

Report By:

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

NATIONAL

TAB

Comfort. Under control.

**Report: prelim
Function: Test, Adjust, & Balance
Date: 02/13/2023**

PROJECT

**02-13-23 FAMILY DOLLAR - BROADHEAD,
WI**

2410 1ST CENTER AVE

BROADHEAD, WI 53520

Client

Oliphant Heating
208 WOLLARD BLVD

RICHMOND, MO

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Project: 02-13-23 FAMILY DOLLAR - BROADHEAD, WI

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Project: 02-13-23 FAMILY DOLLAR - BROADHEAD, WI

System/Unit: AHU/RTU



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Asset: RTU1

AREA:STORAGE

Unit Data		
	Design	Actual
MFG	CARRIER	TRANE
Serial Num	-	22293512PA
Model Num	48GCE	GBC048A3EMB
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	27X13.5
Num Final Filter 1	-	
Final Filter Size 1	-	
Num Final Filter 2	-	
Final Filter Size 2	-	

Test Data		
	Design	Actual
SF CFM	1750	1693
SF RPM	-	
RA CFM	1600	
OA CFM	150	
RL Voltage	-	
RL Amperage	-	
SF Rotation	-	
RA Damper Position	-	
Min OA Damper Position	-	
Min OA Damper Type	-	
OA Enthalpy Setpt	-	

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	1.4	1.0
Motor Rpm	-	NA
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	4.0

Performance Data		
	Design	Actual
MA Plenum SP	-	
Fan Suction SP	-	
Fan Discharge SP	-	
Total ESP	1.0"	
Fan Total SP	-	

Drive Data		
	Design	Actual
Motor Sheave Size	-	1VL34
Motor Bore Size	-	5/8"
Motor Sheave SetPt	-	2 TURNS OPEN
Fan Sheave Size	-	5.25"
Fan Sheave Bore	-	3/4"
Belt CL Distance	-	14.5"
Num of Belts	-	1
Belt Size	-	AX40
Belt Alignment	-	VERIFIED

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

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Project:02-13-23 FAMILY DOLLAR - BROADHEAD, WI

AHU/RTU



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Diffuser Supply (GRD)

RTU1/STORAGE

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	STORAGE	D	14X6	350	0.46	383	365	365	104.3
SGRD2	STORAGE	D	14X6	350	0.46	267	322	322	92.0
SGRD3	STORAGE	D	14X6	350	0.46	282	334	334	95.4
SGRD4	STORAGE	D	14X6	350	0.46	328	319	319	91.1
SGRD5	RR VESTIBUL E	A	8"	125	1.0	126	130	130	104.0
SGRD6	OFFICE	A	8"	125	1.0	190	118	118	94.4
SGRD7	RESTROOM	C	8"	50	1.0	143	53	53	106.0
SGRD8	RESTROOM	C	8"	50	1.0	184	52	52	104.0

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Project: 02-13-23 FAMILY DOLLAR - BROADHEAD, WI

System/Unit: AHU/RTU



Comfort. Under control.

Asset: RTU2

AREA: WEST SALES

Unit Data		
	Design	Actual
MFG	CARRIER	TRANE
Serial Num	-	222720004MX
Model Num	48FCE	GBC090A3EMA
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	35.5X19
Num Final Filter 1	-	4
Final Filter Size 1	-	18X25X2

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	2.4	2.0
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	200-230
Rated Amperage	-	6.3-6.2

Drive Data		
	Design	Actual
Motor Sheave Size	-	1VP60
Motor Bore Size	-	7/8"
Motor Sheave SetPt	-	0 TURNS OPEN
Fan Sheave Size	-	BK115
Fan Sheave Bore	-	1"
Belt CL Distance	-	19.5"
Num of Belts	-	1
Belt Size	-	B66
Belt Alignment	-	VERIFIED

Test Data		
	Design	Actual
SF CFM	2800	3206
SF RPM	-	
RA CFM	2150	
OA CFM	650	
RL Voltage	-	
RL Amperage	-	
SF Rotation	-	
RA Damper Position	-	
Min OA Damper Position	-	
Min OA Damper Type	-	
OA Enthalpy Setpt	-	

Performance Data		
	Design	Actual
MA Plenum SP	-	
Fan Suction SP	-	
Fan Discharge SP	-	
Total ESP	1.0"	
Fan Total SP	-	

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

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Project:02-13-23 FAMILY DOLLAR - BROADHEAD, WI

AHU/RTU



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Diffuser Supply (GRD)

