

Report By:

National TAB
1329 E. KEMPER ROAD
SUITE 4210
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Report: TAB REPORT
Function: Test, Adjust, & Balance
Date: 03/18/2024

PROJECT

**01-08-23 CARMAX #7290 -
CHARLOTTESVILLE, VA**

1448 RICHMOND RD

CHARLOTTESVILLE,, VA

Client

Comfort Systems USA - Houston
9450 W Wingfoot Rd
Houston, TX 77041

Project Summary

The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report is further detail about your building performance including recommendations, asset data, and pictures. Our focus is to work with the trades to remedy any issues or deficiencies during the actual field balancing and not after the balancing has occurred to achieve a positive environment and outcome. The level of success is determined by the availability of the trades, possible parts needed, or time constraints.

Facility Identification and TAB Requirements

The mechanical equipment to be tested, adjusted, and balanced includes all RTU's and EF's on the Test and Balance Scope on the mechanical drawings.

Standard RTU's

Each of the RTU's were measured at their terminal devices utilizing a flow hood or via total traverse. The sum of these readings is equal to the total flow for that unit. The total flow of each RTU was then adjusted to within tolerance of the specified design. Outside airflow was measured by reading the inlet with a velocity grid times the area of the filter. Any equipment that fell outside of this tolerance is noted throughout the report.

Bypass RTU's

The Bypass RTU's were measured by first closing the bypass damper completely. By doing this, the outside airflow is equal to the total flow for the unit. The airflow was measured using a velgrid at the outdoor air intake and multiplying by the free area of the filters. Adjustments were made to the motor sheave to get airflow within tolerance of design. The bypass damper was then adjusted so that bypass and OA flows are within tolerance.

Exhaust Fans

The exhaust fans were measured by reading each air device with a flow hood or via a velgrid reading times the free area of the inlets. The total airflow for each fan is equivalent to the sum of these readings. Fan speed was then adjusted so that the airflow was within tolerance of design. Any equipment that fell outside of this tolerance is noted throughout the report.

Issue List

- EF-10 Low Flow
- RESOLVED// RTU-8 Motor Sheave Seized
- RESOLVED//RTU8-SGRD1 Low Flow



01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA

Project Issue Information

Issue Name : EF-10 Low Flow
Description : Fan is running at 86% of design. Motor sheave is 1 Turn Out.
Created By : National TAB **Assigned To :** National TAB - Antonio Flores-De La Cruz
Status : Closed
Priority : **Asset Tag :**
Originated Date : 10/05/2023 - Antonio Flores-De La Cruz - National TAB

Project Issue File Details



EF10
10/05/2023



EF10PULLEYS
10/05/2023

Project Issue Response Details

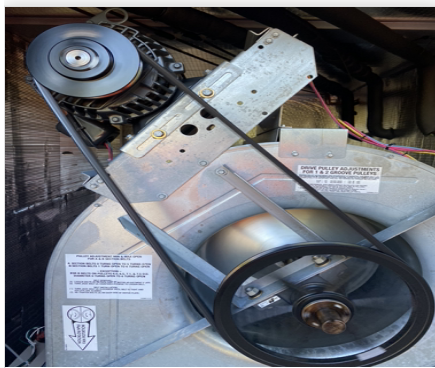
- **10/05/2023 National TAB - Stephen Tassinaro**
 - Discussed with Comfort Systems & Engineering team. It was determined it is best to leave this fan as-is at this time.

01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA

Project Issue Information

Issue Name : RESOLVED// RTU-8 Motor Sheave Seized
Description : Unit is operating 11% above design (111%). Motor sheave is seized and unable to adjust. Recommended to loosen or replace, and reduce fan speed by 10%. Unit is operating below FLA. Outside air set proportionally high to accommodate. Design OA: 5000CFM / Actual: 5556CFM
Created By : National TAB **Assigned To :** National TAB - Antonio Flores-De La Cruz
Status : Closed
Priority : **Urgent** **Asset Tag :**
Originated Date : 10/05/2023 - Antonio Flores-De La Cruz - National TAB

