

**Report By:**

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

**NATIONAL**

**TAB**

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**Report: Commissioning**

**Date: 1/1/2022**

# **PROJECT**

## **Shake Shack (Lee's Summit) - Commissioning**

2051 NW Lowenstein Drive

Lee's Summit, MO 64081

### **Client**

24 Union Square East, 5th Fl

New York, NY 10003



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make it easy

# National TAB

Project: Shake Shack (Lee's Summit) - Commissioning

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## Shake Shack (Lee's Summit) - Commissioning

### Project Issue Information

**Issue Name :** MECHANICAL: Grease duct curb plate transition

**Description :** Both fans have curb plates that are not centered to the curb. Therefore, the Venturi may have slight/partial area that is blocked off from the grease duct main line. I assume the venturi's will be at least 90-95% open so not sure it will have a major impact. The purpose of this is to make sure we don't need to have modifications made to the duct as it will cause more havoc to do so later. Can we have Halton evaluate and resubmit the fan with a new system / fan performance curve so we know in advance if we will be able to meet the design airflow rates at higher fan RPM's or if any other solutions need to be considered.

**Created By :** National TAB

**Assigned To :** National TAB - Dan Hertenstein

**Status :** Open

**Originated Date :** 10/13/2021 - Dan Hertenstein - National TAB

#### Project Issue File Details

1. [Open](#) thumbnail\_IMG\_9160.jpg
2. [Open](#) thumbnail\_IMG\_9159.jpg
3. [Open](#) thumbnail\_IMG\_9158.jpg
4. [Open](#) thumbnail\_IMG\_9157.jpg

#### Project Issue Response Details

- **12/03/2021**      **National TAB - Dan Hertenstein**
  - KEF1 Transition is built and Installed.





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## Shake Shack (Lee's Summit) - Commissioning

### Project Issue Information

**Issue Name :** MECHANICAL: OA Damper for KITCHEN RTU

**Description :** OA damper blade seal strip has fallen loose from damper blade & Mesh OA filter needs to be replaced due to damage to the filter

**Created By :** National TAB

**Assigned To :** National TAB - Dan Hertenstein

**Status :** Open

**Originated Date :** 11/17/2021 - Dan Hertenstein - National TAB







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## Shake Shack (Lee's Summit) - Commissioning

### CheckList Information

<b>Name :</b>	(FIV) - THERMOSTAT, HUMIDITY SENSORS, AND CONTROLS	<b>Status :</b>	NotSubmitted
<b>Assigned Organization :</b>	National TAB	<b>Asset :</b>	
<b>Requesting Organization :</b>	National TAB		

### CheckList Item Details

Space sensors and humidity sensors are installed per plan in the proper location and orientation	Pass
--	------

Thermostats are installed in the office and properly tagged for the location/sensor they serve	Pass
--	------

Thermostats are wired to each sensor(s)	Pass
---	------

Thermostats are wired to their respective RTU	Pass
---	------

Validate the humidity sensor is wired from the thermostat to each RTU	N/A
---	-----

Validate the occupancy sensor is wired to the RTU for proper control based on the thermostat call for occupied or unoccupied periods	Fail
--	------

Ensure the sensors are insulated from any external wall if placed on external walls	N/A
---	-----

Ensure the sensors are installed in areas that are not affected by radiant, HVAC air systems, or other appliance which would cause false readings	Pass
---	------

Ensure the sensors are not located in a area that would require additional protection to prevent inadvertent physical harm.	Pass
---	------



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## Shake Shack (Lee's Summit) - Commissioning

### CheckList Information

**Name :** (FIV) -RTU'S **Status :** NotSubmitted  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB

### CheckList Item Details

#### RTU-DINING IDENTIFICATION, ORIENTATION & LOCATION

Identify and ensure the RTU tag information and size is correct	Pass
Each RTU is Tagged for identification and is sized and located for visual ease	Pass
Ensure proper location of unit	Pass
Ensure orientation of curb & RTU is per plan	Pass
Ensure Packing in the blower compartment has been removed	Pass

#### RTU - DINING INSTALLATION DETAILS

With disconnect switch "off" spin the indoor and outdoor fan wheel's by hand and ensure they spin freely	Pass
Ensure Roof Curb is fully flashed by roofing material and secured and curb is level	Pass
Inspect the interior of the supply heat exchange compartment and return air compartment - validate that the duct is flashed and sealed to the top of the curb to prevent leakage or short cycling	Pass
Hail guards installed on outdoor condenser coils	Pass

