Report By:

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

Report: TAB REPORT

Function: Test, Adjust, & Balance

Date: 08/22/2024

PROJECT

07-29-24 PF CHANGS SAN ANTONIO, TX

8480 Keystone Crossing

Indianapolis, IN 46240

Client

P.F. Chang's China Bistro

7676 E. Pinnacle Peak Rd

Scottsdale, AZ 85255

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

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1329 E Kemper Rd
Suite 4210
Cincinnati, OH 45246
[855] 682 6822

National TAB was called to P.F. Chang's San Antonio to address concerns of humidity/condensation, and warm temperatures in the space.

Initial findings were of extremely negative building pressure (-0.095" W.C. average), and low RTU supply air flow on all RTUs. Hood exhaust was found to be within design or marginally low.

RTU supply air flow was increased as much as possible at time of visit. See issues section for recommendations on how to further increase RTU supply air flow. Outside air to the RTUs was set proportionally low, in order to not cause poor RTU performance with too high of an Outside air: Return air ratio. Kitchen hoods performed as designed despite some measuring lower than design CFM. These low flow rates were kept as-is to aid in achieving a positive building pressure. Kitchen staff were interviewed to ensure good performance. Hood supply air was kept low to aid in kitchen hood smoke capture. The type of plenum used is called a "back return" system. It is located behind the cooking equipment and can sometimes cause poor smoke capture if air flow is set too high.

After RTU supply cfm was increased, and outside air was set proportionally, the building pressure became -0.0095" W.C. average. The overall comfort in the building was improved. Humidity remains an issue in the dishwasher area.

Issue List

- EF-5
- EF-7
- EF-8
- RTU-2
- RTU-3
- RTU-4

07-29-24 PF CHANGS SAN ANTONIO, TX

Project Issue Information

Issue Name :	EF-5		
Description :	EF-5 (Dishwasher) is operating below design. Dishwasher area is humid and water is condensing in area. Fan speed was unable to be increased. Recommend repair/replacement.		
Created By :	National TAB	**Assigned To :**	National TAB - Will Turnbough
Status :	Open		
Priority :	Urgent	**Asset Tag :**	
Originated Date :	08/22/2024 - Wesley John - National TAB		

07-29-24 PF CHANGS SAN ANTONIO, TX

Project Issue Information

Issue Name :	EF-7		
Description :	EF-7 (Employee Restroom) is not operational. Recommend repair/replacement.		
Created By :	National TAB	**Assigned To :**	National TAB - Will Turnbough
Status :	Open		
Priority :	Urgent	**Asset Tag :**	
Originated Date :	08/22/2024 - Wesley John - National TAB		

07-29-24 PF CHANGS SAN ANTONIO, TX

Project Issue Information

Issue Name :	EF-8		
Description :	EF-8 (Customer Restroom) is not operational. Recommend repair/replacement.		
Created By :	National TAB	**Assigned To :**	National TAB - Will Turnbough
Status :	Open		
Priority :	Urgent	**Asset Tag :**	
Originated Date :	08/22/2024 - Wesley John - National TAB		

07-29-24 PF CHANGS SAN ANTONIO, TX

Project Issue Information

Issue Name :	RTU-2		
Description :	RTU-2 is low on air flow (85%). Fan speed is maximized, motor is operating at full load amp rating. Unit static pressure readings may indicate some duct blockage in supply duct. Recommend bringing in mechanical contractor to further inspect duct. Remove any blockages, open any hidden dampers etc.		
Created By :	National TAB	**Assigned To :**	National TAB - Will Turnbough
Status :	Open		
Priority :	Urgent	**Asset Tag :**	
Originated Date :	08/22/2024 - Wesley John - National TAB		

07-29-24 PF CHANGS SAN ANTONIO, TX

Project Issue Information

Issue Name :	RTU-3		
Description :	RTU-3 is low on air flow (78%). Static pressure measured at unit is low. Motor is operating below full load amp rating. Recommend pulley change on unit to bring air flow to within tolerance.		
Created By :	National TAB	**Assigned To :**	National TAB - Will Turnbough
Status :	Open		
Priority :	Urgent	**Asset Tag :**	
Originated Date :	08/22/2024 - Wesley John - National TAB		