Project Issue File Details



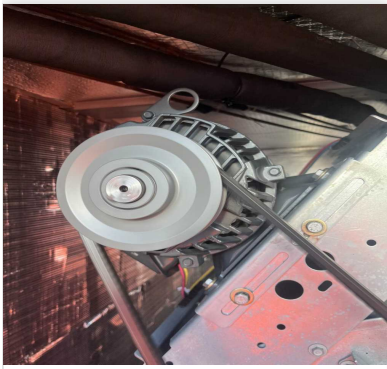
RTU8PULLEY
10/05/2023



RTU8MOTORSHEAVE
10/05/2023

Project Issue Response Details

- **03/13/2024 National TAB - Tyler Youells**
 - Sheave was swapped and unit was adjusted



IMG_5888
03/13/2024



01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA

Project Issue Information

Issue Name : RESOLVED//RTU8-SGRD1 Low Flow
Description : SGRD8-1 is unable to be set to design. After the ductwork was checked, flex duct position was adjusted and small openings were patched and only 50 CFM was added to finish at 111 CFM. Damper is 100% open as well. Dampers in Garage area were attempted to close, but rust did not allow for them to work properly. SGRD8-1 is located in a Storage/Data room

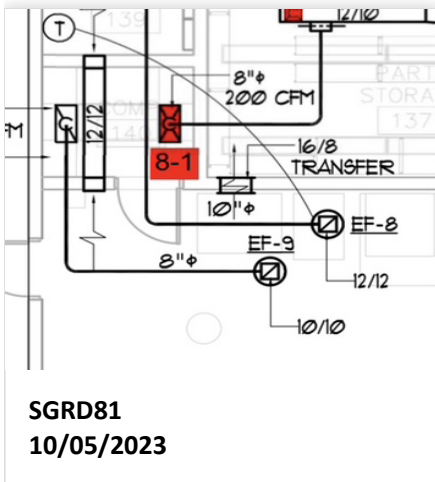
Created By : National TAB **Assigned To :** National TAB - Antonio Flores-De La Cruz

Status : Closed

Priority : Urgent **Asset Tag :**

Originated Date : 10/05/2023 - Antonio Flores-De La Cruz - National TAB

Project Issue File Details



SGRD8-1-DUCT
10/05/2023

Project Issue Response Details

- **03/13/2024 National TAB - Tyler Youells**
 - Supply grilles in the garage were adjusted after being replaced and all air devices are in design.

CheckList List

- TECH - SITE PICTURES
- TECH - STEP 1: INITIAL SITE WALKTHROUGH
- TECH - STEP 2: UNIT DATA AND EVAL
- TECH - STEP 3: TEST, ADJUST AND BALANCE



01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA

CheckList Information

Name : TECH - SITE PICTURES **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/02/2023 - Brian Turnbough - National TAB

Completed Date : 10/05/2023 - Antonio Flores-De La Cruz - National TAB

CheckList Item Details

STORE FRONT

Comment:



STOREFRONT
10/05/2023

RTU-1

Comment:



RTU1
10/05/2023

RTU-2

Comment:



RTU2(1)
10/05/2023

RTU-3

Comment:



RTU_3
10/05/2023

RTU-4

Comment:



RTU4
10/05/2023

RTU-5

Comment:



RTU_5
10/05/2023

RTU-6

Comment:



RTU6
10/05/2023

RTU-7

Comment:



RTU7
10/05/2023

RTU-8

Comment:



RTU8
10/05/2023

EF-7

Comment:



EF-7
10/05/2023

EF-8

Comment:



EF8
10/05/2023

EF-9

Comment:



EF9(1)
10/05/2023

EF-10

Comment:



EF10
10/05/2023

EF-11

Comment:



EF11
10/05/2023



01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA

CheckList Information

Name : TECH - STEP 1: INITIAL SITE WALKTHROUGH **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/02/2023 - Brian Turnbough - National TAB

Completed Date : 10/05/2023 - Antonio Flores-De La Cruz - National TAB

CheckList Item Details

INITIAL SITE WALKTHROUGH

All diffusers and grilles are installed and match design? Yes

Comment:

All hood filters installed and accounted for? N/A

Comment:

Hoods are wired and have power? N/A

Comment:

Hood is free of alarms? N/A

Comment:

Thermostats have power? Yes

Comment:

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

Comment:

Yes



01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA

CheckList Information

Name : TECH - STEP 2: UNIT DATA AND EVAL **Status :** Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 10/02/2023 - Brian Turnbough - National TAB
Completed Date : 10/05/2023 - Antonio Flores-De La Cruz - 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

Comment:

DCV Max damper opening position is set to minimum? Yes

Comment:

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

Comment:

Motors are all operating below the FLA rating? Yes

Comment:

Are belts tight?

