

Report By:

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

NATIONAL

TAB

Comfort. Under control.

**Report: TAB REPORT
Function: Test, Adjust, & Balance
Date: 05/09/2023**

PROJECT

Raymore Commerce Ctr (Raymore, MO)

1200 SOUTH DEAN AVE

RAYMORE, MO 64083

Client

Metro Air Conditioning
8151 McCoy
Shawnee, KS 66227

National TAB

Project: Raymore Commerce Ctr (Raymore, MO)

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National TAB

Project: Raymore Commerce Ctr (Raymore, MO)

System/Unit: AHU/RTU



Comfort. Under control.

Asset: MUA1

AREA:

Unit Data		
	Design	Actual
MFG	RUPP	RUPP
Serial Num	-	
Model Num	NA	NA
Type	-	
Configuration	-	
Num OA Filters 1	-	
OA Filter Size 1	-	
Num Final Filter 1	-	
Final Filter Size 1	-	
Num Final Filter 2	-	
Final Filter Size 2	-	

Motor Data		
	Design	Actual
Motor MFG	-	
Frame	-	
Horsepower	-	
Motor Rpm	-	
Phase	-	
Rated Voltage	-	
Rated Amperage	-	

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

Test Data		
	Design	Actual
SF CFM	37000	
SF RPM	-	
RA CFM	-	
OA CFM	8510	13561
RL Voltage	-	
RL Amperage	-	
SF Rotation	-	
RA Damper Position	-	
Min OA Damper Position	-	9.5VDC
Min OA Damper Type	-	

Performance Data		
	Design	Actual
MA Plenum SP	-	
Fan Suction SP	-	
Fan Discharge SP	-	
Total ESP	across burner	0.93"
Fan Total SP	-	

Completed By: Will Turnbough on

Notes: OA and Pressure across burner taken under windy conditions with 19mph wind gusts.

Date: 05/04/2023

National TAB

Project: Raymore Commerce Ctr (Raymore, MO)

System/Unit: AHU/RTU



Comfort. Under control.

Asset: MUA2

AREA:

Unit Data		
	Design	Actual
MFG	RUPP	RUPP
Serial Num	-	
Model Num	NA	NA
Type	-	
Configuration	-	
Num OA Filters 1	-	
OA Filter Size 1	-	
Num Final Filter 1	-	
Final Filter Size 1	-	
Num Final Filter 2	-	
Final Filter Size 2	-	

Test Data		
	Design	Actual
SF CFM	37000	
SF RPM	-	
RA CFM	-	
OA CFM	8510	12836
RL Voltage	-	
RL Amperage	-	
SF Rotation	-	
RA Damper Position	-	
Min OA Damper Position	-	9.0VDC
Min OA Damper Type	-	
OA Enthalpy Setpt	-	

Motor Data		
	Design	Actual
Motor MFG	-	
Frame	-	
Horsepower	-	
Motor Rpm	-	
Phase	-	
Rated Voltage	-	
Rated Amperage	-	

Performance Data		
	Design	Actual
MA Plenum SP	-	
Fan Suction SP	-	
Fan Discharge SP	-	
Total ESP	across burner	0.90"
Fan Total SP	-	

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

Completed By: Will Turnbough on

Notes: SUPPLY AIR PROVING FAULT AT 9.5VDC OA and Pressure across burner taken under windy conditions with 19mph wind gusts.

Date: 05/04/2023

National TAB

Project: Raymore Commerce Ctr (Raymore, MO)

System/Unit: AHU/RTU



Comfort. Under control.

Asset: MUA3

AREA:

Unit Data		
	Design	Actual
MFG	RUPP	RUPP
Serial Num	-	
Model Num	NA	NA
Type	-	
Configuration	-	
Num OA Filters 1	-	
OA Filter Size 1	-	
Num Final Filter 1	-	
Final Filter Size 1	-	
Num Final Filter 2	-	
Final Filter Size 2	-	

Test Data		
	Design	Actual
SF CFM	37000	
SF RPM	-	
RA CFM	-	
OA CFM	8510	13569
RL Voltage	-	
RL Amperage	-	
SF Rotation	-	
RA Damper Position	-	
Min OA Damper Position	-	9.5VDC
Min OA Damper Type	-	
OA Enthalpy Setpt	-	

Motor Data		
	Design	Actual
Motor MFG	-	
Frame	-	
Horsepower	-	
Motor Rpm	-	
Phase	-	
Rated Voltage	-	
Rated Amperage	-	

Performance Data		
	Design	Actual
MA Plenum SP	-	
Fan Suction SP	-	
Fan Discharge SP	-	
Total ESP	across burner	0.94"
Fan Total SP	-	

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

Completed By: Will Turnbough on

Notes: OA and Pressure across burner taken under windy conditions with 19mph wind gusts.

