

FOR QUESTIONS, CALL THE
 FLO AIRE NATIONAL
 REGION 22
 PHONE: (610) 239-8405
 EMAIL: courtney.hardin@floaire.com

MUA FAN INFORMATION - JOB#5929686

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	MCA	MDCP	WEIGHT (LBS)	SONES
1	3500/4000CFM	1	F2-D.500-20D	20MF-2-MDD	A2-D.500	2000	3500	0.500	1365	DDP,PREMIUM	3.000	1.4750	3	208	9.5	14.1A	20A	694	11.9

GAS FIRED MAKE-UP AIR UNIT(S)

FAN UNIT NO	TAG	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE	BURNER EFFICIENCY(%)
1	3500/4000CFM	345468	317831	85°F	7 IN. W.C. - 14 IN. W.C.	NATURAL	92

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	3500/4000CFM	1	SIZE 2 TEMPERED COMMERCIAL DOWN DISCHARGE FOR DIRECT DRIVE AHUS
		1	INLET PRESSURE GAUGE, 0-35"
		1	MANIFOLD PRESSURE GAUGE, -5 TO 15" WC
		1	BUTTERFLY MOD VALVE OPTION FOR MOD SIZE 2 (1" MOD VALVE)
		1	SHIP LOOSE GAS STRAINER 1"
		1	MOTORIZED BACKDRAFT DAMPER FOR A2-D HOUSING - MEETS AMCA CLASS 1A RATING
		1	LOW FIRE START
		1	FREEZESTAT (10)
		1	VAV PACKAGE W/ MANUAL/DDC CONTROL (571 VFD INCLUDED)
		1	VFD FACTORY MOUNTED AND WIRED IN COMMERCIAL CONTROL VESTIBULE FOR TEMPERED SUPPLY FAN
		1	SIZE 2 DIRECT FIRED HEATER LOW CFM PROFILE PACKAGE - USED ON HEATERS UNDER 2500 CFM
		1	CONTROL PANEL ENCLOSURE HEATER - RECOMMENDED FOR WINTER DESIGN TEMPERATURES LESS THAN 0°F
		1	CONVENIENCE OUTLET (GFCI), 15 AMP - REQUIRES SEPARATE 120V CONNECTION - INCLUDES RECEPTACLE AND J-BOX
1	2 YEAR PARTS WARRANTY		

FAN ACCESSORIES

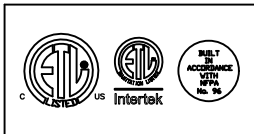
FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	3500/4000CFM						YES	

CURB ASSEMBLIES

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	3500/4000CFM	76 LBS	CURB	31.000"W X 79.000"L X 16.000"H ALONG WIDTH, RIGHT INSULATED.

FAN SOUND DATA

FAN UNIT NO	TAG	MOTOR	SOUND DATA			OCTAVE BAND SOUND DATA								
			LWA	SONES @ 5 FT	DBA @ 5 FT	DISTANCE (FT)	63 HZ	125 HZ	250 HZ	500 HZ	1 KHZ	2 KHZ	4 KHZ	8 KHZ
1	3500/4000CFM	SUPPLY	75.2	11.8932679873971	63.7	5	71	78.7	73.6	73.1	69.4	66.7	63.7	60.3



FloAire

JOB 3500/4000cfm**Heater Stock	
LOCATION Southborough, MA,	
DATE 4/3/2023	JOB # 5929686
DWG # 1	DRAWN BY courtneyh
REV.	SCALE 3/8" = 1'-0"