Comment:

Yes

If direct drive unit is the speed controller working.

Comment:

Yes

Is gas piping installed and valves turned on?

Yes

Comment:

Unit free of noticeable noise and vibration

Yes

Comment:

EF's

Rotation is correct?

Yes

Comment:

Belts are tight?

Comment:

Yes

Grease cup installed on hood fan?

N/A

Comment:

Hinge kit installed installed on hood fan?

N/A

Comment:

Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?

N/A

Comment:

Flex conduit is long enough so that fan can be completely tilted back?

N/A

Comment:

There is no major leakage around base of fan?

Yes

Comment:

Is the motor operating below the motor FLA rating?

Yes

Comment:

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

N/A

Comment:

Unit free of noticeable noise and vibration?

Yes

Comment:

MUA

Rotation is correct?

N/A

Comment:

Gas piping is installed and valves are in on position?

N/A

Comment:

Heater tested and is functional?

N/A

Comment:

Internal motorized damper is fully opening?

N/A

Comment:

Motor is operating below the FLA rating?

N/A

Comment:

Unit free of noticeable noise and vibration?

N/A

Comment:

HOODS

Kitchen equipment installed in proper places?

N/A

Comment:

Can kitchen equipment be turned on for final smoke test?

N/A

Comment:

DOCUMENTATION

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

Comment:



01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA

CheckList Information

Name : TECH - STEP 3: TEST, ADJUST AND BALANCE **Status :** Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 10/02/2023 - Brian Turnbough - National TAB
Completed Date : 10/04/2023 - Antonio Flores-De La Cruz - National TAB

CheckList Item Details

TEST, ADJUST, AND BALANCE ALL EQUIPMENT:

DURING TESTING MAKE NOTE OF THE FOLLOWING:

Is space free of drafting? Yes

Comment:

Is space comfortable in all areas? Yes

Comment:

Is the space free of ventilation noise? Yes

Comment:

If deviations from design were necessary to resolve 1-3 what were they? Otherwise put "NA".

Comment:

N/A

National TAB

Project: 01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA

System/Unit: AHU/RTU



Asset: RTU1

AREA:SHOWROOM

Unit Data		
	Design	Actual
MFG	LENNOX	LENNOX
Serial Num	-	5622G09759
Model Num	LGH300H4B	LGH120H4M
Type	RTU	RTU
Configuration	Vertical	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	14.125x23.125
Num Final Filter 1	-	4
Final Filter Size 1	-	20x25x2

Motor Data		
	Design	Actual
Motor MFG	-	US MOTORS
Frame	-	184TZ
Horsepower	3	3
Motor Rpm	1765	1765
Phase	3	3
Rated Voltage	480	460
Rated Amperage	7.3	7.3

Drive Data		
	Design	Actual
Motor Sheave Size	-	5"
Motor Bore Size	-	1.125"
Motor Sheave SetPt	-	2 TURNS OPEN
Fan Sheave Size	-	7.5"
Fan Sheave Bore	-	0.875"
Belt CL Distance	-	21.5"
Num of Belts	-	1
Belt Size	-	BX59
Belt Alignment	-	CORRECT

Test Data		
	Design	Actual
SF CFM	4500	4573
SF RPM	-	1006
RA CFM	3950	4006
OA CFM	550	567
RL Voltage	-	488/488/490
RL Amperage	-	4.7/4.7/4.9
SF Rotation	-	CCW
RA Damper Position	-	72%
Min OA Damper Position	-	28%
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	1 mA