Date: 05/04/2023

National TAB

Project: Raymore Commerce Ctr (Raymore, MO)

System/Unit: AHU/RTU



Comfort. Under control.

Asset: MUA4

AREA:

Unit Data		
	Design	Actual
MFG	RUPP	RUPP
Serial Num	-	
Model Num	NA	NA
Type	-	
Configuration	-	
Num OA Filters 1	-	
OA Filter Size 1	-	
Num Final Filter 1	-	
Final Filter Size 1	-	
Num Final Filter 2	-	
Final Filter Size 2	-	

Test Data		
	Design	Actual
SF CFM	37000	
SF RPM	-	
RA CFM	-	
OA CFM	8510	13621
RL Voltage	-	
RL Amperage	-	
SF Rotation	-	
RA Damper Position	-	
Min OA Damper Position	-	9.5VDC
Min OA Damper Type	-	
OA Enthalpy Setpt	-	

Motor Data		
	Design	Actual
Motor MFG	-	
Frame	-	
Horsepower	-	
Motor Rpm	-	
Phase	-	
Rated Voltage	-	
Rated Amperage	-	

Performance Data		
	Design	Actual
MA Plenum SP	-	
Fan Suction SP	-	
Fan Discharge SP	-	
Total ESP	across burner	0.93"
Fan Total SP	-	

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

Completed By: Will Turnbough on

Notes: OA and Pressure across burner taken under windy conditions with 19mph wind gusts.

Date: 05/04/2023

National TAB

Project: Raymore Commerce Ctr (Raymore, MO)

System/Unit: AHU/RTU



Comfort. Under control.

Asset: RTU-1

AREA:OFFICE

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	2622C05880
Model Num	48FCEA05A2A6	48FCEA05A2A6A0A0A0
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1 METAL MESH
OA Filter Size 1	-	14.25X28.25
Num PreFilter 1	-	2
PreFilter Size 1	-	16x25x2

Test Data		
	Design	Actual
SF CFM	1600	1594
RA CFM	1380	1368
OA CFM	220	226
RL Voltage	-	497/496/499
RL Amperage	-	1.05/1.04/1.05
OA Damper Position	-	0.5" MARKED
Brake Horse Power	-	0.76

Motor Data		
	Design	Actual
Motor MFG	-	UTO
Frame	-	UTO
Horsepower	-	1.1
Motor Rpm	-	UTO
Phase	-	3
Rated Voltage	-	460
Rated Amperage	-	1.5
Service Factor	-	NL

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.20"
Fan Suction SP	-	-0.37"
Fan Discharge SP	-	0.62"
Total ESP	0.50"	0.82"
Fan Total SP	-	0.99"

Completed By: Jacob Davidson on 01/26/2023

Notes: [1] MOTOR LABEL NOT ACCESSIBLE. MOTOR INFORMATION TAKEN FROM UNIT LABEL. [2] SPEED SETPOINT AT 7.6VDC POSITION B 35% [3] ECONOMIZER MODULE NOT FUNCTIONING. OA WAS SET MANUALLY.

Date: 01/26/2023

National TAB

Project:Raymore Commerce Ctr (Raymore, MO)

AHU/RTU



Comfort. Under control.

Diffuser Supply (GRD)

RTU-1/OFFICE

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1-1	OFFICE	SD-1	10"	400	482	398	99.5
1-2	OFFICE	SD-1	10"	400	478	394	98.5
1-3	OFFICE	SD-1	10"	375	427	384	102.4
1-4	OFFICE	SD-2	6"	25	46	36	144.0
1-5	OFFICE	SD-1	10"	400	474	382	95.5

Completed By: Jacob Davidson on 01/26/2023

Asset	Notes	Date
1-4	DAMPER FULLY CLOSED. UNABLE TO LOWER ANYMORE.	01/26/2023

National TAB

Project: Raymore Commerce Ctr (Raymore, MO)

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF-1

AREA:RESTROOM

Unit Data		
	Design	Actual
MFG	GREENHECK	COOK
Model Num	SPA-A110	GEMINI 140 SERIES SONEBUSTER
Serial Num	-	NA

Test Data		
	Design	Actual
CFM	75	90

Motor Data		
	Design	Actual
Motor MFG	-	QUEACE
Horsepower	25W	15W
Motor Rpm	950	1550
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	0.40/0.22

Completed By: Jacob Davidson on 04/06/2023

Notes: UNIT IS TWO SPEED AND SET TO THE LOWEST SPEED POSSIBLE.