#### RTU - DINING ACCESSORIES

Power connected & disconnect installed	Pass
Gas line connected per specification (size, painting, supports, shut-off valves, traps)	Pass

Evaporator coil filters are properly installed with specified MERV rating	Pass
---	------

OA hood & filters installed	Pass
-----------------------------	------

Economizer wired to control board	Pass
-----------------------------------	------

Economizer damper is installed properly	Pass
---	------

Economizer OA temperature / enthalpy sensors installed and wired	Pass
--	------

Relief Fan or barametric relief damper is installed per submittal	Pass
---	------

Space thermostat and humidity control and occupied wires are properly landed to RTU terminals	Pass
---	------

Condensate drain installed per specification	Pass
--	------

Condensate line drains away from unit to a approved roof drain (water is not allowed to pool on the roof)	Pass
---	------



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## Shake Shack (Lee's Summit) - Commissioning

### CheckList Information

<b>Name :</b>	(FPT) - PACKAGED RTU (DINING)	<b>Status :</b>	NotSubmitted
<b>Assigned Organization :</b>	National TAB	<b>Asset :</b>	
<b>Requesting Organization :</b>	National TAB		

### CheckList Item Details

#### THERMOSTAT PROGRAMMING AND CALIBRATION

Occupied Time	8:30 AM
Occupied Heat setpoint - Cooling Setpoint - Dehumidification Setpoint	68 / 73 / No dehumidification
Unoccupied Time	10:30 PM
Unoccupied Heat Setpoint - Cooling Setpoint - Dehumidification Setpoint	60 / 80 / No Dehumidification
Space Sensor (TSTAT) Temp and RH reading / Commissioning Agent Space Temp and RH reading	74 space Avg Thermostat Reading: 70.7 (Window Sensor CxA reading) 71 (Dining Corridor Sensor CxA reading): Sensors are out of calibration by +3.5 degrees
Sensor Calibration Is within +/- 1 degree	Fail

#### CONTROL WIRING VALIDATION

Economizer Dry Bulb sensor wired	Pass
Economizer Dry Bulb sensor operational	Pass
Occupied stat wired correctly	Pass
Thermostat Wired correctly (R,C,Y1,Y2,W1,W2)	Pass
Humidity Sensor Wired correctly	No dehumidification specified for RTU's at this location

#### CALIBRATION & PROGRAMMING

Local Weather Data Temperature	63 degree
--------------------------------	-----------

RTU-Honeywell setpoint: Economizer DB StPt, Reading Accuracy (+/- 2 degrees / 10 minute time to calibrate to actual reading)	Occupied : (Pass) Control :(Pass) 55 degree, Sensor is +1.4 degree from reading
Comment	
RTU-Honeywell setpoint: MAT StPt, Reading Accuracy (+/- 2 degrees / 10 minute time to calibrate to actual reading)	Occupied : (Pass) Control :(Pass) 53 degree, Sensor is within + 2 degrees (full cool)
Comment	
RTU-Honeywell setpoint: MAT Low StPt	45 degree
RTU-Honeywell setpoint: Low T Lockout	32 degree
Ventilation Mode Sequence	Occupied : (Pass) Control :(Pass)
Comment	Fan Low speed, OA damper to low speed TAB position, Space temp satisfied
Unoccupied - Fan Auto	Unoccupied : (Pass) Control :(Pass)
Comment	Fan off, OA damper shut, Space temp satisfied
Stage 1 Heat Sequence	Occupied : (Pass) Control :(Pass)
Comment	Fan high speed, OA damper to high speed TAB position, Stage 1 heat energized (W1: 22.7v), Thermostat Display "Heat on"
Stage 2 Heat Sequence	Occupied : (Pass) Control :(Pass)
Comment	Fan high speed, OA damper to high speed TAB position, Stage 2 heat energized (W1: 22.1v, W2: 22.1v), Thermostat Display "Heat on 2"
Heat Sequence (Unoccupied)	Unoccupied : (Pass) Control :(Pass)
Comment	Fan high speed, OA damper opens when heat cycles on (needs to stay closed)
Stage 1 Cooling Sequence	Occupied : (Pass) Control :(Pass)
Comment	Fan low speed, OA damper to low speed TAB position, Stage 1 cool energized (Y1:23.4 v), Thermostat Display "Cool On"
Stage 2 Cooling Sequence	Occupied : (Pass) Control :(Pass)
Comment	Fan high speed, OA damper to high speed TAB position, Stage 2 cool energized (Y1:23.1v, Y2: 23.1v), Thermostat Display "2 Cool On"
Cooling Sequence (Unoccupied)	Unoccupied : (Pass) Control :(Pass)
Comment	Fan speed, OA damper opens when cooling cycles on (needs to stay closed)

