTU-3	BOH/KITCHEN	800	793	350	369				
EF-1	WOMEN'S RR					225	386	225	386
EF-2	MEN'S RR					525	351	525	351
EF-3	HOOD					1350	1385	0	0
<b>TOTALS</b>		<b>2400</b>	<b>2496</b>	<b>1050</b>	<b>1126</b>	<b>2100</b>	<b>2122</b>	<b>750</b>	<b>737</b>

#### HOODS ON

##### NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	2496
TOTAL EXHAUST	2100	2122
<b>NET AIRFLOW</b>	<b>300</b>	<b>374</b>

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.004
SIDE	0.0046
REAR	0.0098
<b>AVERAGE</b>	<b>0.0061</b>

#### HOODS OFF

##### NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	1126
TOTAL EXHAUST	750	737
<b>NET AIRFLOW</b>	<b>300</b>	<b>389</b>

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0114
SIDE	0.0013
REAR	0.006
<b>AVERAGE</b>	<b>0.0062</b>

**NOTES:**

See issues list.

## CheckList List

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



**03-16-26 QT #1024 CHARLOTTE, NC**

**CheckList Information**

**Name :** 01: RTU's/AHU's **Status :** Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 03/06/2026 - Trinity Dodds - National TAB  
**Completed Date :** 03/24/2026 - 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:



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**CheckList Information**

**Name :** 02: Exhaust Fans **Status :** Completed

**Assigned Organization :** National TAB **Asset :**

**Requesting Organization :** National TAB

**Created Date :** 03/06/2026 - Trinity Dodds - National TAB

**Completed Date :** 03/24/2026 - 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 about EFs.

Date :03/24/2026



**03-16-26 QT #1024 CHARLOTTE, NC**

**CheckList Information**

**Name :** 03: Hoods **Status :** Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 03/06/2026 - Trinity Dodds - National TAB  
**Completed Date :** 03/24/2026 - 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 :** 03/06/2026 - Trinity Dodds - National TAB  
**Completed Date :** 03/24/2026 - 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:**

45 SECOND SMOKE CANDLE.

**Smoke test capture % - Perimeter of hood**

**Comment:**

100%

**Smoke test capture % - Top of cooking surface**

**Comment:**

100%

**WITNESS**

**Date test was completed**

03/24/2026

**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**

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**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:**

See issues list about EFs.



# National TAB

Project: 03-16-26 QT #1024 CHARLOTTE, NC

System/Unit: AHU/RTU

Asset: RT-1

AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	201708-ANEK15782
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	19.5X46.5X2

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

Test Data		
	Design	Actual
SF CFM	4200	4256
SF RPM	-	1144
OA CFM (Hoods On)	800	848
OA CFM (Hoods Off)	350	382
RL Voltage	-	117 VFD
RL Amperage	-	8.50 VFD
VFD Max SetPt	-	39 Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	32%

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.43"
Fan Suction SP	-	-0.58"
Fan Discharge SP	-	0.77"
Total ESP	-	1.20"
Fan Total SP	-	1.35"

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

# Unit Data - PHOTO LOG



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# National TAB

Project: 03-16-26 QT #1024 CHARLOTTE, NC

## System/Unit: AHU/RTU

Asset: RT-2

AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	201708-ANEK15783
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	19.5X46.5X2

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

Test Data		
	Design	Actual
SF CFM	4200	4208
SF RPM	-	1144
OA CFM (Hoods On)	800	855
OA CFM (Hoods Off)	350	375
RL Voltage	-	117 VFD
RL Amperage	-	8.54 VFD
VFD Max SetPt	-	39 Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	28%

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.81"
Fan Suction SP	-	-0.92"
Fan Discharge SP	-	0.48"
Total ESP	-	1.29"
Fan Total SP	-	1.40"

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





# National TAB

Project: 03-16-26 QT #1024 CHARLOTTE, NC

## System/Unit: AHU/RTU

Asset: RT-3

AREA:BOH/KITCHEN

Unit Data	
	Actual
MFG	AAON
Serial Num	201708-ANEK15784
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	19.5X46.5X2

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

Test Data		
	Design	Actual
SF CFM	4200	4214
SF RPM	-	1179
OA CFM (Hoods On)	800	793
OA CFM (Hoods Off)	350	369
RL Voltage	-	125 VFD
RL Amperage	-	8.83 VFD
VFD Max SetPt	-	40.2 Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	32%

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.53"
Fan Suction SP	-	-0.70"
Fan Discharge SP	-	0.49"
Total ESP	-	1.02"
Fan Total SP	-	1.09"