RTU2/WEST SALES

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	SALES	B	12"	350	1.0	431	398	398	113.7
SGRD2	SALES	B	12"	350	1.0	486	395	395	112.9
SGRD3	SALES	B	12"	350	1.0	367	403	403	115.1
SGRD4	SALES	B	12"	350	1.0	402	410	410	117.1
SGRD5	SALES	B	12"	350	1.0	419	411	411	117.4
SGRD6	SALES	B	12"	350	1.0	336	394	394	112.6
SGRD7	SALES	B	12"	350	1.0	509	395	395	112.9
SGRD8	SALES	B	12"	350	1.0	368	400	400	114.3

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Project: 02-13-23 FAMILY DOLLAR - BROADHEAD, WI

System/Unit: AHU/RTU



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Asset: RTU3

AREA: EAST SALES

Unit Data		
	Design	Actual
MFG	CARRIER	TRANE
Serial Num	-	222720018MX
Model Num	48FCE	GBC090A3EMA
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	35.5X19
Num Final Filter 1	-	4
Final Filter Size 1	-	18X25X2

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	2.4	2.0
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	200-230
Rated Amperage	-	6.3-6.2

Drive Data		
	Design	Actual
Motor Sheave Size	-	1VP60
Motor Bore Size	-	7/8"
Motor Sheave SetPt	-	0 TURNS OPEN
Fan Sheave Size	-	BK115
Fan Sheave Bore	-	1"
Belt CL Distance	-	20"
Num of Belts	-	1
Belt Size	-	B66
Belt Alignment	-	VERIFIED

Test Data		
	Design	Actual
SF CFM	2800	3165
SF RPM	-	
RA CFM	2150	
OA CFM	650	
RL Voltage	-	
RL Amperage	-	
SF Rotation	-	
RA Damper Position	-	
Min OA Damper Position	-	
Min OA Damper Type	-	
OA Enthalpy Setpt	-	

Performance Data		
	Design	Actual
MA Plenum SP	-	
Fan Suction SP	-	
Fan Discharge SP	-	
Total ESP	1.0"	
Fan Total SP	-	

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

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Project:02-13-23 FAMILY DOLLAR - BROADHEAD, WI

AHU/RTU



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Diffuser Supply (GRD)

RTU3/EAST SALES

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	SALES	B	12"	350	1.0	368	385	385	110.0
SGRD2	SALES	B	12"	350	1.0	465	403	403	115.1
SGRD3	SALES	B	12"	350	1.0	354	398	398	113.7
SGRD4	SALES	B	12"	350	1.0	414	397	397	113.4
SGRD5	SALES	B	12"	350	1.0	425	401	401	114.6
SGRD6	SALES	B	12"	350	1.0	354	384	384	109.7
SGRD7	SALES	B	12"	350	1.0	472	405	405	115.7
SGRD8	SALES	B	12"	350	1.0	379	392	392	112.0

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Project: 02-13-23 FAMILY DOLLAR - BROADHEAD, WI

System/Unit: AHU/RTU



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Asset: RTU4

AREA:SOUTH SALES

Unit Data		
	Design	Actual
MFG	CARRIER	TRANE
Serial Num	-	222720043MX
Model Num	48FCE	GBC120A3EMA
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	35.5X19
Num Final Filter 1	-	6
Final Filter Size 1	-	14X25X2

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	3	3.0
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	200-230
Rated Amperage	-	8.8-8.7

Drive Data		
	Design	Actual
Motor Sheave Size	-	1VP60
Motor Bore Size	-	7/8"
Motor Sheave SetPt	-	1 TURN OPEN
Fan Sheave Size	-	BK115
Fan Sheave Bore	-	1"
Belt CL Distance	-	20"
Num of Belts	-	1
Belt Size	-	B66
Belt Alignment	-	VERIFIED

Test Data		
	Design	Actual
SF CFM	3500	3342
SF RPM	-	885
RA CFM	2725	
OA CFM	775	
RL Voltage	-	211/212/211
RL Amperage	-	
SF Rotation	-	
RA Damper Position	-	
Min OA Damper Position	-	
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	

Performance Data		
	Design	Actual
MA Plenum SP	-	
Fan Suction SP	-	
Fan Discharge SP	-	
Total ESP	1.00"	
Fan Total SP	-	

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

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Project:02-13-23 FAMILY DOLLAR - BROADHEAD, WI

AHU/RTU



Comfort. Under control.