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.64"
Fan Suction SP	-	-1.09"
Fan Discharge SP	-	1.18"
Total ESP	0.8"	1.82"
Fan Total SP	-	2.27"

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

Completed By: Antonio Flores-De La Cruz on 10/02/2023

National TAB

Project: 01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA

System/Unit: AHU/RTU



Asset: RTU2

AREA:SHOWROOM

Unit Data		
	Design	Actual
MFG	LENNOX	LENNOX
Serial Num	-	5623H02562
Model Num	LGH300H4B	LGT120H4E
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	14.125x23.125
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	Actual
Motor MFG	-	EBMPAPST
Frame	-	NL
Horsepower	3.0	3.0
Motor Rpm	-	2240
Phase	3	3
Rated Voltage	480	480
Rated Amperage	7.5	7.5

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

Test Data		
	Design	Actual
SF CFM	4500	4338
RA CFM	3950	3776
OA CFM	550	562
RL Voltage	-	488/488/486
RL Amperage	-	2.6/2.6/2.7
SF Rotation	-	CCW
RA Damper Position	-	76%
Min OA Damper Position	-	24%
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	1 mA

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.57"
Fan Suction SP	-	-0.99"
Fan Discharge SP	-	0.50"
Total ESP	0.8"	1.07"
Fan Total SP	-	1.49"

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

Completed By: Antonio Flores-De La Cruz on 10/03/2023

National TAB

Project: 01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA

System/Unit: AHU/RTU



Asset: RTU3

AREA:BUYERS

Unit Data		
	Design	Actual
MFG	LENNOX	LENNOX
Serial Num	-	5622G11299
Model Num	LGH300H4B	LGH036H4E
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	29.125X14.5
Num Final Filter 1	-	4
Final Filter Size 1	-	16X20X2

Motor Data		
	Design	Actual
Motor MFG	-	GENTEQ
Frame	-	NA
Horsepower	0.5	0.5
Motor Rpm	-	NA
Phase	1	1
Rated Voltage	115	115
Rated Amperage	-	2.2

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

Test Data		
	Design	Actual
SF CFM	1051	1096
RA CFM	951	988
OA CFM	100	108
RL Voltage	-	488
RL Amperage	-	0.8
SF Rotation	-	CW
RA Damper Position	-	80%
Min OA Damper Position	-	20%
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	1 mA

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.10"
Fan Suction SP	-	-0.20"
Fan Discharge SP	-	0.21"
Total ESP	0.6"	0.31"
Fan Total SP	-	0.41"

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

Completed By: Antonio Flores-De La Cruz on 10/03/2023

National TAB

Project: 01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA



System/Unit: AHU/RTU

Asset: RTU4

AREA:BUSINESS

Unit Data		
	Design	Actual
MFG	LENNOX	LENNOX
Serial Num	-	5622H01320
Model Num	LGH300H4B	LGH036H4E
Type	RTU	RTU
Configuration	Vertical	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	29.125X14.5
Num Final Filter 1	-	4
Final Filter Size 1	-	16X20X2

Motor Data		
	Design	Actual
Motor MFG	-	GENTEQ
Frame	-	NA
Horsepower	0.5	0.5
Motor Rpm	-	NA
Phase	1	1
Rated Voltage	115	115
Rated Amperage	-	2.2

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

Test Data		
	Design	Actual
SF CFM	1100	1135
RA CFM	1000	1036
OA CFM	100	99
RL Voltage	-	493
RL Amperage	-	0.8
SF Rotation	-	CW
RA Damper Position	-	77%
Min OA Damper Position	-	23%
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	1 mA

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.09"
Fan Suction SP	-	-0.20"
Fan Discharge SP	-	0.23"
Total ESP	0.6"	0.32"
Fan Total SP	-	0.43"

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

Completed By: Antonio Flores-De La Cruz on 10/03/2023

National TAB

Project: 01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA



System/Unit: AHU/RTU

Asset: RTU5

AREA: CUSTOMER LOUNGE

Unit Data		
	Design	Actual
MFG	LENNOX	LENNOX
Serial Num	-	5622G11304
Model Num	LGH300H4B	LGH036H4E
Type	RTU	RTU
Configuration	Vertical	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	29.125X14.5
Num Final Filter 1	-	4
Final Filter Size 1	-	16X20X2