07-29-24 PF CHANGS SAN ANTONIO, TX

Project Issue Information

Issue Name :	RTU-4		
Description :	RTU-4 is low on air flow (73%). Static pressure measured at unit is low. Motor is operating below full load amp rating. Recommend pulley change on unit to bring air flow to within tolerance.		
Created By :	National TAB	**Assigned To :**	National TAB - Will Turnbough
Status :	Open		
Priority :	Urgent	**Asset Tag :**	
Originated Date :	08/22/2024 - Wesley John - National TAB		

NATIONAL TAB

AIR BALANCE SCHEDULE

UNIT	AREA SERVED	HVAC SUPPLY		HVAC RETURN		HVAC OUTDOOR		OA %		HOOD MAKE-UP		HOOD EXHAUST		GENERAL EXH.	
		DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
RTU-1	DINING	5300	3999	3750	3999	1550	0	29.2%	0.0%						
RTU-2	BAR DINING	6050	3943	4250	3943	1800	0	29.8%	0.0%						
RTU-3	BOH	5500	3318	4100	3318	1400	0	25.5%	0.0%						
RTU-4	COOKLINE	5500	3337	4100	3337	1400	0	25.5%	0.0%						
EF-1	HOOD-1											3300	3478		
EF-2	HOOD-2											3375	3041		
EF-3	HOOD-3											2940	3116		
EF-4	HOOD-4											4000	3674		
EF-5	HOOD-5											1050	794		
EF-6	CUSTOMER TOILET													450	0
EF-7	EMPLOYEE TOILET													75	0
SF-1	HOODS									9490	6086				
TOTALS		22350	14597	16200	14597	6150	0			9490	6086	14665	14103	525	0

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	15640	6086
TOTAL EXHAUST	15190	14103
NET AIRFLOW	450	-8017

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	-0.1
SIDE	-0.09
REAR	-
AVERAGE	**-0.095**

FINAL CHECKS

ACTUAL NET AIRFLOW COINCIDES WITH DESIGN: ✗

MEASURED PRESSURES COINCIDES WITH ACTUAL NET AIRFLOW: ✓

PRESSURE FALLS WITHIN IMC TOLERANCE OF +/-0.02" W.C. ✗

NOTES:

INITIAL CONDITIONS

NATIONAL TAB

AIR BALANCE SCHEDULE

UNIT	AREA SERVED	HVAC SUPPLY		HVAC RETURN		HVAC OUTDOOR		OA %		HOOD MAKE-UP		HOOD EXHAUST		GENERAL EXH.	
		DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
RTU-1	DINING	5300	4916	3750	3326	1550	1590	29.2%	32.3%						
RTU-2	BAR DINING	6050	5114	4250	3464	1800	1650	29.8%	32.3%						
RTU-3	BOH	5500	4304	4100	3004	1400	1300	25.5%	30.2%						
RTU-4	COOKLINE	5500	4006	4100	2663	1400	1343	25.5%	33.5%						
EF-1	HOOD-1											3300	3478		
EF-2	HOOD-2											3375	3041		
EF-3	HOOD-3											2940	3116		
EF-4	HOOD-4											4000	3674		
EF-5	HOOD-5											1050	794		
EF-6	CUSTOMER TOILET													450	0
EF-7	EMPLOYEE TOILET													75	0
SF-1	HOODS									9490	6086				
TOTALS		22350	18340	16200	12457	6150	5883			9490	6086	14665	14103	525	0

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	15640	11969
TOTAL EXHAUST	15190	14103
NET AIRFLOW	450	-2134

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	-0.01
SIDE	-0.009
REAR	-
AVERAGE	**-0.0095**

FINAL CHECKS

ACTUAL NET AIRFLOW COINCIDES WITH DESIGN: ✗

MEASURED PRESSURES COINCIDES WITH ACTUAL NET AIRFLOW: ✓

PRESSURE FALLS WITHIN IMC TOLERANCE OF +/-0.02" W.C. ✓

NOTES:

FINAL

CheckList List

- TECH - SITE PICTURES

07-29-24 PF CHANGS SAN ANTONIO, TX

CheckList Information

Name :	TECH - SITE PICTURES	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	07/26/2024 - Brian Turnbough - National TAB		
Completed Date :	08/22/2024 - Wesley John - National TAB		

CheckList Item Details

RTU-1

Comment:

08/05/2024

RTU-2

Comment:

08/05/2024

RTU-3

Comment:

08/05/2024

RTU-4

Comment:

08/05/2024

MAU-1

Comment:

08/05/2024

EF-1

Comment:

