

Report By:

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



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

PROJECT
03-16-26 QT #0488 PHOENIX, AZ

4949 N 51ST AVE

PHOENIX, AZ

Client

QUIKTRIP
4705 SOUTH 129TH EAST AVENUE
TULSA, OK 74134

National TAB

Project: 03-16-26 QT #0488 PHOENIX, AZ

Table Of Contents

Section	Page #
Summary	3
Balance Schedule	4
Checklist	5
RTU-1	12
RTU-2	14
RTU-3	16
EF-1 - Exhaust	19
EF-2 - Exhaust	22
Combi-Oven Grille	25
EF-3 - Hood Exhaust	26
Kitchen Hood Type I	28
GRD Layout	30



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.

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	783	350	366				
RTU-2	SALES	800	855	350	345				
RTU-3	BOH/KITCHEN	800	826	350	373				
EF-1	WOMEN'S RR					225	221	225	221
EF-2	MEN'S RR					525	520	525	520
EF-3	HOOD					1350	1347	0	0
TOTALS		2400	2464	1050	1084	2100	2088	750	741

HOODS ON

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	2464
TOTAL EXHAUST	2100	2088
NET AIRFLOW	300	376

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0226
SIDE	0.0113
REAR	0.0105
AVERAGE	0.0148

HOODS OFF

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	1084
TOTAL EXHAUST	750	741
NET AIRFLOW	300	343

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0205
SIDE	0.0187
REAR	0.0159
AVERAGE	0.0184

NOTES:

CheckList List

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



03-16-26 QT #0488 PHOENIX, AZ

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 : 03/17/2026 - 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:



03-16-26 QT #0488 PHOENIX, AZ

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 : 03/17/2026 - 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:



03-16-26 QT #0488 PHOENIX, AZ

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 : 03/17/2026 - 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:



03-16-26 QT #0488 PHOENIX, AZ

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 : 03/17/2026 - 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

03/17/2026

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:



03-16-26 QT #0488 PHOENIX, AZ

CheckList Information

Name : 05: Smoke Detector Checklist **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

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

Completed Date : 03/16/2026 - Ethan Van Orden - National TAB

CheckList Item Details

Smoke Detector Manufacturer:

Comment:

SYSTEM SENSOR

Smoke Detector Model:

Comment:

AD4P120

Accpetable Pressure Range Rating:

Comment:

0.01-1.11

Actual Measured Pressure Range:

Comment:

RTU-1: 0.568" RTU-2: 0.379" RTU-3: 0.127"

Smoke Detector Shutdown?

Pass

Comment:

ALL PASS



National TAB

Project: 03-16-26 QT #0488 PHOENIX, AZ

System/Unit: AHU/RTU

Asset: RT-1

AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	201706-ANEL15809
Model Num	RN-015-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X23
Num Final Filter 1	2
Final Filter Size 1	48X20

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	4421
SF RPM	-	1437
OA CFM (Hoods On)	800	783
OA CFM (Hoods Off)	350	366
RL Voltage	-	171@VFD
RL Amperage	-	11.8@VFD
VFD Max SetPt	-	49HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	23%

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.86"
Fan Suction SP	-	-1.40"
Fan Discharge SP	-	0.57"
Total ESP	-	1.43"
Fan Total SP	-	1.97"

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

Completed By: Ethan Van Orden on 03/17/2026

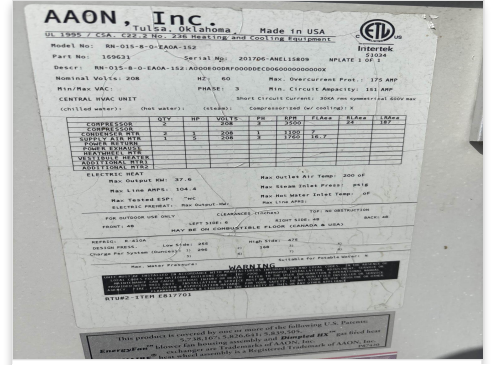
Unit Data - PHOTO LOG



03/16/2026



03/16/2026



03/16/2026



National TAB

Project: 03-16-26 QT #0488 PHOENIX, AZ

System/Unit: AHU/RTU

Asset: RT-2

AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	201706-ANEL15808
Model Num	RN-015-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X23
Num Final Filter 1	2
Final Filter Size 1	48X20

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	4313
SF RPM	-	1232
OA CFM (Hoods On)	800	855
OA CFM (Hoods Off)	350	345
RL Voltage	-	128@VFD
RL Amperage	-	10.3@VFD
VFD Max SetPt	-	42HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	24%