Stage 1 cooling Temperature	Occupied : (Pass) Control :(Pass)
Comment	56 deg [mix air 69 deg]
Stage 2 cooling Temperature	Occupied : (Pass) Control :(Pass)
Comment	44 deg [mix air 69 deg] (MAT low temp alarm)
Stage 1 Heating Temperature	Occupied : (Pass) Control :(Pass)
Comment	113 deg (approx 41 deg T-Rise)
Stage 2 Heating Temperature	Occupied : (Pass) Control :(Pass)
Comment	132 deg (approx 60 deg T-Rise)
<b>OUTDOOR AIR / RELIEF DAMPER</b>	
Open Free cooling and confirm OA damper opens 100% RA air damper closes 0% and relief fan energizes	Occupied : (Pass) Control :(Pass)
Comment	OA damper opened 100%, Relief Fan energized
<b>OCCUPANCY VALIDATION</b>	
Place the thermostat in "unoccupied" - Does the OA damper close fully	Unoccupied : (Pass) Control :(Pass)
Comment	
Stage cooling and Heating in "unoccupied" - Does the unit properly stage and does the OA damper remain closed	Unoccupied : (Pass) Control :(Pass)
Comment	OA damper opens on cooling and heating being energized
Place the thermostat in "Occupied" - Does the OA damper open to the TAB preset minimum position in High speed (heat stage 1, heat stage 2, cooling stage 2)	Occupied : (Pass) Control :(Pass)
Comment	
Place the thermostat in "Occupied" - Does the OA damper open to the TAB preset minimum position in ventilation or Stage 1 cooling mode, Low speed	Yes



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## Shake Shack (Lee's Summit) - Commissioning

### CheckList Information

**Name :** (FPT) - PACKAGED RTU (KITCHEN) **Status :** NotSubmitted  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB

### CheckList Item Details

#### THERMOSTAT PROGRAMMING AND CALIBRATION

Occupied Time	6:00 AM
Occupied Heat setpoint - Cooling Setpoint - Dehumidification Setpoint	68 / 73 / No Dehumidification
Unoccupied Time	12:00 AM (Midnight)
Unoccupied Heat Setpoint - Cooling Setpoint - Dehumidification Setpoint	60 / 80 / No Dehumidification
Space Sensor (TSTAT) Temp and RH reading / Commissioning Agent Space Temp and RH reading	Space Sensor Thermostat: 69 Deg, CxA reading: 68 Deg. +1 degree of reading
Sensor Calibration is within +/- 1 degree	Pass

#### CONTROL WIRING VALIDATION

Economizer Dry Bulb sensor wired	Pass
Economizer Dry Bulb sensor operational	Pass
Occupied stat wired correctly	Pass
Thermostat Wired correctly (R,C,Y1,Y2,W1,W2)	Pass
Humidity Sensor Wired correctly	No Dehumidification specified for RTU's at this location

#### CALIBRATION & PROGRAMMING

Local Weather Data Temperature	63 degree
--------------------------------	-----------