08/05/2024

EF-2

Comment:

08/05/2024

EF-3

Comment:

08/05/2024

EF-4

Comment:

08/05/2024

CheckList List

- REVIVE CHECKLIST
- TECH - STEP 1: INITIAL SITE WALKTHROUGH
- TECH - STEP 2: UNIT, DATA, AND EVAL
- TECH - STEP 3: TEST, ADJUST AND BALANCE
- TECH - STEP 4: FINAL TESTS

07-29-24 PF CHANGS SAN ANTONIO, TX

CheckList Information

Name :	REVIVE CHECKLIST	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	07/30/2024 - Brianna Biggs - National TAB		
Completed Date :	08/05/2024 - Oscar Ventura - National TAB		

CheckList Item Details

INITIAL BUILDING REVIEW:

What is the initial building pressure before making any changes?

Comment:

DOOR BY RESTROOMS: -0.08 FRONT ENTRANCE: -0.1 SIDE: -0.09

Are thermostats programmed?

Comment:

STORE USES GRIDPOINT.

Are building pressure relief working properly?

Comment:

YES

INITIAL AIRFLOWS:

SUPPLY RTU-1

Comment:

3999

OA RTU-1

Comment:

0

SUPPLY RTU-2

Comment:

3943

OA RTU-2

Comment:

0

SUPPLY RTU-3

Comment:

3318

OA RTU-3

Comment:

0

SUPPLY RTU-4

Comment:

3337

OA RTU-4

Comment:

0

EF-1

Comment:

3478

EF-2

Comment:

3041

EF-3

Comment:

3116

EF-4

Comment:

3674

MAU-1

Comment:

6086

07-29-24 PF CHANGS SAN ANTONIO, TX

CheckList Information

Name :	TECH - STEP 1: INITIAL SITE WALKTHROUGH	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	07/26/2024 - Brian Turnbough - National TAB		
Completed Date :	08/05/2024 - Oscar Ventura - National TAB		

CheckList Item Details

INITIAL SITE WALKTHROUGH

All diffusers and grilles are installed and match design?	Yes
Comment:	
All hood filters installed and accounted for?	Yes
Comment:	
Hoods are wired and have power?	Yes
Comment:	
Hood is free of alarms?	Yes
Comment:	
Thermostats have power?	Yes
Comment:	

Have trades/general contractor been notified about any issues and are they created on FaciliBuild?

Comment:

NA

07-29-24 PF CHANGS SAN ANTONIO, TX

CheckList Information

Name :	TECH - STEP 2: UNIT, DATA, AND EVAL	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	07/26/2024 - Brian Turnbough - National TAB		
Completed Date :	08/05/2024 - Oscar Ventura - National TAB		

CheckList Item Details

UNIT DATA AND EVALUATION WHILE GATHERING UNIT DATA CHECK THE FOLLOWING:

RTU's/AHU's

Economizers are assembled and functional?	Yes
Comment:	
DCV Max damper opening position is set to minimum?	Yes
Comment:	
Free cooling enthalpy set point set for lowest setting (Typically "D")	N/A
Comment:	
Motors are all operating below the FLA rating?	Yes
Comment:	

Are belts tight?

Comment:

YES

If direct drive unit is the speed controller working.

Comment:

BELT DRIVE

Is gas piping installed and valves turned on?	Yes

Comment:

Unit free of noticeable noise and vibration	Yes

Comment:

EF's

Rotation is correct?	Yes

Comment:

Belts are tight?

Comment:

YES

Grease cup installed on hood fan?	Yes

Comment:

Hinge kit installed installed on hood fan?	Yes

Comment:

Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?	Yes

Comment:

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

Comment:

There is no major leakage around base of fan?	Yes

Comment:

Is the motor operating below the motor FLA rating?	Yes

Comment:

For restroom fan(s) is the back draft damper installed and can it fully open?	Yes

Comment:

Unit free of noticeable noise and vibration?	Yes

Comment:

MUA

Rotation is correct?	Yes

Comment:

Gas piping is installed and valves are in on position?	Yes

Comment:

Heater tested and is functional?	N/A

Comment:

Internal motorized damper is fully opening?	N/A

Comment:

NO MOTORIZED DAMPER

Motor is operating below the FLA rating?	Yes

Comment:

Unit free of noticeable noise and vibration?	Yes

Comment:

HOODS

Kitchen equipment installed in proper places?	Yes

Comment:

Can kitchen equipment be turned on for final smoke test?	N/A

Comment:

DOCUMENTATION

Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	Yes

Comment:

07-29-24 PF CHANGS SAN ANTONIO, TX

CheckList Information

Name :	TECH - STEP 3: TEST, ADJUST AND BALANCE	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	07/26/2024 - Brian Turnbough - National TAB		
Completed Date :	08/05/2024 - Oscar Ventura - National TAB		

CheckList Item Details

TEST, ADJUST, AND BALANCE ALL EQUIPMENT:

DURING TESTING MAKE NOTE OF THE FOLLOWING:

Is space free of drafting?	Yes
Comment:	
Is space comfortable in all areas?	Yes
Comment:	
Is the space free of ventilation noise?	Yes
Comment:	

If deviations from design were necessary to resolve 1-3 what were they? Otherwise put "NA".

Comment:

NA

07-29-24 PF CHANGS SAN ANTONIO, TX

CheckList Information

Name :	TECH - STEP 4: FINAL TESTS	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	07/26/2024 - Brian Turnbough - National TAB		
Completed Date :	08/22/2024 - Wesley John - National TAB		

CheckList Item Details

FINAL TESTS

HOOD CAPTURE TEST

List equipment turned on for testing

Comment:

NA

List smoke candle type used

Comment:

OBSERVED COOKING

Smoke test capture - Perimeter of hood

Comment:

100%

Smoke test capture - Top of cooking surface

Comment:

100%

WITNESS

Date test was completed	08/01/2024

Comment:

TAB tech name / Firm

Comment:

OSCAR VENTURA / NATIONAL TAB

Site super name / Firm

Comment:

NO SITE SUPER PRESENT. OPEN STORE

Owner representative name / Firm (if Applicable)

Comment:

N/A

Building pressure at front & back doors (All Systems On)

Comment:

-0.01 -0.009

ADDITIONAL

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

Comment:

DESIGN IS POSITIVE. ACTUAL NET AND MEASURED BUILDING PRESSURE ARE NEGATIVE.

Thermostats are programmed? N/A

Comment:

GRIDPOINT

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

System/Unit: AHU/RTU

Asset: RTU1 AREA:DINING

Unit Data		
	Design	**Actual**
MFG	LENNOX	LENNOX
Serial Num	-	5623C04634
Model Num	LGC210	LGT240H4MS1G
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	3
OA Filter Size 1	-	24X16
Num Final Filter 1	-	6
Final Filter Size 1	-	24X24X2

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	213TZ
Horsepower	3	3
Motor Rpm	-	1765
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	6.40

Drive Data	
	Actual
Motor Sheave Size	6.5"
Motor Bore Size	1.25"
Motor Sheave SetPt	CLOSED
Fan Sheave Size	10.5"
Fan Sheave Bore	1"
Belt CL Distance	27"
Num of Belts	1
Belt Size	BX66
Belt Alignment	CORRECT

Test Data		
	Design	**Actual**
SF CFM	5300	4916
SF RPM	-	1040
RA CFM	3750	3326
OA CFM	1550	1590
RL Voltage	-	474
RL Amperage	-	6.3/6.4/6.4
SF Rotation	-	CCW
SF System SetPt	-	CLOSED
RA Damper Position	-	70%
Min OA Damper Position	-	30%
Min OA Damper Type	-	OPPOSED BLADE

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-1.17"
Fan Suction SP	-	-1.62"
Fan Discharge SP	-	0.42"
Total ESP	1.00"	1.59"
Fan Total SP	-	2.04"

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

Completed By: Oscar Ventura on 08/05/2024

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

System/Unit: AHU/RTU

Asset: RTU2 AREA:BAR DINING

Unit Data		
	Design	**Actual**
MFG	LENNOX	LENNOX
Serial Num	-	5623E04071
Model Num	LGA240	LGT240H4MM1G
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	3
OA Filter Size 1	-	24X16
Num Final Filter 1	-	6
Final Filter Size 1	-	24X24X2

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	213TZ
Horsepower	5	7.50
Motor Rpm	-	1765
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	6.40

Drive Data	
	Actual
Motor Sheave Size	6.5"
Motor Bore Size	1.25"
Motor Sheave SetPt	CLOSED
Fan Sheave Size	10.5"
Fan Sheave Bore	1"
Belt CL Distance	27"
Num of Belts	1
Belt Size	BX66
Belt Alignment	CORRECT

