

Report By:

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



Report: TAB REPORT
Function: Test, Adjust, & Balance
Date: 07/31/2023

PROJECT
07-24-23 HIGHLAND PLAZA KANSAS CITY,
MO

973 N.ASH AVENUE,
KANSAS CITY , MO 64157

Client

Oliphant Heating
208 WOLLARD BLVD
RICHMOND, MO

National TAB

Project: 07-24-23 HIGHLAND PLAZA KANSAS CITY, MO

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Project Summary

The scope for TAB was to balance total supply and outside air for (4) RTU's. The airflow was measured by fully opening the outside air damper on the roof and traversing the outside air intake with a velocity grid at the filter opening. Outside air was then set to the designs on the plans. The fan speed was found to be modulating and was locked into single speed to ensure better throw and air circulation for the sales floor.

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Project: 07-24-23 HIGHLAND PLAZA KANSAS CITY, MO

System/Unit: AHU/RTU



Asset: RTU1

AREA:SALES

| Unit Data | | |
|---------------------|-------------|------------------------|
| | Design | Actual |
| MFG | LENNOX | CARRIER |
| Serial Num | - | 1023P13686 |
| Model Num | LGH120H4M3Y | 48LCD012B2 M5A0B1A0 |
| Type | RTU | RTU |
| Configuration | VERTICAL | VERTICAL |
| Num OA Filters 1 | - | 2 |
| OA Filter Size 1 | - | 22.5x25 |
| Num Final Filter 1 | - | 3 |
| Final Filter Size 1 | - | 18x24x2 |
| Num Final Filter 2 | - | 3 |
| Final Filter Size 2 | - | 18x24x2 |

| Motor Data | | |
|----------------|--------|----------|
| | Design | Actual |
| Motor MFG | - | MARATHON |
| Frame | - | 56HZ |
| Horsepower | - | NL |
| Motor Rpm | 1750 | 1750 |
| Phase | 3 | 3 |
| Rated Voltage | 208 | 230/460 |
| Rated Amperage | - | 9.2/4.6 |

| Drive Data | | |
|-------------------|--------|---------|
| | Design | Actual |
| Motor Sheave Size | - | 4 1/2" |
| Motor Bore Size | - | 1 1/8" |
| Fan Sheave Size | - | 9" |
| Fan Sheave Bore | - | 1 3/16" |
| Belt CL Distance | - | 20 1/2" |
| Num of Belts | - | 1 |
| Belt Size | - | AX56 |

| Test Data | | |
|------------------------|--------|--------|
| | Design | Actual |
| SF CFM | 4000 | 3790 |
| SF RPM | - | 730 |
| RA CFM | 3050 | 2820 |
| OA CFM | 950 | 970 |
| RL Voltage | - | 208 |
| RL Amperage | - | 4.1 |
| SF Rotation | - | CCW |
| Min OA Damper Position | - | 4.5 |

| Performance Data | | |
|------------------|--------|--------|
| | Design | Actual |
| MA Plenum SP | - | -0.29" |
| Fan Discharge SP | - | 0.37" |
| Total ESP | 0.40" | 0.66" |

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

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Project: 07-24-23 HIGHLAND PLAZA KANSAS CITY, MO

System/Unit: AHU/RTU



Asset: RTU2

AREA:SALES

| Unit Data | | |
|---------------------|-------------|------------------------|
| | Design | Actual |
| MFG | LENNOX | CARRIER |
| Serial Num | - | 1023P13683 |
| Model Num | LGH120H4M3Y | 48LCD012B2 M5A0B1A0 |
| Type | RTU | RTU |
| Configuration | VERTICAL | VERTICAL |
| Num OA Filters 1 | - | 2 |
| OA Filter Size 1 | - | 22.5x25 |
| Num Final Filter 1 | - | 3 |
| Final Filter Size 1 | - | 18x24x2 |
| Num Final Filter 2 | - | 3 |
| Final Filter Size 2 | - | 18x24x2 |

| Motor Data | | |
|----------------|--------|----------|
| | Design | Actual |
| Motor MFG | - | MARATHON |
| Frame | - | 56HZ |
| Horsepower | - | NL |
| Motor Rpm | 1750 | 1750 |
| Phase | 3 | 3 |
| Rated Voltage | 208 | 230/460 |
| Rated Amperage | - | 9.2/4.6 |

| Drive Data | | |
|-------------------|--------|---------|
| | Design | Actual |
| Motor Sheave Size | - | 4 1/2" |
| Motor Bore Size | - | 1 1/8" |
| Fan Sheave Size | - | 9" |
| Fan Sheave Bore | - | 1 3/16" |
| Belt CL Distance | - | 20 1/2" |
| Num of Belts | - | 1 |
| Belt Size | - | AX56 |
| Belt Alignment | - | |