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.58"
Fan Suction SP	-	-1.03"
Fan Discharge SP	-	0.62"
Total ESP	-	1.20"
Fan Total SP	-	1.65"

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

Completed By: Ethan Van Orden on 03/17/2026



National TAB

Project: 03-16-26 QT #0488 PHOENIX, AZ

System/Unit: AHU/RTU

Asset: RT-3

AREA:BOH/KITCHEN

Unit Data	
	Actual
MFG	AAON
Serial Num	201706-ANEL15810
Model Num	RN-013-8-0-EA0A-142
Num OA Filters 1	1
OA Filter Size 1	45X23
Num Final Filter 1	2
Final Filter Size 1	48X20

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	4171
SF RPM	-	968
OA CFM (Hoods On)	800	826
OA CFM (Hoods Off)	350	373
RL Voltage	-	79@VFD
RL Amperage	-	7.1@VFD
VFD Max SetPt	-	33HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	26%

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.31"
Fan Suction SP	-	-0.48"
Fan Discharge SP	-	0.43"
Total ESP	-	0.74"
Fan Total SP	-	0.91"

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

Completed By: Ethan Van Orden on 03/17/2026



National TAB

Project:03-16-26 QT #0488 PHOENIX, 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	1000	816	834	104.3
SGRD2	SUPPORT SERVICE	SI	12"	800	1	769	644	789	98.6
SGRD3	SUPPORT SERVICE	SI	12"	800	1	1145	966	865	108.1
SGRD4	SUPPORT SERVICE	SI	12"	800	1	968	815	823	102.9
SGRD5	DOCK	ES	12"	650	1	769	660	697	107.2
SGRD6	WORKROOM	ES	8"	150	1	287	223	163	108.7
Total				4000		4938	4124	4171	104.28%

Completed By: Ethan Van Orden on 03/17/2026



National TAB

Project: 03-16-26 QT #0488 PHOENIX, AZ

System/Unit: FAN - Exhaust

Asset: EF1

AREA:WOMEN'S RR

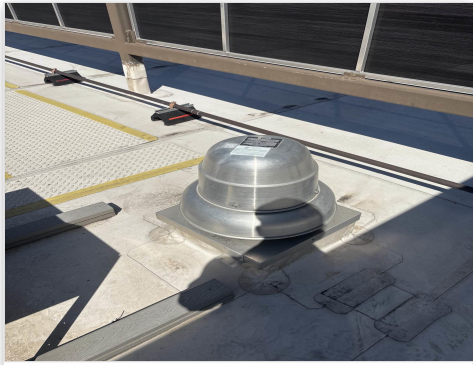
Unit Data		
	Design	Actual
MFG	NA	COOK
Model Num	NA	90 ACEH 90C15D
Serial Num	-	346SG99112 00/0000701
Type	-	DOWNBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	US MOTORS
Frame	-	48Y
Horsepower	-	1/8
Motor Rpm	-	1600
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	1.7
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	225	221
Fan RPM	-	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	DIAL
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	0.15"
Fan Inlet SP	-	-0.15"
Fan Discharge SP	-	ATMS