- FAN #1 F2-3500-200 - HEATER (3500/4000CFM)
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 20" MIXED FLOW DIRECT DRIVE FAN.
 2. INTAKE HOOD WITH E2 FILTERS.
 3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT.
 4. DOWN DISCHARGE CONSTRUCTION FOR SIZE E DIRECT DRIVE AHUS.
 5. GAS PRESSURE GAUGE, 0-30", 2 1/2" DIAMETER, 1/4" THREAD SIZE.
 6. GAS PRESSURE GAUGE, -5 TO +15 INCHES WG, 2 1/2" DIAMETER, 1/4" THREAD SIZE.
 7. BUTTERFLY HOOD VALVE OPTION FOR HOOD SIZE E (1" HOOD VALVE).
 8. SHIP LOOSE GAS STRAINER, TO BE INSTALLED UPSTREAM OF UNIT CONNECTION, 1" CONNECTION.
 9. MOTORIZED BACK DRAFT DAMPER 22 7/8" X 24" FOR SIZE E STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, LF200S ACTUATOR INCLUDED.
 10. LOW FIRE START, ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
 11. FREEZE STAT WITH 10" SENSOR, FACTORY SET AT 33°F AND 10 MINUTES.
 12. VAV (VARIABLE-AIR-VOLVED) WIRING PACKAGE FOR COMMERCIAL FANS.
 13. MANUAL SPEED CONTROL, VARIABLE FREQUENCY DRIVE, INCLUDED.
 14. VFD FACTORY MOUNTED AND WIRED IN UNIT CONTROL VESTIBULE.
 15. PROFILE PLATE CONFIGURATION FOR SIZE E DIRECT FIRED UNIT FOR LOW CFM APPLICATIONS.
 16. CONTROL PANEL ENCLASURE HEATER, INCLUDES 100V, 120V HEATER, RECOMMENDED FOR WINTER DESIGN TEMPERATURE LESS THAN 0°F, OPERATES ON PCB CONTROLS IN 1BT SINGLE MODULES OR RTU.
 17. GFCI IS AMP CONVENIENCE OUTLET FOR HEATER ENCLOSURE, POWER SUPPLY BY OTHERS - INCLUDES RECEPTACLE AND J BOX.
 18. HINGED DOUBLE WALL INSULATED DODD ASSEMBLY (BURNER/BLOWER SECTION).
 19. 2 YEAR PARTS WARRANTY.

NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN ANCA PUBLICATION 200. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 20" X 20".

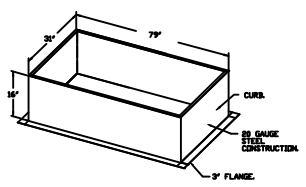
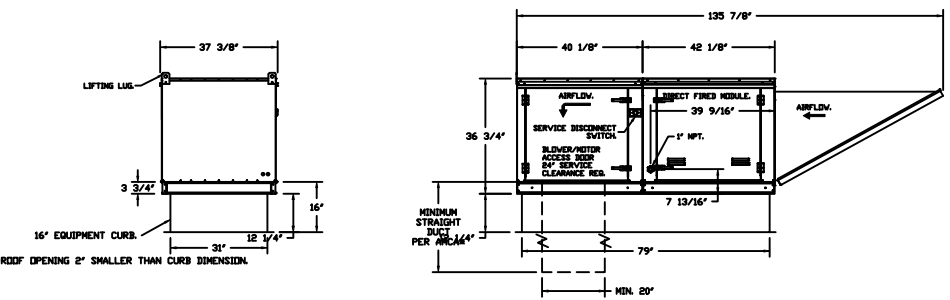
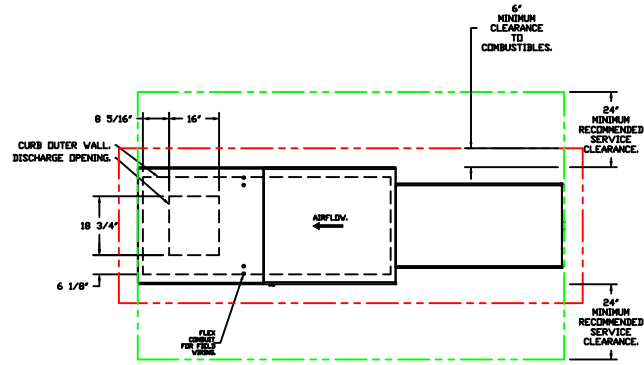
SUPPLY SIDE HEATER INFORMATION

WINTER TEMPERATURE = -10°F, TEMP. RISE = 65°F.
 BTUH CALCULATED OFF ACTUAL AIR DENSITY.
 OUTPUT BTUH AT ALTITUDE OF 0.0 FT. = 31783L
 INPUT BTUH AT ALTITUDE OF 0.0 FT. = 34546R.