RTU-Honeywell setpoint: Economizer DB StPt, Reading Accuracy (+/- 2 deg / 10 minute time to calibrate to actual reading)	Occupied : (Pass) Control :(Pass) 52 degree, +2 degree
Comment	
RTU-Honeywell setpoint: MAT StPt, Reading Accuracy (+/- 2 deg / 10 minute time to calibrate to actual reading)	Occupied : (Pass) Control :(Pass) 53 degree, +6 degree (slow to respond, consider moving sensor)
Comment	
RTU-Honeywell setpoint: MAT Low StPt	45 degree
RTU-Honeywell setpoint: Low T Lockout	32 degree
Ventilation Mode Sequence	Occupied : (Pass) Control :(Pass)
Comment	Fan Low speed, OA damper to preset TAB position, Space Temp Satisfied
Unoccupied Fan Auto Sequence	Unoccupied : (Pass) Control :(Pass)
Comment	Fan off, OA damper shut, Space Temp satisfied
Stage 1 Heat Sequence	Occupied : (Pass) Control :(Pass)
Comment	Fan high speed, OA damper to high speed TAB position, Stage 1 heat energized (W1: 22v), Thermostat Display "Heat On"
Stage 2 Heat Sequence	Occupied : (Pass) Control :(Pass)
Comment	Fan high speed, OA damper to high speed TAB position, Stage 2 heat energized (W1: 22v, W2: 22v), Thermostat Display "Heat On 2"
Heat Sequence (unoccupied)	Unoccupied : (Pass) Control :(Pass)
Comment	Fan high speed, OA damper opens when heat cycles on (needs to stay closed)
Stage 1 Cooling Sequence	Occupied : (Pass) Control :(Pass)
Comment	Fan Low speed, OA damper to low speed TAB position, Stage 1 cool energized (Y1 22.1v) Thermostat Display "Cool On"
Stage 2 Cooling Sequence	Occupied : (Pass) Control :(Pass)
Comment	Fan High speed, OA damper to low speed TAB position, Stage 2 cool energized (Y1 22.1v, Y2 22.1v) Thermostat Display "2 Cool On"
Cooling Sequence (Unoccupied)	Unoccupied : (Pass) Control :(Pass)
Comment	OA damper opens when cooling cycles on in unoccupied, needs to remain closed

Stage 1 Cooling Temperature	Occupied : (Pass) Control :(Pass)
Comment	50.2 (mix air 67 Deg)
Stage 2 Cooling Temperature	Occupied : (Pass) Control :(Pass)
Comment	46.9 Deg (mix air 67 Deg)
Stage 1 Heating Temperature	Occupied : (Pass) Control :(Pass)
Comment	128.4 Deg (approx 55 deg T-Rise)
Stage 2 Heating Temperature	Occupied : (Pass) Control :(Pass)
Comment	140 Deg (approx 65 deg T-Rise)
<b>OUTDOOR AIR / RELIEF DAMPER</b>	
Open Free cooling and confirm OA damper opens 100% RA air damper closes 0% and relief fan energizes	Occupied : (Pass) Control :(Pass)
Comment	OA damper opens 100%, Relief Fan energizes, Fan low speed in stage 1 free cooling, Fan high speed in stage 2 free cooling
<b>OCCUPANCY VALIDATION</b>	
Place the thermostat in "unoccupied" - Does the OA damper close fully	Unoccupied : (Pass) Control :(Pass)
Comment	
Stage cooling and Heating in "unoccupied" Does the unit properly stage and does the OA damper remain closed	Unoccupied : (Pass) Control :(Pass)
Comment	OA damper opens to TAB position, needs to remain closed
Place the thermostat in "Occupied" - Does the OA damper open to the TAB preset minimum position in High speed (heat stage 1, heat stage 2, cooling stage 2)	Occupied : (Pass) Control :(Pass)
Comment	
Place thermostat in "occupied" Does the OA damper open to the TAB minimum position in ventilation or Stage 1 cooling, low speed	Occupied : (Pass) Control :(Pass)
Comment	



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### Shake Shack (Lee's Summit) - Commissioning

#### CheckList Information

**Name :** (FIV) IAQ PHI DEVICES **Status :** NotSubmitted  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB

#### CheckList Item Details

IAQ Phi device tag information is as designed and submitted	Pass
---	------

IAQ Phi device is located and installed securely in the blower compartment	Pass
--	------

IAQ Phi device is properly wired to the RTU Transformer, the Transformer is properly sized for the PHI device, if not a separate 24vac transformer is installed for PHI operation.	Pass
--	------

All wiring from the electrical control cabinet to the blower housing is neatly done and secured (not loose) with zip ties to prevent any loose wiring from interfering with other electrical or mechanical components	Pass
---	------

Installation of the PHI device does not obscure or prevent maintenance from other components of the RTU	Pass
---	------