Date: 04/06/2023

National TAB

Project: Raymore Commerce Ctr (Raymore, MO)

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF-A1

AREA:FIRE SPRINKLER ROOM

Unit Data		
	Design	Actual
MFG	NA	COOK
Model Num	NA	120 ACE 120C15D
Serial Num	-	299sj96172- 00/0000701
Type	-	DOWNBLAST

Test Data		
	Design	Actual
CFM	-	1100
RL Voltage	-	NOT SAFE
RL Amperage	-	NOT SAFE
Suction ESP	-	-0.80"
Discharge ESP	-	ATM
Total ESP	-	0.80

Motor Data		
	Design	Actual
Motor MFG	-	QUEACE
Frame	-	48Y
Horsepower	-	1/4
Motor Rpm	-	1550/1300
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	3.3
Service Factor	-	NL

Completed By: Jacob Davidson on 04/06/2023



Comfort. Under control.

National TAB

Project: Raymore Commerce Ctr (Raymore, MO)

System/Unit: FAN - Supply

Asset: MAU-1

AREA:WAREHOUSE

Unit Data		
	Design	Actual
MFG	NA	RUPP AIR SYSTEMS
Model Num	NA	RAM-M 36
Serial Num	-	5242784
Type	-	GAS FIRED
Configuration	-	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TECO WESTINGHOUSE
Frame	-	286T
Horsepower	-	30
Motor Rpm	-	1770
Phase	-	3
Voltage (rated)	-	230/460
Amperage (rated)	-	69.4/34.7
Service Factor	-	1.15

Drive Data		
	Design	Actual
Motor Sheave Size	-	3B5V54
Motor Bore Size	-	1-7/8"
Fan Sheave Size	-	3B5V0250
Fan Sheave Bore	-	2-7/16"
Belt CL Distance	-	30-1/2"
Num of Belts	-	3
Belt Size	-	5VX-1120
Belt Alignment Verified	-	VERIFIED GOOD

Gas Heat		
	Design	Actual
Heater Operates (y/n)	-	YES
Flame Status (pass/fail)	-	PASS
Inlet Air Temp SetPt	-	55
Discharge Air Temp SetPt	-	60
Air Flow Switch SP Actual	-	0.56

Test Data		
	Design	Actual
CFM	37000	35573
SF RPM	368	2347
Motor RPM	-	1767
RL Voltage	-	491/493/494
RL Amperage	-	27.8/28.4/29.4
Total ESP	-	UTO
Fan Discharge SP	-	UTO

General		
	Design	Actual
Fan Rotation Correct	-	YES

Completed By: Jacob Davidson on 04/06/2023

Notes:OCCUPIED DAMPER POSITION: 2.50VDC

Date:04/06/2023



Comfort. Under control.

National TAB

Project: Raymore Commerce Ctr (Raymore, MO)

System/Unit: FAN - Supply

Asset: MAU-2

AREA:WAREHOUSE

Unit Data		
	Design	Actual
MFG	NA	RUPP AIR SYSTEMS
Model Num	NA	RAM-M 36
Serial Num	-	5242784
Type	-	GAS FIRED
Configuration	-	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TECO WESTINGHOUSE
Frame	-	286T
Horsepower	-	30
Motor Rpm	-	1770
Phase	-	3
Voltage (rated)	-	230/460
Amperage (rated)	-	69.4/34.7
Service Factor	-	1.15

Drive Data		
	Design	Actual
Motor Sheave Size	-	3B5V54
Motor Bore Size	-	1-7/8"
Fan Sheave Size	-	3B5V250
Fan Sheave Bore	-	2-7/16"
Belt CL Distance	-	30-1/2"
Num of Belts	-	3
Belt Size	-	5VX-1120
Belt Alignment Verified	-	VERIFIED GOOD