DIRECT FIRED GAS BURNER PLATE ASSEMBLY

WARNING: READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY, OR DEATH. ALWAYS USE COMMON SENSE AND SAFETY PRECAUTIONS. ALWAYS USE PROPER TOOLS AND TECHNIQUES. ALWAYS WEAR PROPER PROTECTIVE CLOTHING. ALWAYS FOLLOW LOCAL, STATE, AND FEDERAL REGULATIONS. ALWAYS FOLLOW THE MANUFACTURER'S INSTRUCTIONS. ALWAYS FOLLOW THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 704 HAZARD RATING SYSTEM. ALWAYS FOLLOW THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE ALARMS CODE (NFPA 72). ALWAYS FOLLOW THE INTERNATIONAL ELECTRIC CODE (IEC) AND THE INTERNATIONAL FIRE CODE (IFC). ALWAYS FOLLOW THE INTERNATIONAL MECHANICAL ELECTRICAL PLUMBING AND HEATING CODE (IMHPEC) AND THE INTERNATIONAL PLUMBING AND HEATING CODE (IPHC). ALWAYS FOLLOW THE INTERNATIONAL MECHANICAL AND ELECTRICAL PLUMBING AND HEATING CODE (IMHPEC) AND THE INTERNATIONAL PLUMBING AND HEATING CODE (IPHC). ALWAYS FOLLOW THE INTERNATIONAL MECHANICAL AND ELECTRICAL PLUMBING AND HEATING CODE (IMHPEC) AND THE INTERNATIONAL PLUMBING AND HEATING CODE (IPHC).

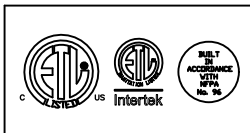
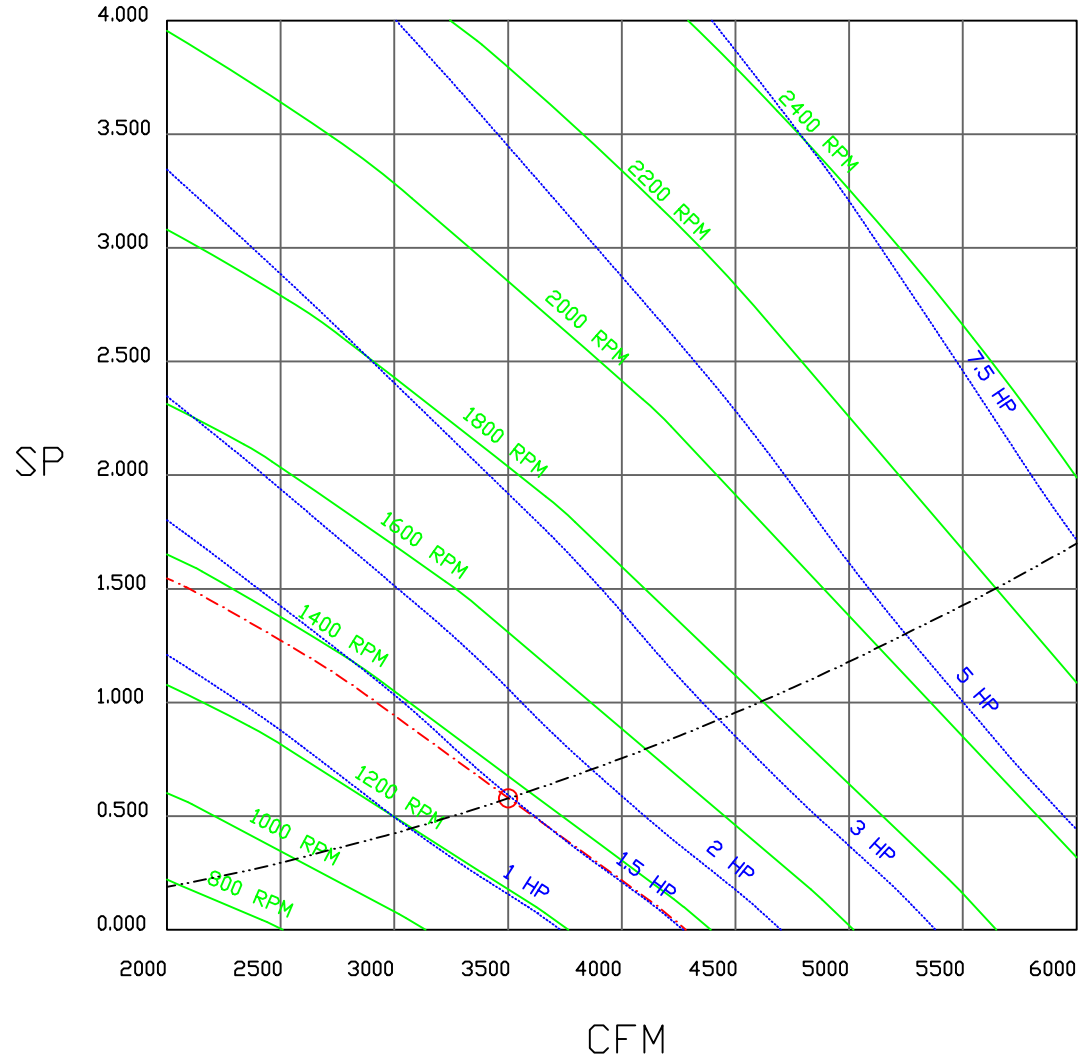


