

National TAB

Project: 08/29 SHAKE SHACK #1356 - HINGHAM, MA (TAB + IAQ)

System/Unit: AHU/RTU



Comfort. Under control.

Asset: ACU1

AREA:OFFICE

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	1619V15781
Model Num	40MBCQ09	40MBCQ09---3
Type	FCU	FCU
Configuration	VERTICAL	CASSETTE

Test Data		
	Design	Actual
OA CFM	15	16

Completed By: Wesley John

Notes:

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Project: 08/29 SHAKE SHACK #1356 - HINGHAM, MA (TAB + IAQ)

System/Unit: AHU/RTU



Comfort. Under control.

Asset: RTU1

AREA:KITCHEN

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	1622P06806
Model Num	48HCFD09	48HCFD14A2Q6A6U1M0
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL DISCHARGE
Num OA Filters 1	-	2
OA Filter Size 1	-	24x26
Num Final Filter 1	-	6
Final Filter Size 1	-	18x24x2

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56HZ
Horsepower	-	NL
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	460	460
Rated Amperage	-	4.6

Drive Data		
	Design	Actual
Motor Sheave Size	-	1VM50
Motor Bore Size	-	7/8"
Motor Sheave SetPt	-	CLOSED
Fan Sheave Size	-	AK104
Fan Sheave Bore	-	1 3/16"
Belt CL Distance	-	20 1/2"
Num of Belts	-	1
Belt Size	-	A61
Belt Alignment	-	CORRECT

Test Data		
	Design	Actual
SF CFM	5000	4618
SF RPM	-	783
RA CFM	4500	4112
OA CFM	500	506
RL Voltage	-	483/485/486
RL Amperage	-	4.2/4.3/4.2
SF Rotation	-	CCW
RA Damper Position	-	88%
Min OA Damper Position	-	3.00 VDC (12%)
Min OA Damper Type	-	OPPOSED BLADE

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.93"
Fan Suction SP	-	-1.11"
Fan Discharge SP	-	0.57"
Total ESP	0.70"	1.50"
Fan Total SP	-	1.68"

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

Completed By: Wesley John

Notes:

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Project:08/29 SHAKE SHACK #1356 - HINGHAM, MA (TAB + IAQ)

AHU/RTU



Comfort. Under control.

Diffuser Supply (GRD)

RTU1/KITCHEN

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	BOH KITCHEN	D5	15"	625	1.0	502	579	578	92.5
SGRD2	WORK ROOM	D5	15"	625	1.0	673	699	592	94.7
SGRD3	KITCHEN	D5	15"	625	1.0	489	568	564	90.2
SGRD4	KITCHEN	D5	15"	625	1.0	461	520	568	90.9
SGRD5	KITCHEN	D4	16"	625	1.0	608	691	573	91.7
SGRD6	KITCHEN	D4	16"	625	1.0	424	488	570	91.2
SGRD7	KITCHEN	D4	16"	625	1.0	468	542	581	93.0
SGRD8	KITCHEN	D5	15"	625	1.0	493	555	592	94.7

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Project: 08/29 SHAKE SHACK #1356 - HINGHAM, MA (TAB + IAQ)

System/Unit: AHU/RTU



Comfort. Under control.

Asset: RTU2

AREA: DINING

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	2922P79614
Model Num	48HCFD09	48HCFD09A26A6U1M0
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL DISCHARGE
Num OA Filters 1	-	1
OA Filter Size 1	-	20x36
Num Final Filter 1	-	4
Final Filter Size 1	-	20x20x2

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56HZ
Horsepower	-	NL
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	460	460
Rated Amperage	-	3.3

Drive Data		
	Design	Actual
Motor Sheave Size	-	1VL44
Motor Bore Size	-	5/8"
Motor Sheave SetPt	-	4.5 TURNS OPEN
Fan Sheave Size	-	AFD74
Fan Sheave Bore	-	1"
Belt CL Distance	-	16 1/2"
Num of Belts	-	1
Belt Size	-	A48
Belt Alignment	-	CORRECT

Test Data		
	Design	Actual
SF CFM	3400	3472
SF RPM	-	742
RA CFM	2550	2589
OA CFM	850	883
RL Voltage	-	486/487/484
RL Amperage	-	2.0/2.0/1.8
SF Rotation	-	CCW
RA Damper Position	-	58%
Min OA Damper Position	-	5.40 VDC (42%)
Min OA Damper Type	-	OPPOSED BLADE

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.51"
Fan Suction SP	-	-0.73"
Fan Discharge SP	-	0.47"
Total ESP	0.70"	0.98"
Fan Total SP	-	1.20"

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

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Notes:

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Project:08/29 SHAKE SHACK #1356 - HINGHAM, MA (TAB + IAQ)

AHU/RTU



Comfort. Under control.