Motor Data		
	Design	Actual
Motor MFG	-	GENTEQ
Frame	-	NA
Horsepower	0.5	0.5
Motor Rpm	-	NA
Phase	1	1
Rated Voltage	115	115
Rated Amperage	-	2.2

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

Test Data		
	Design	Actual
SF CFM	1100	1181
RA CFM	980	1058
OA CFM	120	123
RL Voltage	-	493
RL Amperage	-	0.8
SF Rotation	-	CCW
RA Damper Position	-	87%
Min OA Damper Position	-	13%
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	1 mA

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.11"
Fan Suction SP	-	-0.22"
Fan Discharge SP	-	0.33"
Total ESP	0.6"	0.44"
Fan Total SP	-	0.55"

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

Completed By: Antonio Flores-De La Cruz on 10/02/2023

National TAB

Project: 01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA



System/Unit: AHU/RTU

Asset: RTU6

AREA:PBX

Unit Data		
	Design	Actual
MFG	LENNOX	LENNOX
Serial Num	-	5622G10922
Model Num	LGH300H4B	LGH036H4E
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num Final Filter 1	-	4
Final Filter Size 1	-	16X20X2

Motor Data		
	Design	Actual
Motor MFG	-	GENTEQ
Frame	-	NA
Horsepower	0.5	0.5
Motor Rpm	-	NA
Phase	1	1
Rated Voltage	115	115
Rated Amperage	-	2.2

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

Test Data		
	Design	Actual
SF CFM	960	920
RA CFM	960	920
OA CFM	-	0
RL Voltage	-	488
RL Amperage	-	2.1
SF Rotation	-	CW
RA Damper Position	-	100%
Min OA Damper Position	-	0%
Min OA Damper Type	-	NONE
OA Enthalpy Setpt	-	NA

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.19"
Fan Suction SP	-	-0.28"
Fan Discharge SP	-	0.57"
Total ESP	0.6"	0.76"
Fan Total SP	-	0.85"

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

Completed By: Antonio Flores-De La Cruz on 10/03/2023

Notes:
NO OA HOOD INSTALLED

Written By: Antonio Flores-De La Cruz on 10/03/2023

National TAB

Project: 01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA



System/Unit: AHU/RTU

Asset: RTU7

AREA: BREAK/CONFERENCE ROOM

Unit Data		
	Design	Actual
MFG	LENNOX	LENNOX
Serial Num	-	5622G09684
Model Num	LGH300H4B	LGH048H4E
Type	RTU	RTU
Configuration	Vertical	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	29.125X14.5
Num Final Filter 1	-	4
Final Filter Size 1	-	16X20X2

Motor Data		
	Design	Actual
Motor MFG	-	GENTEQ
Frame	-	NA
Horsepower	0.75	0.75
Motor Rpm	-	NA
Phase	1	1
Rated Voltage	115	115
Rated Amperage	-	2.2

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

Test Data		
	Design	Actual
SF CFM	1200	1279
RA CFM	940	1028
OA CFM	260	251
RL Voltage	-	490
RL Amperage	-	1.7
SF Rotation	-	CW
RA Damper Position	-	79%
Min OA Damper Position	-	21%
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	1 mA

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.34"
Fan Suction SP	-	-0.52"
Fan Discharge SP	-	0.38"
Total ESP	0.6"	0.72"
Fan Total SP	-	0.90"

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

Completed By: Antonio Flores-De La Cruz on 10/03/2023

National TAB

Project: 01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA



System/Unit: AHU/RTU

Asset: RTU8

AREA:SERVICE AREA (BP)

Unit Data		
	Design	Actual
MFG	LENNOX	LENNOX
Serial Num	-	5622H03183
Model Num	LGH300H4B	LGH300H4B
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	38.125X11.875
Num Final Filter 1	-	12
Final Filter Size 1	-	20X20X2