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JOB 3500/4000cfm**Heater Stock	
LOCATION Southborough, MA,	
DATE 4/3/2023	JOB # 5929686
DWG # 2	DRAWN BY courtneyh
REV.	SCALE 3/16" = 1'-0"

FAN#1 (3500/4000CFM) - HEATER PERFORMANCE CURVES.

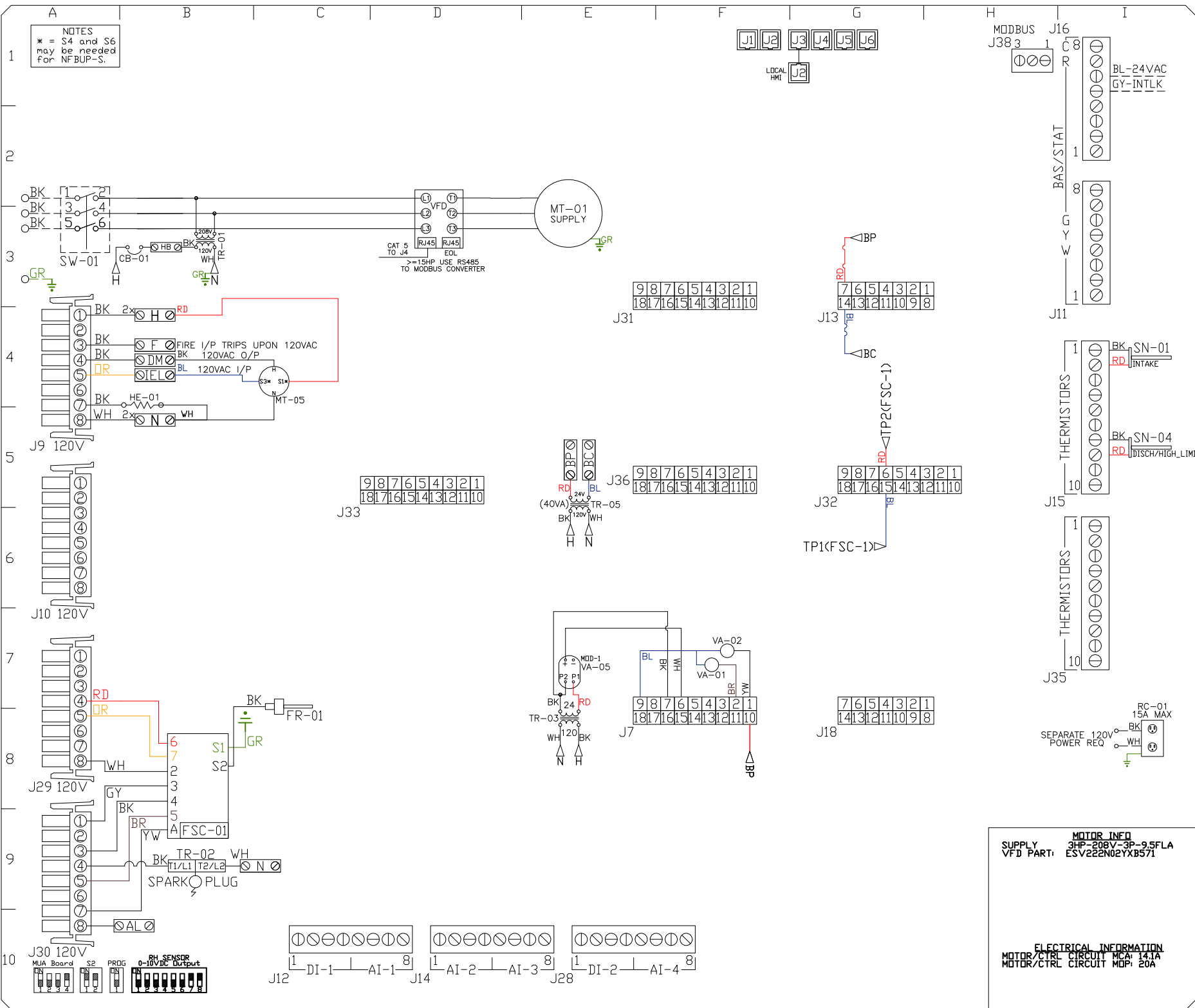
3500 CFM, 0.578 SP @ 1365 RPM AND 1.475 BHP AT 0 FEET AND 75 DEG F.
 * PLEASE NOTE THAT THESE CURVES WERE ADJUSTED FOR JOB SPECIFIC TEMPERATURE AND ALTITUDE.