Test Data		
	Design	**Actual**
SF CFM	6050	5114
SF RPM	-	1034
RA CFM	4250	3464
OA CFM	1800	1650
RL Voltage	-	476
RL Amperage	-	6.4/6.4/6.3
SF Rotation	-	CCW
RA Damper Position	-	70%
Min OA Damper Position	-	30%
Min OA Damper Type	-	OPPOSED BLADE

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.97"
Fan Suction SP	-	-1.37"
Fan Discharge SP	-	1.51"
Total ESP	1.00"	2.48"
Fan Total SP	-	2.88"

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

Completed By: Oscar Ventura on 08/05/2024

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

System/Unit: AHU/RTU

Asset: RTU3 AREA:BOH

Unit Data		
	Design	**Actual**
MFG	LENNOX	LENNOX
Serial Num	-	5623F05144
Model Num	LGC180	LGT180H4MS1G
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	3
OA Filter Size 1	-	24X16
Num Final Filter 1	-	6
Final Filter Size 1	-	24X24X2

Motor Data		
	Design	**Actual**
Motor MFG	-	INTERLINK
Frame	-	NL
Horsepower	3	3
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	4.0

Drive Data	
	Actual
Motor Sheave Size	3.75
Motor Bore Size	0.75
Motor Sheave SetPt	1 TURN
Fan Sheave Size	9
Fan Sheave Bore	1
Belt CL Distance	22"
Num of Belts	1
Belt Size	BX59
Belt Alignment	CORRECT

Test Data		
	Design	**Actual**
SF CFM	5500	4304
SF RPM	-	713
RA CFM	4100	3004
OA CFM	1400	1300
RL Voltage	-	474
RL Amperage	-	2.8/2.8/2.7
SF Rotation	-	CORRECT
RA Damper Position	-	70%
Min OA Damper Position	-	30%
Min OA Damper Type	-	OPPOSED BLADE

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.32"
Fan Suction SP	-	-0.46"
Fan Discharge SP	-	0.49"
Total ESP	0.85"	0.81"
Fan Total SP	-	0.95"

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

Completed By: Oscar Ventura on 08/05/2024

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

System/Unit: AHU/RTU

Asset: RTU4 AREA:COOKLINE

Unit Data		
	Design	**Actual**
MFG	LENNOX	LENNOX
Serial Num	-	5623F05145
Model Num	LGC180	LGT180H4MS1G
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	3
OA Filter Size 1	-	24X16
Num Final Filter 1	-	6
Final Filter Size 1	-	24X24X2

Motor Data		
	Design	**Actual**
Motor MFG	-	INTERLINK
Frame	-	NL
Horsepower	3	3
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	4.0

Drive Data	
	Actual
Motor Sheave Size	7"
Motor Bore Size	1.25"
Motor Sheave SetPt	1 TURN
Fan Sheave Size	13"
Fan Sheave Bore	1"
Belt CL Distance	22"
Num of Belts	1
Belt Size	BX59
Belt Alignment	CORRECT

Test Data		
	Design	**Actual**
SF CFM	5500	4006
SF RPM	-	886
RA CFM	4100	2663
OA CFM	1400	1343
RL Voltage	-	477
RL Amperage	-	2.8/2.7/2.7
SF Rotation	-	CORRECT
SF System SetPt	-	1 TURN
RA Damper Position	-	73%
Min OA Damper Position	-	27%
Min OA Damper Type	-	OPPOSED BLADE

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.49"
Fan Suction SP	-	-0.65"
Fan Discharge SP	-	0.59"
Total ESP	0.85"	1.08"
Fan Total SP	-	1.24"

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

Completed By: Oscar Ventura on 08/05/2024

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

System/Unit: FAN - Exhaust

Asset: EF6 AREA:CUSTOMER TOILET

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	G-095-D	G-090-DGE117X9D
Serial Num	-	20967536
Type	-	CENTRIFUGAL
Configuration	VERTICAL	UPBLAST

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	1/8	1/8
Motor Rpm	-	NL
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	NL
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	450	0
Fan RPM	-	(1)
Fan Rotation	-	(1)
Motor RPM	-	(1)
System SetPt	-	(1)
RL Voltage	-	(1)
RL Amperage	-	(1)
Total ESP	0.50"	(1)
Fan Inlet SP	-	(1)
Fan Discharge SP	-	ATM

Completed By: Oscar Ventura on 08/05/2024

Notes:
(1) FAN NOT RUNNING.