Motor Data		
	Design	Actual
Motor MFG	-	US MOTORS
Frame	-	184TZ
Horsepower	5.0	5.0
Motor Rpm	1765	1765
Phase	3	3
Rated Voltage	480	460
Rated Amperage	7.3	7.3

Drive Data		
	Design	Actual
Motor Sheave Size	-	1VP56BB
Motor Bore Size	-	1.125"
Motor Sheave SetPt	-	4.5 TURNS OUT
Fan Sheave Size	-	BK120H
Fan Sheave Bore	-	1.187"
Belt CL Distance	-	23.5"
Num of Belts	-	1
Belt Size	-	BK71
Belt Alignment	-	CORRECT

Test Data		
	Design	Actual
SF CFM	7000	7215
SF RPM	-	706
RA CFM	2000	2095
OA CFM	5000	5120
RL Voltage	-	495/493/493
RL Amperage	-	5.56/5.45/5.46
SF Rotation	-	CCW
RA Damper Position	-	75%
Min OA Damper Position	-	100%
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	1 mA

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.29"
Fan Suction SP	-	-0.63"
Fan Discharge SP	-	0.40"
Total ESP	0.8"	0.69"
Fan Total SP	-	1.03"

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

Completed By: Tyler Youells on 03/08/2024

Notes:
MOTOR SHEAVED CHANGED (INITIALLY SEIZED)

Written By: Will Turnbough on 03/18/2024

National TAB

Project:01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA

AHU/RTU



Diffuser Supply (GRD)

RTU8/SERVICE AREA (BP)

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
RTU8-SGRD1	COMPUTER	12/10	8"	200	1	56	105	192	96.0
RTU8-SGRD2	PARTS STORAGE	12/10 NK		200	0.75	200	204	198	99.0
RTU8-SGRD3	PARTS STORAGE	12/10 NK		200	0.75	200	207	214	107.0
RTU8-SGRD4	SERVICE AREA	24/14 NK		725	2.1	864	826	786	108.4
RTU8-SGRD5	SERVICE AREA	24/14 NK		725	2.1	834	826	723	99.7
RTU8-SGRD6	SERVICE AREA	24/14 NK		725	2.1	834	826	749	103.3
RTU8-SGRD7	SERVICE AREA	24/14 NK		725	2.1	834	826	733	101.1
RTU8-SGRD8	SERVICE AREA	24/14 NK		725	2.1	834	826	722	99.6
RTU8-SGRD9	SERVICE AREA	24/14 NK		725	2.1	834	826	754	104.0
RTU8-SGRD10	TOILET		6"	50	2.1	37	54	49	98.0
Total				5000		5527	5526	5120	102.4%

National TAB

Project: 01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA

System/Unit: FAN - Exhaust



Asset: EF7

AREA:

Unit Data		
	Design	Actual
MFG	GREENHECK	GREENHECK
Model Num	G-080-D-X	SP-A110-QD
Serial Num	-	10617996
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	MCMILLAN
Frame	-	NA
Horsepower	-	NA
Motor Rpm	-	NA
Phase	-	1
Voltage (rated)	115	115
Amperage (rated)	-	NA
Service Factor	-	1

Test Data		
	Design	Actual
CFM	110	104
Fan RPM	DD	DD
Fan Rotation	-	CCW
Motor RPM	-	DD
System SetPt	-	DIAL
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	0.08"
Fan Inlet SP	-	-0.08"
Fan Discharge SP	-	ATM

Completed By: Antonio Flores-De La Cruz on 10/04/2023

National TAB

Project: 01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA

System/Unit: FAN - Exhaust



Asset: EF8

AREA:

Unit Data		
	Design	Actual
MFG	GREENHECK	GREENHECK
Model Num	G-080-D-X	G-080-D-X
Serial Num	-	106044990610
Type	DOWNBLAST	DOWNBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	MCMILLAN
Frame	-	NL
Horsepower	0.07	0.07
Motor Rpm	1550	1550
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	1.2
Service Factor	-	1

Test Data		
	Design	Actual
CFM	300	323
Fan RPM	-	DD
Fan Rotation	-	CW
Motor RPM	-	DD
System SetPt	-	MED SPEED
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	0.13"
Fan Inlet SP	-	-0.13"
Fan Discharge SP	-	ATM