Gas Heat		
	Design	Actual
Heater Operates (y/n)	-	YES
Flame Status (pass/fail)	-	PASS
Inlet Air Temp SetPt	-	55MIN
Discharge Air Temp SetPt	-	120MAX
Air Flow Switch SP Actual	-	0.77"

Test Data		
	Design	Actual
CFM	37000	36044
SF RPM	368	2345
Motor RPM	-	1779
RL Voltage	-	493/496/494
RL Amperage	-	24.45/24.89/25.98
Total ESP	-	UTO
Fan Discharge SP	-	UTO

General		
	Design	Actual
Fan Rotation Correct	-	YES

Completed By: Jacob Davidson on 04/06/2023

Notes:OCCUPIED DAMPER POSITION: 3.00VDC

Date:04/06/2023



Comfort. Under control.

National TAB

Project: Raymore Commerce Ctr (Raymore, MO)

System/Unit: FAN - Supply

Asset: MAU-3

AREA:WAREHOUSE

Unit Data		
	Design	Actual
MFG	NA	RUPP AIR SYSTEMS
Model Num	NA	RAM-M 36
Serial Num	-	5242784
Type	-	GAS FIRED
Configuration	-	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TECO WESTINGHOUSE
Frame	-	286T
Horsepower	-	30
Motor Rpm	-	1770
Phase	-	3
Voltage (rated)	-	230/460
Amperage (rated)	-	69.4/34.7
Service Factor	-	1.15

Drive Data		
	Design	Actual
Motor Sheave Size	-	3B5V54
Motor Bore Size	-	1-7/8"
Fan Sheave Size	-	3B5V250
Fan Sheave Bore	-	2-7/16"
Belt CL Distance	-	30-1/2"
Num of Belts	-	3
Belt Size	-	5VX-1120
Belt Alignment Verified	-	VERIFIED GOOD

Gas Heat		
	Design	Actual
Heater Operates (y/n)	-	YES
Flame Status (pass/fail)	-	PASS
Inlet Air Temp SetPt	-	55MIN
Discharge Air Temp SetPt	-	120MAX
Air Flow Switch SP Actual	-	0.54"

Test Data		
	Design	Actual
CFM	37000	36568
SF RPM	368	2349
Motor RPM	-	1764
RL Voltage	-	493/492/494
RL Amperage	-	28.7/29.5/29.7
Total ESP	-	UTO
Fan Discharge SP	-	UTO

General		
	Design	Actual
Fan Rotation Correct	-	YES

Completed By: Jacob Davidson on 04/06/2023

Notes:OCCUPIED DAMPER POSITION: 3.00VDC

Date:04/06/2023



Comfort. Under control.

National TAB

Project: Raymore Commerce Ctr (Raymore, MO)

System/Unit: FAN - Supply

Asset: MAU-4

AREA: WAREHOUSE

Unit Data		
	Design	Actual
MFG	NA	RUPP AIR SYSTEMS
Model Num	NA	RAM-M 36
Serial Num	-	5242784
Type	-	GAS FIRED
Configuration	-	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TECO WESTINGHOUSE
Frame	-	286T
Horsepower	-	30
Motor Rpm	-	1770
Phase	-	3
Voltage (rated)	-	230/460
Amperage (rated)	-	69.4/34.7
Service Factor	-	1.15

Drive Data		
	Design	Actual
Motor Sheave Size	-	3B5V54
Motor Bore Size	-	1-7/8"
Fan Sheave Size	-	3B5V250
Fan Sheave Bore	-	2-7/16"
Belt CL Distance	-	30-1/2"
Num of Belts	-	3
Belt Size	-	5VX-1120
Belt Alignment Verified	-	VERIFIED GOOD

Gas Heat		
	Design	Actual
Heater Operates (y/n)	-	YES
Flame Status (pass/fail)	-	PASS
Inlet Air Temp SetPt	-	55MIN
Discharge Air Temp SetPt	-	120MAX
Air Flow Switch SP Actual	-	0.47"

Test Data		
	Design	Actual
CFM	37000	35416
SF RPM	368	2339
Motor RPM	-	1771
RL Voltage	-	493/491/492
RL Amperage	-	28.7/29.2/29.7
Total ESP	-	UTO
Fan Discharge SP	-	UTO

General		
	Design	Actual
Fan Rotation Correct	-	YES

Completed By: Jacob Davidson on 04/06/2023

Notes: OCCUPIED DAMPER POSITION: 2.50VDC

Date: 04/06/2023