Written By: Wesley John on 08/22/2024

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

System/Unit: FAN - Exhaust

Asset: EF7 AREA:EMPLOYEE TOILET

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	G-060-D	G-060-D
Serial Num	-	NL
Type	-	NL
Configuration	VERTICAL	NL

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	1/60	NL
Motor Rpm	-	NL
Phase	1	NL
Voltage (rated)	120	NL
Amperage (rated)	-	NL
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	75	0
Fan RPM	-	(1)
Fan Rotation	-	(1)
Motor RPM	-	(1)
System SetPt	-	(1)
RL Voltage	-	(1)
RL Amperage	-	(1)
Total ESP	0.25"	(1)
Fan Inlet SP	-	(1)
Fan Discharge SP	-	(1)

Unit Data - PHOTO LOG

EF_7_740252443

Completed By: Oscar Ventura on 08/05/2024

Notes:
(1) MOTOR NOT RUNNING.

Written By: Wesley John on 08/22/2024

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

System/Unit: FAN - Exhaust

Asset: KEF1 AREA:HOOD-1

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	HRE-20	HRE-20
Serial Num	-	NL
Type	UTILITY	UTILITY
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	WEG
Frame	-	NL
Horsepower	2.0	2.0
Motor Rpm	-	1740
Phase	3	3
Voltage (rated)	480	230/460
Amperage (rated)	-	5.38/2.69
Service Factor	-	1.15

Drive Data	
	Actual
Motor Sheave Size	4"
Motor Bore Size	1.5"
Motor Sheave SetPt	2 TURNS
Fan Sheave Size	6"
Fan Sheave Bore	1"
Belt CL Distance	9"
Num of Belts	2
Belt Size	NL

Test Data		
	Design	**Actual**
CFM	3300	3478
Fan RPM	-	1348
Fan Rotation	-	CCW
Motor RPM	-	1710
RL Voltage	-	(1)
RL Amperage	-	(1)
Suction ESP	-	-1.34"
Discharge ESP	-	ATM
Total ESP	1.50"	1.34"

Completed By: Oscar Ventura on 08/05/2024

Notes:
(1) WIRING NOT ACCESIBLE.

Written By: Wesley John on 08/22/2024

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

System/Unit: FAN - Exhaust

Asset: KEF2 AREA:HOOD-2

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	HRE-20	HRE-20
Serial Num	-	NL
Type	UTILITY	UTILITY
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	DAYTON
Frame	-	143-5T
Horsepower	2.0	2.0
Motor Rpm	-	1750
Phase	3	3
Voltage (rated)	480	208-230/460
Amperage (rated)	-	5.9/2.8
Service Factor	-	1.25

Drive Data	
	Actual
Motor Sheave Size	4"
Motor Bore Size	0.75"
Motor Sheave SetPt	2 TURNS
Fan Sheave Size	6"
Fan Sheave Bore	1"
Belt CL Distance	9.25"
Num of Belts	2
Belt Size	BX30

Test Data		
	Design	**Actual**
CFM	3375	3041
Fan RPM	-	1286
Fan Rotation	-	CCW
Motor RPM	-	1704
RL Voltage	-	(1)
RL Amperage	-	(1)
Suction ESP	-	-1.24"
Discharge ESP	-	ATM
Total ESP	1.50"	1.24"

Completed By: Oscar Ventura on 08/05/2024

Notes:
(1) WIRING NOT ACCESIBLE.

Written By: Wesley John on 08/13/2024

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

System/Unit: FAN - Exhaust

Asset: KEF3 AREA:HOOD-3

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	HRE-20	HRE-20
Serial Num	-	NL
Type	UTILITY	UTILITY
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	DAYTON
Frame	-	143-5T
Horsepower	1.5	1.5
Motor Rpm	-	1750
Phase	3	3
Voltage (rated)	480	208-230/460
Amperage (rated)	-	4.5/2.1
Service Factor	-	1.15

Drive Data	
	Actual
Motor Sheave Size	4"
Motor Bore Size	0.75"
Motor Sheave SetPt	2 TURNS
Fan Sheave Size	5.25"
Fan Sheave Bore	1"
Belt CL Distance	10"
Num of Belts	1
Belt Size	A31

Test Data		
	Design	**Actual**
CFM	2940	3116
Fan RPM	-	1298
Fan Rotation	-	CCW
Motor RPM	-	1729
RL Voltage	-	(1)
RL Amperage	-	(1)
Suction ESP	-	-1.09"
Discharge ESP	-	ATM
Total ESP	1.50"	1.09"

Completed By: Oscar Ventura on 08/05/2024

Notes:
(1) WIRES NOT ACCESIBLE.