PHI unit transformer is wired to be energized at all times unless the RTU disconnect is turned "off"	Pass
--	------

A Sticker has been located on the unit to indicate UV light in the blower cabinet and to turn the unit off before servicing	Pass
---	------

A Sticker is located inside the electrical compartment to indicate the make, model, SN and electrical data of the installed PHI unit.	Pass
---	------



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## Shake Shack (Lee's Summit) - Commissioning

### CheckList Information

**Name :** (FPT) -IAQ RTU KITCHEN **Status :** NotSubmitted

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

**Requesting Organization :** National TAB

### CheckList Item Details

#### IAQ RGF PHI SYSTEM

National TAB sticker on electrical panel with Install date, Serial No., replacement cell date	Yes, Installed: 11/11/21, SN: X1VPKG14042: cell replacement date: 11/11/23
Transformer input VAC	211 VAC
Transformer output VAC	24.7 VAC
PHI amperage	0.87 / 0.81 AMPS
Total running load VA	20.7 VA
Transformer rated VA	40VA
Transformer Amp Size	1.67 Amps
PHI - UV light is on when disconnect is "on"	Pass
PHI - UV light is off when disconnect is "off"	Pass



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### Shake Shack (Lee's Summit) - Commissioning

#### CheckList Information

**Name :** (FPT) - KITCHEN HOOD SYSTEM **Status :** NotSubmitted

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

**Requesting Organization :** National TAB

#### CheckList Item Details

Kitchen hood On/Off switch is properly interlocked to energize/de-energize the hood exhaust fans and MUA simultaneously along with the Halton Capture jet fan	Pass
---	------

Hood Lights properly function	Pass
-------------------------------	------

Hood TAB was completed and set to within design rates	Pass
---	------

TAB firm completed and observed hot smoke test with 100% capture rate	Pass
---	------

Hood has automatic temperature sensing to turn the hood on/off based on heat demand	Occupied : ( ) Control :()
---	----------------------------

Comment

Hood life safety test was performed with all proper interlocks per local fire code	
--	--



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## Shake Shack (Lee's Summit) - Commissioning

### CheckList Information

**Name :** (FIV) - KITCHEN HOOD **Status :** NotSubmitted  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB

### CheckList Item Details

#### HOOD INSTALLATION DETAILS

Kitchen hoods TAG's match design and submitted information	Pass
Kitchen hoods are hung Level using 1/2" threaded rod	Pass
Kitchen hoods are supported using beam clamps and/or Unistrut per required structural and local AHJ requirements	Pass
Kitchen hoods are hung level front to back and side to side	Pass
Kitchen hoods are hung at 80" AFF	Pass
Kitchen Hoods are flush against the wall along the bottom and each of it's side walls.	Pass
Caulk is applied (less than 1/8" thick) from the hood against all wall surfaces or between connecting side to side hoods to prevent grease accumulation inside any crevice.	Pass
There are no penetrations into the hood canopy other than fire system nozzles	Pass
The hood is in "As New" condition with no visible damage, rust, pitting, or other blemishes	Pass
All protective film has been peeled away from the wall or other areas of impingement to assure it can be easily and fully removed prior to cleaning.	Pass
<b>HOOD ACCESSORIES</b>	
End panels are installed	Pass

Hood filters are installed	Pass
----------------------------	------

Grease cups are installed	Pass
---------------------------	------

Ceiling Wrappers are installed and the ceiling grid is fixed to the top of the ceiling wrappers	Pass
---	------

Hood control panel has been identified and is located as per plan, is accessible, and contains all components and temperature sensors to meet local interlock (normal and abnormal conditions) and heat auto on/off functionality.	Pass
--	------



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## Shake Shack (Lee's Summit) - Commissioning

### CheckList Information

**Name :** (FPT) - HOOD MUA **Status :** Submitted

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

**Requesting Organization :** National TAB

### CheckList Item Details

Make, Model, and Location of MUA is as planned Pass

TAB firm has balance the MUA to within proper design limits Pass

Blower wheel rotation is correct Pass

MUA does not have any any unusual noise or vibration while operating Pass

Motor and electrical measurements are below the full load rating Pass

Gas pressure to MUA is sufficient for full burner operation Pass

MUA gas fired heater has been started up with proper low and high fire settings as per MFG instructions Occupied : (Pass) Control :(Pass)