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JOB 3500/4000cfm**Heater Stock	
LOCATION Southborough, MA,	
DATE 4/3/2023	JOB # 5929686
DWG # 3	DRAWN BY courtneyh
REV.	SCALE 3/8" = 1'-0"

NOTES
 * = S4 and S6 may be needed for NF-BUP-S.



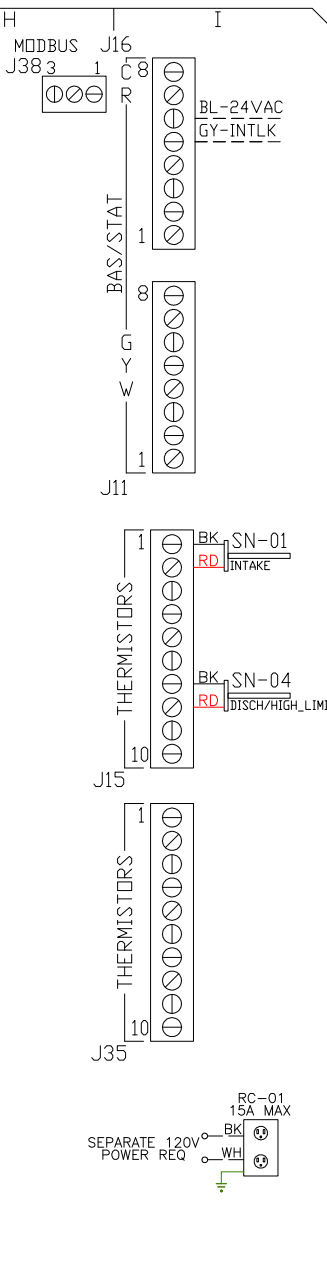
COMPONENT LIST

LABEL	DESCRIPTION
CB-01	CIRCUIT_BREAKER
FR-01	EVD/ECM-ACU+S1.1-MP
FSC-01	FIREYE_FLAME_SAFETY
HE-01	CABINET_HEATER
MT-01	SUPPLY_MOTOR
MT-05	INTAKE_DAMPER_MTR
RC-01	CONV_OUTLET
SN-XX	TEMP_SENSOR 14/15/16/17
SW-01	DISCONNECT_SWITCH
TR-01	CTRL_TRANSFMR
TR-02	IGNITION_TRANSFMR
TR-05	BOARD_POWER_TRFMR
VA-01	PILOT_GAS_VALVE
VA-02	MAIN_GAS_VALVE
VA-05	MOD_GAS_VALVE