| Test Data | | |
|------------------------|--------|--------|
| | Design | Actual |
| SF CFM | 4000 | 3800 |
| SF RPM | - | 750 |
| RA CFM | 3050 | 2826 |
| OA CFM | 950 | 974 |
| RL Voltage | - | 208 |
| RL Amperage | - | 4.3 |
| SF Rotation | - | left |
| Min OA Damper Position | - | 4.5 |

| Performance Data | | |
|------------------|--------|--------|
| | Design | Actual |
| MA Plenum SP | - | -0.32" |
| Fan Suction SP | - | 0.30" |
| Fan Discharge SP | - | 0.36" |
| Total ESP | 0.40" | 0.68" |
| Fan Total SP | - | .675 |

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

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Project: 07-24-23 HIGHLAND PLAZA KANSAS CITY, MO

System/Unit: AHU/RTU



Asset: RTU3

AREA:SALES

| Unit Data | | |
|---------------------|-------------|------------------------|
| | Design | Actual |
| MFG | LENNOX | CARRIER |
| Serial Num | - | 1023P13684 |
| Model Num | LGH120H4M3Y | 48LCD012B2 M5A0B1A0 |
| Type | RTU | RTU |
| Configuration | VERTICAL | VERTICAL |
| Num OA Filters 1 | - | 2 |
| OA Filter Size 1 | - | 22.5x25 |
| Num Final Filter 1 | - | 3 |
| Final Filter Size 1 | - | 18x24x2 |
| Num Final Filter 2 | - | 3 |
| Final Filter Size 2 | - | 18x24x2 |

| Motor Data | | |
|----------------|--------|----------|
| | Design | Actual |
| Motor MFG | - | MARATHON |
| Frame | - | 56HZ |
| Horsepower | - | NL |
| Motor Rpm | 1750 | 1750 |
| Phase | 3 | 3 |
| Rated Voltage | 208 | 230/460 |
| Rated Amperage | - | 9.2/4.6 |

| Drive Data | | |
|-------------------|--------|---------|
| | Design | Actual |
| Motor Sheave Size | - | 4 1/2" |
| Motor Bore Size | - | 1 1/8" |
| Fan Sheave Size | - | 9" |
| Fan Sheave Bore | - | 1 3/16" |
| Belt CL Distance | - | 20 1/2" |
| Num of Belts | - | 1 |
| Belt Size | - | AX56 |
| Belt Alignment | - | |

| Test Data | | |
|------------------------|--------|--------|
| | Design | Actual |
| SF CFM | 4000 | 3700 |
| SF RPM | - | 715 |
| RA CFM | 3050 | 2740 |
| OA CFM | 950 | 960 |
| RL Voltage | - | 208 |
| RL Amperage | - | 4 |
| SF Rotation | - | left |
| Min OA Damper Position | - | 4.5 |

| Performance Data | | |
|------------------|--------|--------|
| | Design | Actual |
| MA Plenum SP | - | -0.31" |
| Fan Suction SP | - | 0.30" |
| Fan Discharge SP | - | 0.38" |
| Total ESP | 0.20" | 0.69" |
| Fan Total SP | - | .68 |

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

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Project: 07-24-23 HIGHLAND PLAZA KANSAS CITY, MO

System/Unit: AHU/RTU



Asset: RTU4

AREA:SALES

| Unit Data | | |
|---------------------|-------------|------------------------|
| | Design | Actual |
| MFG | LENNOX | CARRIER |
| Serial Num | - | 1023P13685 |
| Model Num | LGH120H4M3Y | 48LCD012B2 M5A0B1A0 |
| Type | RTU | RTU |
| Configuration | VERTICAL | VERTICAL |
| Num OA Filters 1 | - | 2 |
| OA Filter Size 1 | - | 22.5x25 |
| Num Final Filter 1 | - | 3 |
| Final Filter Size 1 | - | 18x24x2 |
| Num Final Filter 2 | - | 3 |
| Final Filter Size 2 | - | 18x24x2 |

| Motor Data | | |
|----------------|--------|----------|
| | Design | Actual |
| Motor MFG | - | MARATHON |
| Frame | - | 56HZ |
| Horsepower | - | NL |
| Motor Rpm | 1750 | 1750 |
| Phase | 3 | 3 |
| Rated Voltage | 208 | 230/460 |
| Rated Amperage | - | 9.2/4.6 |