Diffuser Supply (GRD)

RTU4/SOUTH SALES

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	SALES	B	12"	440	1.0	422	422	422	95.9
SGRD2	SALES	B	12"	435	1.0	428	428	428	98.4
SGRD3	SALES	B	12"	435	1.0	406	406	406	93.3
SGRD4	SALES	B	12"	440	1.0	414	414	414	94.1
SGRD5	SALES	B	12"	440	1.0	410	410	410	93.2
SGRD6	SALES	B	12"	435	1.0	423	423	423	97.2
SGRD7	SALES	B	12"	435	1.0	403	403	403	92.6
SGRD8	SALES	B	12"	440	1.0	436	436	436	99.1

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Project: 02-13-23 FAMILY DOLLAR - BROADHEAD, WI

System/Unit: FAN - Exhaust



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Asset: EF1

AREA:RESTROOM

Unit Data		
	Design	Actual
MFG	GREENHECK	BROAN
Model Num	SP-B110	SP-B110
Serial Num	-	NL
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	
Frame	-	
Horsepower	80W	
Motor Rpm	-	
Phase	1	
Voltage (rated)	120	
Amperage (rated)	-	
Service Factor	-	

Test Data		
	Design	Actual
CFM	75	91
Fan RPM	-	
Fan Rotation	-	
Motor RPM	-	
System SetPt	-	
RL Voltage	-	
RL Amperage	-	
Total ESP	0.25"	
Fan Inlet SP	-	
Fan Discharge SP	-	

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Project: 02-13-23 FAMILY DOLLAR - BROADHEAD, WI

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF2

AREA:RESTROOM

Unit Data		
	Design	Actual
MFG	GREENHECK	BROAN
Model Num	SP-B110	SP-B110
Serial Num	-	NL
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	
Frame	-	
Horsepower	80W	
Motor Rpm	-	
Phase	1	
Voltage (rated)	120	
Amperage (rated)	-	
Service Factor	-	

Test Data		
	Design	Actual
CFM	75	92
Fan RPM	-	
Fan Rotation	-	
Motor RPM	-	
System SetPt	-	
RL Voltage	-	
RL Amperage	-	
Total ESP	0.25"	
Fan Inlet SP	-	
Fan Discharge SP	-	

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02-13-23 FAMILY DOLLAR - BROADHEAD, WI

CheckList Information

Name : TECH - SITE PICTURES **Status :** NotSubmitted
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB

CheckList Item Details

STORE FRONT

RTU-1

RTU-2

RTU-3

RTU-4

EF-1

EF-2

Notes/Comments :



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02-13-23 FAMILY DOLLAR - BROADHEAD, WI

CheckList Information

Name :	TECH - STEP 1: INITIAL WALKTHROUGH	Status :	NotSubmitted
Assigned Organization :	National TAB	Asset :	
Requesting Organization :	National TAB		

CheckList Item Details

INITIAL SITE WALKTHROUGH

Review Plan Review Checklist, has it been signed off and meets our standards to start balancing? If not contact processor to ensure job is ready.	Yes
All diffusers and grilles are installed and match design?	Yes
Thermostats have power?	Yes
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	Yes

Notes/Comments :



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02-13-23 FAMILY DOLLAR - BROADHEAD, WI

CheckList Information

Name : TECH - STEP 2: UNIT DATA AND EVAL **Status :** NotSubmitted
Assigned Organization : National TAB **Asset :**
Requesting Organization : 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

DCV Max damper opening position is set to minimum? Yes

Free cooling enthalpy set point set for lowest setting (Typically "D") Yes

Motors are all operating below the FLA rating? Yes

Are belts tight? Yes

If direct drive unit is the speed controller working. NA

Is gas piping installed and valves turned on? Yes

Unit free of noticeable noise and vibration Yes

EF's

Rotation is correct? Yes

Belts are tight? NA, Direct Drive

There is no major leakage around base of fan? NA

Is the motor operating below the motor FLA rating? Not Read

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

Unit free of noticeable noise and vibration? Yes

DOCUMENTATION

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

Notes/Comments :



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02-13-23 FAMILY DOLLAR - BROADHEAD, WI

CheckList Information

Name : TECH - STEP 3: TEST, ADJUST AND BALANCE **Status :** NotSubmitted

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

CheckList Item Details

TEST, ADJUST, AND BALANCE ALL EQUIPMENT:

DURING TESTING MAKE NOTE OF THE FOLLOWING:

Is space free of drafting?	Yes
Is space comfortable in all areas?	Yes
Is the space free of ventilation noise?	Yes
If deviations from design were necessary to resolve 1-3 what were they? Otherwise put "NA".	NA

Notes/Comments :



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02-13-23 FAMILY DOLLAR - BROADHEAD, WI

CheckList Information

Name : TECH - STEP 4: FINAL TESTS **Status :** NotSubmitted
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB

CheckList Item Details

FINAL TESTS

ADDITIONAL

Thermostats are programmed?

No, Thermostats were temporarily installed in return duct at time of Balance.

Notes/Comments :