LEGEND

--- FIELD WIRING
 --- FACTORY WIRING

BK- BLACK YW- YELLOW
 BL- BLUE GR- GREY
 BR- BROWN PR- PURPLE
 DR- DRAKE RD- RED
 WH- WHITE GR- GREEN
 DR/BL- DR/BL STRIPE
 BL/RD- BL/RD STRIPE
 RD/GN- RD/GN STRIPE
 WH/BL- WH/BL STRIPE



MOTOR INFO
 SUPPLY 3HP-208V-3P-9.5FLA
 VFD PART: ESV222N02YXB571

ELECTRICAL INFORMATION
 MOTOR/CTRL CIRCUIT MCA: 14.1A
 MOTOR/CTRL CIRCUIT MDP: 20A

JOB NAME
 3500/4000cfm**H...

DRAWING TITLE
 MUA BOARD

DESCRIPTION OF OPERATION
 (DETAILS TO FOLLOW)

JOB NO 5929686	DRAWN BY AUTO
TYPE FACTORY	DATE 4/3/2023

DWG MW5929686-1

VFD Wiring

JOB 5929686 - 3500/4000cfm**Heater Stock

DRAWING NUMBER VFD5929686-1

SHIP DATE 4/3/2023

MODEL F2-D.500-80D

Installed Options

Component Identification

SMV 571 SERIES VARIABLE FREQUENCY DRIVE

TERMINAL	FUNCTION
1	Digital Input<Start/Stop>
11	Internal 12VDC Supply for External Devices
2	Analog Common
30	Analog Output: Configurable with P150..P155
5	RJ45
6	To J4 on IBT Board
7	RJ45
	EDL RESISTOR
8	PE
	Ground Terminal
9	L1
	3 Phase Input or Single Phase Input
	L2
	3 Phase Input or Single Phase Input
	L3 (N)
	3 Phase Input (Neutral for 120v)
10	U
	3 Phase AC Motor
	V
	3 Phase AC Motor
	W
	3 Phase AC Motor

SUPPLY DRIVE PARAMETER SETTINGS*

EPM PROGRAM: IBT 571

- P100 (Start Source) = 01 (Terminal Strip)
- P102 = Minimum Frequency (Hz)
- P103 = Maximum Frequency (Hz)
- P150 (TB-30 Output) = 1
- P194 (Password) = 225
- P410 (Modbus Address) = 21

All external control wires to motor speed control should be 16-20 AWG shielded multiconductor cables and must not be run in the same conduit or raceway with any high power wiring. Ground Shielded Cable at the drive chassis ONLY.

PG. 11 OF THE DRIVE MANUAL DESCRIBES THE PROPER INSTALLATION PROCEDURE

PG. 19 OF THE DRIVE MANUAL DESCRIBES THE PROGRAMMING PROCEDURE OF THE DRIVE

PG. 23 OF THE DRIVE MANUAL DESCRIBES THE PARAMETER SETTINGS OF THE DRIVE

*NOTE: THE DEFAULT PASSWORD FROM THE FACTORY REQUIRED TO PROGRAM THE DRIVE IS "225".

- Adjust manually on all drives
- P107 - 00 (if 120 or 208 VAC)
- or 01 (if 230, 480 or 575 VAC)
- P108 Motor FLA x 100 / Drive Output Rating
- P165 (Base Frequency) = 50 (Settable) ONLY
- P166 (Base Frequency) = 50 (Settable) ONLY
- P167 (Base Frequency) = Calculated Per Fan
- P121 For Large HP >15HP set it to 9

IT MAY BE REQUIRED TO FULLY POWER DOWN THE DRIVE AND TURN BACK ON IN ORDER TO INITIATE NEW PARAMETER SETTINGS.

Min. and Max. Frequency Settings override all other Preset speeds/Parameters.