Comment National TAB setup the heater with Halton Technical Support

MUA cooling coil has been started up and set for proper on/off command and staging requirements Occupied : (Pass) Control :(Pass)

Comment National TAB setup the DX cooling with Halton Technical Support



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## Shake Shack (Lee's Summit) - Commissioning

### CheckList Information

**Name :** (FIV) - KITCHEN HOOD MUA **Status :** NotSubmitted

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

**Requesting Organization :** National TAB

### CheckList Item Details

MUA Tag information matches design and submittal criteria	Pass
MUA Fan has a permanent tag for identification located on the unit located and sized for visual ease	Pass
MUA is installed in the proper location and orientation	Pass
MUA intake is a minimum 10ft from any exhaust, roof vent or dirty air source	Pass
Blower compartment and internal heater area is free of packing material, debris, and dirt	Pass
Blower wheel turns freely by hand (turn power off prior to testing)	Pass
All MUA compartment and control doors are fully accessible, minimum 36" clearance for service allowing the doors to fully open without restriction	Pass
MUA Electrical disconnect is external to the unit and properly wired	Pass
Outdoor air awning is installed and fitted with proper OA mesh filters	Pass
Condensate drain is installed (for cooling MUA's) with proper traps, clean-outs, and drain away from the unit to an acceptable roof drain	Pass
Refrigeration line sets are installed and connected properly with adequate supports per specifications	Pass
Condenser is installed away from any grease producing exhaust fans and located as per roof plan	Pass

Condenser's electrical disconnect is external to the unit and properly wired

Pass

Condenser hail guards are installed

Pass

All Condenser compartment and control doors are fully accessible, minimum 36" clearance for service allowing the doors to fully open without restriction

Pass

Gas line is installed per specification and properly supported

Pass

Gas line is installed per specification and properly supported and contains maintenance shut-off valve, trap, and regulator (if line pressure requires it). MUA is equipped with inlet gas pressure gauge to validate incoming gas pressure is suitable

Pass



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### Shake Shack (Lee's Summit) - Commissioning

#### CheckList Information

**Name :** (FIV) - KITCHEN HOOD EXHAUST FANS **Status :** NotSubmitted  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB

#### CheckList Item Details

Unit Tag matches the design and submittal MFG and Model	Pass
Each exhaust fan is proper tagged for proper identification with tags sized and placed on the fan for visual ease	Pass
Fans are installed in the correct location and orientation	Pass
All packing, material and debris has been removed from the blower/wheel housing and the motor compartment	Pass
Fan wheels turn easily by hand (turn power off prior to testing)	Pass
Fans grease duct curb top plate is properly transitioned to the fan inlet and flush on top of the curb, sealed to the fan base to prevent leakage	Fail
Exhaust fans have external disconnects and are are connected to allow full hinging of each exhaust fan	Pass
Fan is properly hinged and supported when hinged fully back for grease duct access (for Halton fans, ensure the base mounted disconnect is not hitting the fan base/curb when fully hinged back)	Pass
Grease cups are properly installed and connected to the fan base grease drain to prevent spilling outside of the grease cup	Fail
Exhaust fans are located 5ft from parapet wall and 10ft from any fresh air intake.	Pass
Top of fan discharges a minimum 40" above the finished roof	Pass



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## Shake Shack (Lee's Summit) - Commissioning

### CheckList Information

**Name :** (FPT) - HOOD EXHAUST FANS **Status :** Submitted

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

**Requesting Organization :** National TAB

### CheckList Item Details

Exhaust Fans Make, Model, and Location are per plan	Pass
Exhaust fans wheel rotation is correct	Pass
TAB firm has balanced the exhaust fans to proper design levels	Pass
All motor and electrical readings are below the full load rating of each fan	Pass
Exhaust Fans do not have any unusual noise or vibration while operating	Pass
Smoke and Grease from exhaust fans appear to properly elevate above the parapet wall and off the roof.	Pass



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### Shake Shack (Lee's Summit) - Commissioning