Completed By: Antonio Flores-De La Cruz on 10/04/2023

National TAB

Project: 01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA

System/Unit: FAN - Exhaust



Asset: EF9

AREA:

Unit Data		
	Design	Actual
MFG	GREENHECK	GREENHECK
Model Num	G-080-D-X	G-080-D-X
Serial Num	-	106044980610
Type	DOWNBLAST	DOWNBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	MCMILLAN
Frame	-	NL
Horsepower	0.07	0.07
Motor Rpm	1550	1550
Phase	1	1
Voltage (rated)	1.2	115
Amperage (rated)	-	1.2
Service Factor	-	1

Test Data		
	Design	Actual
CFM	200	211
Fan RPM	DD	DD
Fan Rotation	-	CW
Motor RPM	-	DD
System SetPt	-	LOW SPEED
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	0.11"
Fan Inlet SP	-	-0.11"
Fan Discharge SP	-	ATM

Completed By: Antonio Flores-De La Cruz on 10/04/2023

National TAB

Project: 01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA

System/Unit: FAN - Exhaust



Asset: EF10

AREA:

Unit Data		
	Design	Actual
MFG	GREENHECK	GREENHECK
Model Num	SWB-212-20-CW-UB-X	SWB-212-20-CW-UB-X
Serial Num	-	06J04140
Type	UTILITY	UTILITY
Configuration	VERTICAL	VERTICAL

Test Data		
	Design	Actual
CFM	1800	1545
Fan RPM	-	3245
Fan Rotation	-	CW
Motor RPM	-	1770
RL Voltage	-	488/488/486
RL Amperage	-	2.5/2.5/2.6
Suction ESP	-	-4.08"
Discharge ESP	-	ATM
Total ESP	-	4.08"

Motor Data		
	Design	Actual
Motor MFG	-	BALDOR
Frame	-	56H
Horsepower	2	2
Motor Rpm	1750	1750
Phase	3	3
Voltage (rated)	208	460
Amperage (rated)	-	5.9
Service Factor	-	1.15

Drive Data		
	Design	Actual
Motor Sheave Size	-	VP56
Motor Bore Size	-	0.6875"
Motor Sheave SetPt	-	1 TURN OPEN
Fan Sheave Size	-	3"
Fan Sheave Bore	-	1"
Belt CL Distance	-	8.5"
Num of Belts	-	1
Belt Size	-	AX28

Completed By: Antonio Flores-De La Cruz on 10/05/2023

Notes:

[1] FAN PERFORMING AT 85.8% OF DESIGN. DISCUSSED WITH ENGINEERING TEAM; AIRFLOW DETERMINED TO BE SUFFICIENT AND LEFT FAN AT THIS SETPOINT BASED ON STATIC PRESSURE.

Written By: Michael McDonnell on 11/02/2023

National TAB

Project: 01-08-23 CARMAX #7290 - CHARLOTTESVILLE, VA

System/Unit: FAN - Exhaust



Asset: EF11

AREA:

Unit Data		
	Design	Actual
MFG	GREENHECK	GREENHECK
Model Num	SWB-212-20-CW-UB-X	CUBE-161-5-X
Serial Num	-	106045010610
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Test Data		
	Design	Actual
CFM	2500	2548
Fan RPM	-	1056
Fan Rotation	-	CCW
Motor RPM	-	1727
RL Voltage	-	120
RL Amperage	-	NA
Suction ESP	-	-0.28"
Discharge ESP	-	ATM
Total ESP	-	0.28"

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	48Z
Horsepower	0.5	0.5
Motor Rpm	1725	1725
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	7.2
Service Factor	-	1.25

Drive Data		
	Design	Actual
Motor Sheave Size	-	VP34S
Motor Bore Size	-	0.56"
Motor Sheave SetPt	-	1 TURN OPEN
Fan Sheave Size	-	AK5134
Fan Sheave Bore	-	0.75"
Belt CL Distance	-	5.5"
Num of Belts	-	1
Belt Size	-	AX21

Completed By: Antonio Flores-De La Cruz on 10/03/2023