Written By: Oscar Ventura on 08/05/2024

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

System/Unit: FAN - Exhaust

Asset: KEF4 AREA:HOOD-4

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	CUBE-180-20	CUBE-180-20
Serial Num	-	NL
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	2.0	NL
Motor Rpm	-	NL
Phase	3	3
Voltage (rated)	480	480
Amperage (rated)	-	NL
Service Factor	-	NL

Drive Data	
	Actual
Motor Sheave Size	5"
Motor Bore Size	0.25"
Motor Sheave SetPt	2 TURNS
Fan Sheave Size	6"
Fan Sheave Bore	0.5"
Belt CL Distance	7"
Num of Belts	1
Belt Size	AX27

Test Data		
	Design	**Actual**
CFM	4000	3674
Fan RPM	-	1254
Fan Rotation	-	CCW
Motor RPM	-	1726
RL Voltage	-	(1)
RL Amperage	-	(1)
Suction ESP	-	-1.36"
Discharge ESP	-	ATM
Total ESP	1.50"	1.36"

Completed By: Oscar Ventura on 08/05/2024

Notes:
(1) WIRES NOT ACCESIBLE.

Written By: Wesley John on 08/22/2024

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

System/Unit: FAN - Exhaust

Asset: KEF5 AREA:HOOD-5

Unit Data		
	Design	**Actual**
MFG	GREENHECK	DAYTON
Model Num	CUE-101-A	4HZ416
Serial Num	-	14553354
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	48Y
Horsepower	-	1/4
Motor Rpm	-	NL
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	3.6
Service Factor	-	1.00

Test Data		
	Design	**Actual**
CFM	1050	794
Fan RPM	-	DD
Fan Rotation	-	CCW
Motor RPM	-	DD
System SetPt	-	NA
RL Voltage	-	(1)
RL Amperage	-	(1)
Total ESP	0.75"	0.45"
Fan Inlet SP	-	0.45"
Fan Discharge SP	-	ATM

Completed By: Oscar Ventura on 08/05/2024

Notes:
(1) WIRING NOT ACCESIBLE.

Written By: Wesley John on 08/22/2024

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

System/Unit: FAN - Supply

Asset: MAU1 AREA:HOODS

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	KSF-118-H30	KSF-118-HD30-DB
Serial Num	-	05E30974
Type	MAU	MAU
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	(1)
Frame	-	(1)
Horsepower	7.5	(1)
Motor Rpm	-	(1)
Phase	3	3
Voltage (rated)	480	460
Amperage (rated)	-	14.4
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	9490	6086
SF RPM	-	1245
Motor RPM	-	1689
RL Voltage	-	438
RL Amperage	-	7.2/7.1/7.1

General	
	Actual
Fan Rotation Correct	YES

Completed By: Oscar Ventura on 08/05/2024

Notes:
(1) DATA TAG NOT LEGIBLE

Written By: Wesley John on 08/22/2024

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:COOKLINE

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	5424 ND-BR	5424 ND-BR
Job / Serial Num	-	NL
Type	TYPE 1	TYPE 1
Hood length	132"	132"
Hood Width	54"	54"
Supply Plenum Type	-	BACK RETURN

Test Data Exhaust		
	Design	**Actual**
Filter Type	SS BAFFLE	BAFFLE
Filter Size 1	16X16	16X16
Filter Size 2	16X20	16X20
Filter Qty 1	2	2
Filter Qty 2	5	5
Filter AK factor size 1	3.32	1.62
Filters AK factor size 2	10.50	2.08
Filter Total AK Area	13.82	13.64
Filter1 FPM	-	182
Filter2 FPM	-	171
Filter3 FPM	-	254
Filter4 FPM	-	374
Filter5 FPM	-	346
Filter6 FPM	-	256
Filter7 FPM	-	202
Filter Ave FPM(corr)	-	255
CFM	3300	3478

Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	WOK

Completed By: Oscar Ventura on 08/05/2024

Notes:
HOOD SUPPLY READ AT ROOF.