#### CheckList Information

**Name :** (FPT) - RESTROOM EXHAUST FAN **Status :** NotSubmitted

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

**Requesting Organization :** National TAB

#### CheckList Item Details

Unit matches specified brand	No
MFG	Twin City
Model	DCRD-095B
Unit is balanced and reported on the TAB report	Yes
ACFM vs DCFM Per TAB report is within 10% of deviation	236 ACFM / 300 DCFM deviation is greater than -10%. 1.56 RLA /1.7 FLA. Speed dial is at 100% (maximum)
Measured electrical tolerance is acceptable and below full load of motor rating	Yes
Gravity Damper is properly installed, sealed, and operational	Yes
Fan is properly fastened to curb and sealed to prevent air leakage	Yes
Fan is fitted with a bird screen or other suitable devices to prevent bird nesting	Yes



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## Shake Shack (Lee's Summit) - Commissioning

### CheckList Information

**Name :** (FIV) - RESTROOM EXHAUST FAN **Status :** NotSubmitted

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

**Requesting Organization :** National TAB

### CheckList Item Details

Restroom exhaust fan tag matches design and submitted data	Fail
Restroom exhaust fan is tagged with appropriate size tag and located for visual ease	Pass
Restroom exhaust fan is installed in proper location and orientation	Pass
Restroom exhaust fan is a minimum 10ft from any fresh air intake	Pass
Blower wheel and motor housing has all packing, material, and debris removed	Pass
Blower wheel spins freely by hand (ensure the power is off before testing)	Pass
Gravity back draft damper is installed, opens fully by hand and does not hit the fan base or have any other impingement that would prohibit the damper from fully opening or closing	Pass
Gravity back draft damper is fully sealed to prevent any air leakage	Pass
Exhaust duct is fully flashed to the top of the curb and is centered so that the exhaust inlet is not blocked by the top plate. The plate is flush against the bottom of the fan base and sealed to prevent air leakage	Pass
Internal disconnect in the motor compartment is wired and properly powered	Pass
Electrical Whip is of sufficient length to allow the fan to be removed from the curb for maintenance/inspection of the gravity damper and is isolated outside of the air stream and through the curb top plate to prohibit duct air leakage	Pass

Fan is secured to the curb base

Pass

Curb extends a minimum 12" from top of the finished roof

Fail



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### Shake Shack (Lee's Summit) - Commissioning

#### CheckList Information

**Name :** (FIV) - OFFICE FCU **Status :** NotSubmitted  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB

#### CheckList Item Details

##### FCU IDENTIFICATION

Unit Manufacturer & Model matches specified unit

Unit Location is as planned Pass

##### INSTALLATION AND CONTROLS

Unit is properly supported by structure and not bearing weight on the ceiling grid Pass

Condensate line is installed to appropriate drain line Pass

4" outdoor air vent pipe is installed, insulated and connected to the FCU Fail

Applied line voltage is per specification Pass

Unit can be operated via the office remote control device



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### Shake Shack (Lee's Summit) - Commissioning

#### CheckList Information

<b>Name :</b>	(FPT) - PATIO UNIT HEATERS	<b>Status :</b>	NotSubmitted
<b>Assigned Organization :</b>	National TAB	<b>Asset :</b>	
<b>Requesting Organization :</b>	National TAB		

#### CheckList Item Details

All unit heaters installed per plan: Type, Model, Location      Pass

Remote Sensors installed in the office, accessible and properly labeled      Pass

Stage each remote sensor on/off and ensure each remote sensor is correctly assigned to each patio heater      Occupied : (Pass) Control :(Pass)

Comment

Patio heaters stage to full heat and fully off on command      Occupied : (Pass) Control :(Pass)

Comment

Remote's are wireless and due to distance are not able to operate UH's. Remotes are to be removed from wall and held within proper distance to cycle each UH on/off



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## Shake Shack (Lee's Summit) - Commissioning

### CheckList Information

**Name :** (FIV) - PATIO HEATERS **Status :** NotSubmitted

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

**Requesting Organization :** National TAB

### CheckList Item Details

Patio Heater tag information matches design and submitted information	Pass
All patio heater are located and orientated per plan	Pass
Electrician has applied power and validated on/off operation with proper voltage and amperage validating the amp draw is below the full load rating of each unit.	Pass
Patio heaters are equipped with timer clock for unoccupied off periods	N/A
Patio heaters are equipped with outdoor thermostats for occupied auto on operation	N/A
Patio heaters have remote manual switching for override of all automatic controls	Pass