Diffuser Supply (GRD)

RTU2/DINING

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	VESTIBUL E	D1	8"	240	1.0			251	104.6
SGRD2	QUEUE	D3	12/6	235	1.0				-
SGRD3	QUEUE	D3	12/6	235	1.0				-
SGRD4	DINING	D3	12/6	235	1.0				-
SGRD5	DINING	D3	12/6	235	1.0				-
SGRD6	DINING	D3	12/6	235	1.0				-
SGRD7	DINING	D3	12/6	235	1.0				-
SGRD8	DINING	D3	12/6	235	1.0				-
SGRD9	DINING	D3	12/6	235	1.0				-
SGRD10	DINING	D3	12/6	235	1.0				-
SGRD11	DINING	D3	12/6	235	1.0				-
SGRD12	DINING	D3	12/6	235	1.0				-
SGRD13	DINING	D3	12/6	235	1.0				-
SGRD14	MENS RR	D2	4"	90	1.0			95	105.6
SGRD15	WOMENS RR	D2	7"	160	1.0			168	105.0
SGRD16	EGRESS STAIR	D1	6"	90	1.0	3681	3472	92	102.2

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Project: 08/29 SHAKE SHACK #1356 - HINGHAM, MA (TAB + IAQ)

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF1

AREA:HOOD 1

Unit Data		
	Design	Actual
MFG	HALTON	COOK
Model Num	HSTXDRHUL1575SC	150 VCR
Serial Num	-	007SJ80708
Type	-	CENTRIFUGAL
Configuration	-	UPBLAST

Test Data		
	Design	Actual
CFM	-	1872
Fan RPM	-	1300
Fan Rotation	-	CCW
Motor RPM	-	1300
RL Voltage	-	121
RL Amperage	-	8.4
Suction ESP	-	-0.68"
Discharge ESP	-	ATM
Total ESP	-	0.68"

Motor Data		
	Design	Actual
Motor MFG	-	GENTEQ
Frame	-	NL
Horsepower	-	0.75
Motor Rpm	-	1300
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	9.0
Service Factor	-	NL

Drive Data		
	Design	Actual
Motor Sheave Size	-	DIRECT DRIVE
Motor Bore Size	-	DIRECT DRIVE
Motor Sheave SetPt	-	DIRECT DRIVE
Fan Sheave Size	-	DIRECT DRIVE
Fan Sheave Bore	-	DIRECT DRIVE
Belt CL Distance	-	DIRECT DRIVE
Num of Belts	-	DIRECT DRIVE
Belt Size	-	DIRECT DRIVE

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Project: 08/29 SHAKE SHACK #1356 - HINGHAM, MA (TAB + IAQ)

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF2

AREA:HOOD 2

Unit Data		
	Design	Actual
MFG	HALTON	COOK
Model Num	HSTXDRHUL1575SC	150 VCR
Serial Num	-	007SJ80708
Type	-	CENTRIFUGAL
Configuration	-	UPBLAST

Motor Data		
	Design	Actual
Motor MFG	-	GENTEQ
Frame	-	NL
Horsepower	-	0.75
Motor Rpm	-	1300
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	9.0
Service Factor	-	NL

Drive Data		
	Design	Actual
Motor Sheave Size	-	DIRECT DRIVE
Motor Bore Size	-	DIRECT DRIVE
Motor Sheave SetPt	-	DIRECT DRIVE
Fan Sheave Size	-	DIRECT DRIVE
Fan Sheave Bore	-	DIRECT DRIVE
Belt CL Distance	-	DIRECT DRIVE
Num of Belts	-	DIRECT DRIVE
Belt Size	-	DIRECT DRIVE

Test Data		
	Design	Actual
CFM	-	1649
Fan RPM	-	DIRECT DRIVE
Fan Rotation	-	CCW
Motor RPM	-	DIRECT DRIVE
RL Voltage	-	121
RL Amperage	-	6.2
Suction ESP	-	-0.71"
Discharge ESP	-	ATM
Total ESP	-	0.71"

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Project: 08/29 SHAKE SHACK #1356 - HINGHAM, MA (TAB + IAQ)

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF3

AREA:RESTROOMS

Unit Data		
	Design	Actual
MFG	GREENHECK	GREENHECK
Model Num	G-095-D	G-095-DGE117XQD
Serial Num	-	18972484
Type	DOWNBLAST	CENTRIFUGAL
Configuration	HORIZONTAL	DOWNBLAST

Motor Data		
	Design	Actual
Motor MFG	-	MCMILLAN
Frame	-	NL
Horsepower	1/8	0.125
Motor Rpm	-	1550
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	2.6
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	350	391
Fan RPM	1550	1050
Fan Rotation	-	CW
Motor RPM	-	1050
System SetPt	-	LOW
RL Voltage	-	120
RL Amperage	-	1.2
Total ESP	0.50"	0.26"
Fan Inlet SP	-	-0.26"
Fan Discharge SP	-	ATM

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Project:08/29 SHAKE SHACK #1356 - HINGHAM, MA (TAB + IAQ)

FAN - Exhaust



Comfort. Under control.