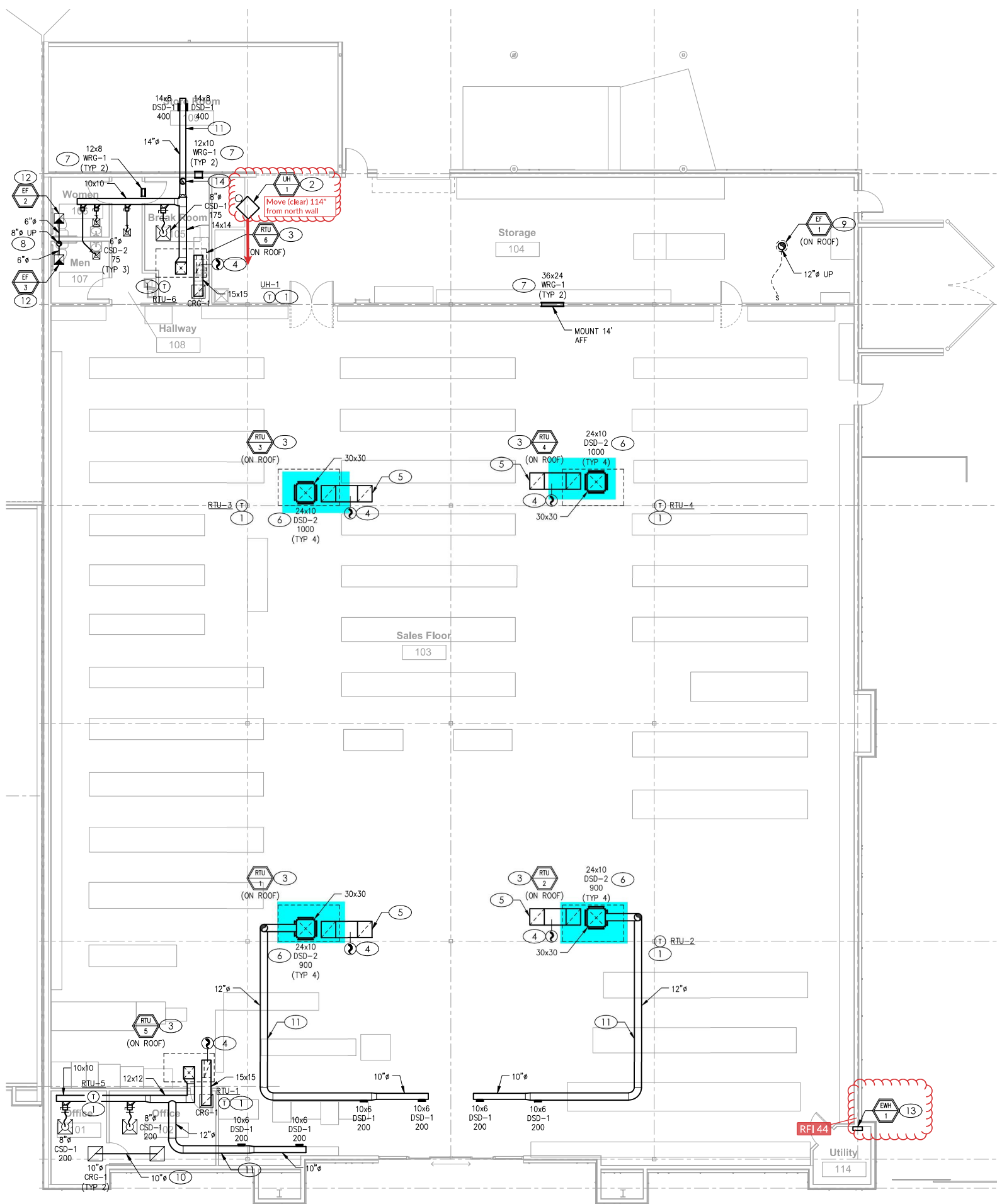
| Drive Data | | |
|-------------------|--------|---------|
| | Design | Actual |
| Motor Sheave Size | - | 4 1/2" |
| Motor Bore Size | - | 1 1/8" |
| Fan Sheave Size | - | 9" |
| Fan Sheave Bore | - | 1 3/16" |
| Belt CL Distance | - | 20 1/2" |
| Num of Belts | - | 1 |
| Belt Size | - | AX56 |
| Belt Alignment | - | |

| Test Data | | |
|------------------------|--------|--------|
| | Design | Actual |
| SF CFM | 4000 | 3750 |
| SF RPM | 1750 | 708 |
| RA CFM | 3050 | 2785 |
| OA CFM | 950 | 965 |
| RL Voltage | - | 208 |
| RL Amperage | - | 4.4 |
| SF Rotation | - | Left |
| Min OA Damper Position | - | 4.5 |

| Performance Data | | |
|------------------|--------|--------|
| | Design | Actual |
| MA Plenum SP | - | -0.30" |
| Fan Suction SP | - | 0.29" |
| Fan Discharge SP | - | 0.37" |
| Total ESP | 0.20" | 0.67" |
| Fan Total SP | - | .664 |

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

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MECHANICAL PLAN
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Date: 8/4/2023