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

# Unit Data - PHOTO LOG



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# National TAB

Project:03-16-26 QT #1024 CHARLOTTE, NC

## 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	679	679	679	84.9
SGRD2	SUPPORT SERVICE	SI	12"	800	1	752	752	752	94.0
SGRD3	SUPPORT SERVICE	SI	12"	800	1	875	875	875	109.4
SGRD4	SUPPORT SERVICE	SI	12"	800	1	691	691	691	86.4
SGRD5	DOCK	ES	12"	750	1	857	857	857	114.3
SGRD6	WORKROOM	ES	8"	250	1	360	360	360	144.0
Total				4200		4214	4214	4214	100.33%

Completed By: Alex Bauer on 03/24/2026



# National TAB

Project: 03-16-26 QT #1024 CHARLOTTE, NC

## System/Unit: FAN - Exhaust

Asset: EF1

AREA:WOMEN'S RR

### Unit Data

	Design	Actual
MFG	NA	COOK
Model Num	NA	100 ACEH 100C15DH
Serial Num	-	410SG99678- 00/0002007
Type	-	DOWNBLAST
Configuration	-	VERTICAL

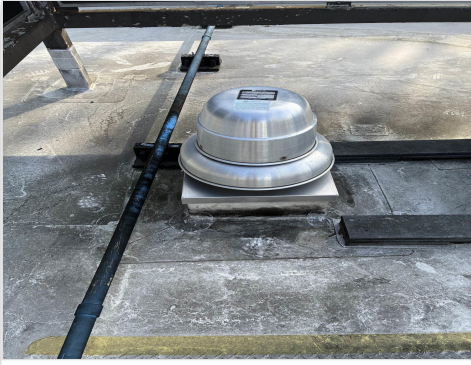
### Motor Data

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

### Test Data

	Design	Actual
CFM	225	386
Fan RPM	-	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	LOW
RL Voltage	-	NA
RL Amperage	-	0.311
Total ESP	-	0.23"
Fan Inlet SP	-	-0.23"
Fan Discharge SP	-	ATM

# Unit Data - PHOTO LOG



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# National TAB

Project: 03-16-26 QT #1024 CHARLOTTE, NC

## System/Unit: FAN - Exhaust

Asset: EF2

AREA: MEN'S RR/COMBI

Unit Data		
	Design	Actual
MFG	NA	COOK
Model Num	NA	120 ACE 120C15D
Serial Num	-	410SH16747- 00/0000703
Type	-	DOWNBLAST
Configuration	-	VERTICAL

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	-	NA

Test Data		
	Design	Actual
CFM	525	351
Fan RPM	-	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	MAX
RL Voltage	-	NA
RL Amperage	-	0.434
Total ESP	-	0.12"
Fan Inlet SP	-	-0.12"
Fan Discharge SP	-	ATM





# National TAB

Project:03-16-26 QT #1024 CHARLOTTE, NC

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	COMBI-OVEN	RI	8"	150	1	179	179	179	119.3
Total				150		179	179	179	119.33%

Completed By: Alex Bauer on 03/24/2026



# National TAB

Project: 03-16-26 QT #1024 CHARLOTTE, NC

## System/Unit: FAN - Exhaust

Asset: EF3

AREA:KITCHEN HD

### Unit Data

	Design	Actual
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	8469141
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

### Motor Data

	Design	Actual
Motor MFG	-	TELCO GREEN
Frame	-	NA
Horsepower	1/2	0.50
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	208
Amperage (rated)	-	NA
Service Factor	-	NA

### Test Data

	Design	Actual
CFM	1350	1385
Fan RPM	-	1339
Fan Rotation	-	CCW
Motor RPM	-	1339
System SetPt	-	59.8 Hz
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	0.49"
Fan Inlet SP	-	-0.49"
Fan Discharge SP	-	ATM

# Unit Data - PHOTO LOG



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# National TAB

Project: 03-16-26 QT #1024 CHARLOTTE, NC

## System/Unit: Kitchen Hood Type I

Asset: HD1

AREA:GRIDDLE

### Unit Data

	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030ND-2-F	6030ND-2
Job / Serial Num	-	8469141
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	108"	108"
Hood Width	60"	60"

### Test Data Exhaust

	Design	Actual
Filter Type	CAPTRATE SOLO FILTER	BAFFLE FILTERS
Filter Size 1	20X16	16X20
Filter Qty 1	6	6
Filter AK factor size 1	2.08	2.08
Filter Total AK Area	12.48	12.48
Filter1 FPM	-	115
Filter2 FPM	-	126
Filter3 FPM	-	116
Filter4 FPM	-	106-
Filter5 FPM	-	106
Filter6 FPM	-	101
Filter Ave FPM(corr)	-	111
CFM	1350	1385

### Cooking Equipment

	Actual
Item 1	OVEN
Item 2	FRYER