Diffuser Ret/Exh (GRD)

EF3/RESTROOMS

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	MENS RR	G1	8/8	140	1.0	235	173	160	114.3
EGRD2	WOMENS RR	G1	8/8	210	1.0	305	223	231	110.0

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Project: 08/29 SHAKE SHACK #1356 - HINGHAM, MA (TAB + IAQ)

System/Unit: FAN - Supply



Comfort. Under control.

Asset: MAU1

AREA:COOKLINE

Unit Data		
	Design	Actual
MFG	HALTON	HALTON
Model Num	MUA-DGX-2800	MUA-DGX-2800
Serial Num	-	110319-529
Type	MAU	MAU
Configuration	VERTICAL	VERTICAL DISCHARGE

Motor Data		
	Design	Actual
Motor MFG	-	WEG
Frame	-	143/5T
Horsepower	3	2
Motor Rpm	1800	1740
Phase	3	3
Voltage (rated)	460	460
Amperage (rated)	-	2.69
Service Factor	-	1.15

Gas Heat		
	Design	Actual
Heater Operates (y/n)	-	NO
Flame Status (pass/fail)	-	N/A
Inlet Air Temp SetPt	55	55
Discharge Air Temp SetPt	60	60
Air Flow Switch SP Actual	-	N/A

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Notes:

Test Data		
	Design	Actual
CFM	2800	2724
SF RPM	-	1740
Motor RPM	-	1740
SF System SetPt	-	60.0 Hz
RL Voltage	-	483/484/484
RL Amperage	-	1.4/1.3/1.3
Total ESP	-	0.53"
Fan Discharge SP	-	0.53"

General		
	Design	Actual
Fan Rotation Correct	-	YES

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Project: 08/29 SHAKE SHACK #1356 - HINGHAM, MA (TAB + IAQ)

System/Unit: Kitchen Hood Type I



Comfort. Under control.

Asset: HD1

AREA:

Unit Data		
	Design	Actual
MFG	HALTON	HALTON
Model Num	KVC	KVC
Job / Serial Num	-	110319-428
Type	TYPE I LOW PROXIMITY	TYPE I CANOPY
Hood length	113"	113
Hood Width	55"	55

Test Data Supply		
	Design	Actual
Plenum SP	-	0.25"

Performance Data		
	Design	Actual
Smoke Generation Type	-	45 SECOND SMOKE CARTRIDGE
Hood Capture %	-	100

Test Data Exhaust		
	Design	Actual
Filter Size 1	20X13	20X13
Filter Size 2	11X13	11X13
Filter Qty 1	5	5
Filter Qty 2	1	1
Plenum SP	-	0.240"
CFM	-	1872

General		
	Design	Actual
Third Party Witness	-	JOEL MATTHEWS
Third Party Company	-	CM&B
Tech Witness	-	WESLEY JOHN
Tech Company	-	NATIONAL TAB

Cooking Equipment		
	Design	Actual
Item 1	-	GRIDDLE
Item 2	-	FRYER

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Notes:

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Project: 08/29 SHAKE SHACK #1356 - HINGHAM, MA (TAB + IAQ)

System/Unit: Kitchen Hood Type I



Comfort. Under control.

Asset: HD2

AREA:

Unit Data		
	Design	Actual
MFG	HALTON	HALTON
Model Num	KVC	KVC
Job / Serial Num	-	110319-478
Type	TYPE I LOW PROXIMITY	TYPE I CANOPY
Hood length	113"	113
Hood Width	55"	55

Test Data Exhaust		
	Design	Actual
Filter Size 1	20X13	20X13
Filter Size 2	11X13	11X13
Filter Qty 1	5	5
Filter Qty 2	1	1
Plenum SP	-	0.184"
CFM	-	1649

Cooking Equipment		
	Design	Actual
Item 1	-	FRYER
Item 2	-	GRIDDLE

Test Data Supply		
	Design	Actual
Plenum SP	-	0.25"

Performance Data		
	Design	Actual
Smoke Generation Type	-	45 SECOND SMOKE CARTRIDGE
Hood Capture %	-	100

General		
	Design	Actual
Third Party Witness	-	
Third Party Company	-	
Tech Witness	-	WESLEY JOHN
Tech Company	-	NATIONAL TAB

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Notes: HOOD DESIGN EXHAUST CFM: 1630 HOOD EXHAUST PLENUM SP: 0.18" HOOD SUPPLY PLENUM SP: 0.25"