Completed By: Ethan Van Orden on 03/17/2026

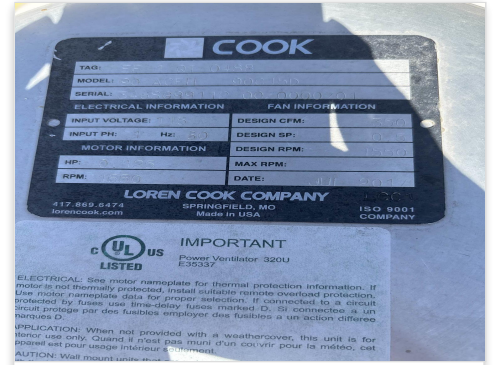
Unit Data - PHOTO LOG



03/16/2026

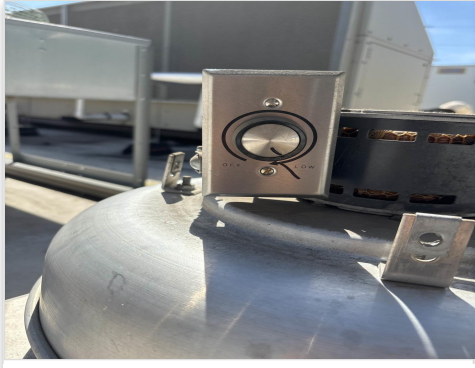


03/16/2026



03/16/2026

Test Data - PHOTO LOG



03/16/2026



National TAB

Project: 03-16-26 QT #0488 PHOENIX, AZ

System/Unit: FAN - Exhaust

Asset: EF2

AREA: MEN'S RR/COMBI

Unit Data		
	Design	Actual
MFG	NA	COOK
Model Num	NA	101 ACE 101C15D
Serial Num	-	346SG99112 00/0001901
Type	-	DOWNBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	US MOTORS
Frame	-	48Y
Horsepower	-	1/8
Motor Rpm	-	1600
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	1.7
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	525	520
Fan RPM	-	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	DIAL
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	0.39"
Fan Inlet SP	-	0.39"
Fan Discharge SP	-	ATMS

Completed By: Ethan Van Orden on 03/17/2026

Unit Data - PHOTO LOG



03/16/2026



03/16/2026



03/16/2026

Test Data - PHOTO LOG



03/16/2026



National TAB

Project:03-16-26 QT #0488 PHOENIX, 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	COMBI-OVEN	RI	8"	150	1	125	152	152	101.3
Total				150		125	152	152	101.33%

Completed By: Ethan Van Orden on 03/17/2026



National TAB

Project: 03-16-26 QT #0488 PHOENIX, AZ

System/Unit: FAN - Exhaust

Asset: EF3

AREA:KITCHEN HD

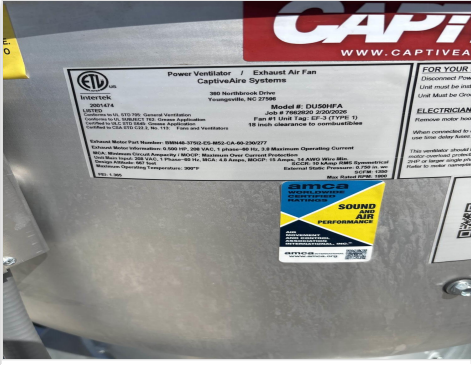
Unit Data		
	Design	Actual
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	7662820
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

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	-	1160
Fan Rotation	-	CCW
Motor RPM	-	1160
System SetPt	-	51.8HZ
RL Voltage	-	210
RL Amperage	-	2.3
Total ESP	-	0.56"
Fan Inlet SP	-	-0.56"
Fan Discharge SP	-	ATMS

Completed By: Ethan Van Orden on 03/17/2026

Unit Data - PHOTO LOG



03/16/2026



03/16/2026



03/16/2026



National TAB

Project: 03-16-26 QT #0488 PHOENIX, 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
Job / Serial Num	-	7662820
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	CAPTRATE SOLO FILTER
Filter Size 1	20X16	20X16
Filter Qty 1	6	6
Filter AK factor size 1	2.08	2.08
Filter Total AK Area	12.48	12.48
Filter1 FPM	-	105
Filter2 FPM	-	105
Filter3 FPM	-	120
Filter4 FPM	-	111
Filter5 FPM	-	104
Filter6 FPM	-	105
Filter Ave FPM(corr)	-	108
CFM	1350	1347

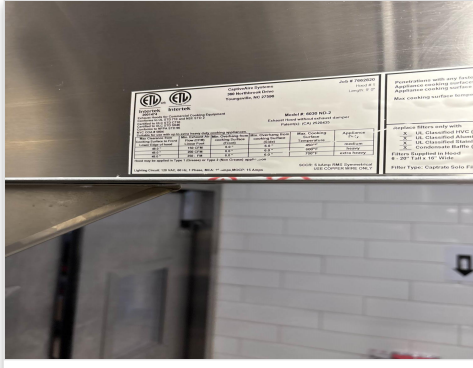
Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	OVEN

Completed By: Ethan Van Orden on 03/17/2026

Unit Data - PHOTO LOG



03/16/2026



03/16/2026



- 1 INSTALL NEW OWNER-FURNISHED TYPE-I KITCHEN HOOD EXHAUST SYSTEM LINE SUPPLY DUCT, AND ALL OTHER REQUIREMENTS FOR A TYPE-I SYSTEM. INSTALL HOOD CONTROLS, SENSORS, AND LIGHT SENSORS WITHIN HOOD UTILITY CABINET ACCORDING TO INSTALLATION REQUIREMENTS.
- 2 INSTALL NEW OWNER-FURNISHED ROOF-MOUNTED EXHAUST FAN. INSTALL RELEASE FAN EXTEND HOOD COLLAR BALANCE TO AIRFLOW RATE SCHEDULE.