Written By: Wesley John on 08/22/2024

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

System/Unit: Kitchen Hood Type I

Asset: HD2 AREA:COOKLINE

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	5424 ND-BR	5424 ND-BR
Job / Serial Num	-	NL
Type	TYPE I	TYPE I
Hood length	135"	135"
Hood Width	54"	54"
Supply Plenum Type	-	BACK RETURN

Test Data Exhaust		
	Design	**Actual**
Filter Type	SS BAFFLE	BAFFLE
Filter Size 1	16X16	16X16
Filter Size 2	16X20	16X20
Filter Qty 1	1	2
Filter Qty 2	6	5
Filter AK factor size 1	1.66	1.62
Filters AK factor size 2	12.6	2.08
Filter Total AK Area	14.26	13.64
Filter1 FPM	-	141
Filter2 FPM	-	166
Filter3 FPM	-	240
Filter4 FPM	-	264
Filter5 FPM	-	220
Filter6 FPM	-	197
Filter7 FPM	-	182
Filter Ave FPM(corr)	-	201
CFM	3375	3041

Cooking Equipment	
	Actual
Item 1	FRYERS
Item 2	WOK

Completed By: Oscar Ventura on 08/05/2024

Notes:
HOOD SUPPLY READ AT ROOF.

Written By: Wesley John on 08/22/2024

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

System/Unit: Kitchen Hood Type I

Asset: HD3 AREA:COOKLINE

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	5424 ND-BR	5424 ND-BR
Job / Serial Num	-	NL
Type	TYPE I	TYPE 1
Hood length	141"	141"
Hood Width	54"	54"
Supply Plenum Type	-	BACK RETURN

Test Data Exhaust		
	Design	**Actual**
Filter Type	SS BAFFLE	BAFFLE
Filter Size 1	16X20	16X20
Filter Qty 1	7	7
Filter AK factor size 1	14.7	2.08
Filter Total AK Area	14.7	14.56
Filter1 FPM	-	202
Filter2 FPM	-	178
Filter3 FPM	-	247
Filter4 FPM	-	264
Filter5 FPM	-	242
Filter6 FPM	-	179
Filter7 FPM	-	184
Filter Ave FPM(corr)	-	214
CFM	2940	3116

Cooking Equipment	
	Actual
Item 1	FRYERS
Item 2	WOK

Completed By: Oscar Ventura on 08/05/2024

Notes:
HOOD SUPPLY READ AT ROOF.

Written By: Wesley John on 08/22/2024

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

System/Unit: Kitchen Hood Type I

Asset: HD4 AREA:COOKLINE

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	4824 ND-BR	4824 ND-BR
Job / Serial Num	-	NL
Type	TYPE I	TYPE 1
Hood length	192"	192"
Hood Width	48"	48"
Supply Plenum Type	-	BACK RETURN

Test Data Exhaust		
	Design	**Actual**
Filter Type	SS BAFFLE	BAFFLE
Filter Size 1	16X16	16X16
Filter Size 2	16X20	16X20
Filter Qty 1	2	1
Filter Qty 2	8	9
Filter AK factor size 1	3.32	1.62
Filters AK factor size 2	16.8	2.08
Filter Total AK Area	20.12	20.34
Filter1 FPM	-	151
Filter2 FPM	-	165
Filter3 FPM	-	197
Filter4 FPM	-	168
Filter5 FPM	-	163
Filter6 FPM	-	156
Filter7 FPM	-	183
Filter8 FPM	-	166
Filter9 FPM	-	131
Filter10 FPM	-	128
Filter Ave FPM(corr)	-	161
CFM	4000	3674

Cooking Equipment	
	Actual
Item 1	FRYERS
Item 2	WOK
Item 3	GRIDDLE

Completed By: Oscar Ventura on 08/05/2024

Notes:
HOOD SUPPLY READ AT ROOF.

Written By: Wesley John on 08/22/2024

National TAB

Project: 07-29-24 PF CHANGS SAN ANTONIO, TX

System/Unit: Kitchen Hood Type II

Asset: HD(Type2)5 AREA:DISHWASH

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	4224 VH1-G	4224 VH1-G
Serial Num	-	NL
Type	TYPE II	TYPE II
Hood length	84"	84"
Hood Width	42"	42"

Test Data		
	Design	**Actual**
Exhaust CFM	1050	794

Completed By: Oscar Ventura on 08/05/2024