GENERAL NOTES

- NOTES
- DENOTES FIELD WIRING
 - - - DENOTES INTERNAL WIRING
- WIRE COLOR
- BK - BLACK
 - BL - BLUE
 - BR - BROWN
 - RD - RED
 - YV - YELLOW
 - GR - GREEN
 - GY - GRAY
 - PR - PURPLE
 - PK - PINK
 - WH - WHITE

ELECTRICAL INFORMATION
MOTOR/CTRL CIRCUIT MCA: 141A
MOTOR/CTRL CIRCUIT MDP: 20A

SUPPLY MOTOR_INED
VFD PART: 3HP-208V-3P-9.5FLA
ESV2E2EN021XB571

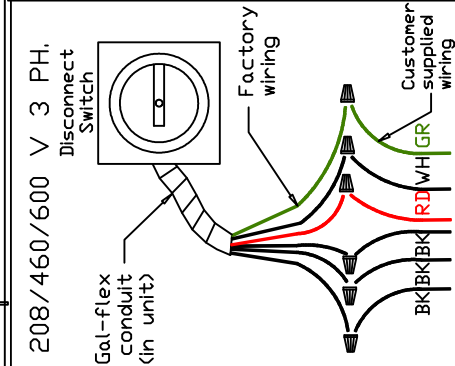
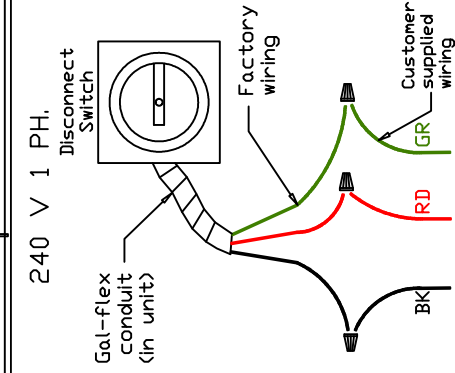
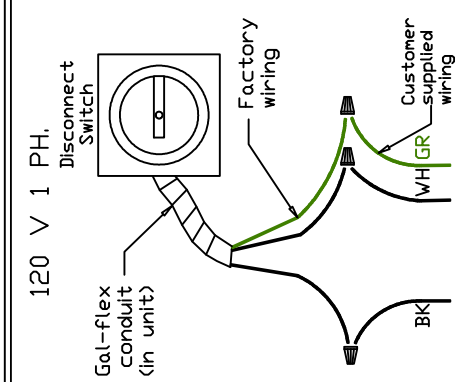
Installation Wiring

DRAWING NUMBER RP5929686-1

SHIP DATE 4/3/2023

MODEL F2-D.500-20D

JOB 5929686 - 3500/4000c-fm**Heater Stock



Field Wired Switch

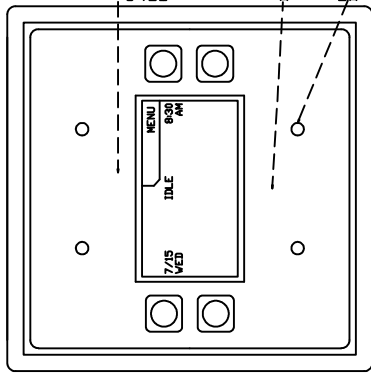
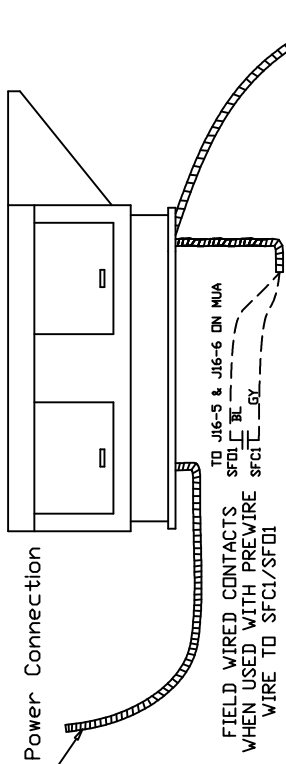
Installed Options

STANDING POWER
RD & WH Wire (115V, 1 PHASE)

BK — — — — —
WH — — — — —

SEPARATE CIRCUIT REQUIRED FOR SERVICE RECEPTACLE (15amp)

See above details.



CAT-5 CONNECTIONS ON REVERSE
J5 ON PHU1 TO J2 OF MUA CAN BE BARE CHAINED
MOUNTING POINTS IN LAST PH

NOTES

- WIRE COLOR
- BK - BLACK
 - BL - BLUE
 - BR - BROWN
 - OR - ORANGE
 - RD - RED
 - WH - WHITE
 - YW - YELLOW
 - GR - GREEN
 - GY - GRAY
 - PR - PURPLE
 - PK - PINK