

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

MUA FAN INFORMATION - JOB#5934870

| 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) | SDNES |
|-------------|---------|-----|------------------|------------|----------|---------|------------|-------|------|-------------|-------|--------|-------|------|-----|------|------|--------------|-------|
| 1 | 1500CFM | 1 | F1-D.250-15D | 15MF-1-MDD | A1-D.250 | 1000 | 1500 | 0.500 | 1691 | DDP,PREMIUM | 1.500 | 0.7570 | 3 | 208 | 4.4 | 7.7A | 15A | 524 | 14.4 |

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 | 1500CFM | 148058 | 136213 | 85°F | 7 IN. W.C. - 14 IN. W.C. | NATURAL | 92 |

FAN OPTIONS

| FAN UNIT NO | TAG | QTY | DESCRIPTION |
|-------------|---------|-----|---|
| 1 | 1500CFM | 1 | SIZE 1 TEMPERED COMMERCIAL DOWN DISCHARGE FOR DIRECT DRIVE AHUS |
| | | 1 | INLET PRESSURE GAUGE, 0-35" |
| | | 1 | MANIFOLD PRESSURE GAUGE, -5 TO 15" WC |
| | | 1 | SHIP LOOSE GAS STRAINER 3/4" |
| | | 1 | MOTORIZED BACKDRAFT DAMPER FOR A1-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 | 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 | 1500CFM | | | | | | YES | |

CURB ASSEMBLIES

| NO | ON FAN | TAG | WEIGHT | ITEM | SIZE |
|----|--------|---------|--------|------|--|
| 1 | # 1 | 1500CFM | 63 LBS | CURB | 21.000"W X 71.000"L X 16.000"H ALONG WIDTH, RIGHT INSULATED. |

FAN SOUND DATA

| FAN UNIT NO | TAG | MOTOR | SOUND DATA | | | OCTAVE BAND SOUND DATA | | | | | | | | |
|-------------|---------|--------|------------|------------------|------------|------------------------|-------|--------|--------|--------|-------|-------|-------|-------|
| | | | LWA | SDNES @ 5 FT | DBA @ 5 FT | DISTANCE (FT) | 63 HZ | 125 HZ | 250 HZ | 500 HZ | 1 KHZ | 2 KHZ | 4 KHZ | 8 KHZ |
| 1 | 1500CFM | SUPPLY | 78 | 14.4423728997373 | 66.5 | 5 | 74.5 | 79.9 | 79 | 74.7 | 71.1 | 69.7 | 68.4 | 64.6 |



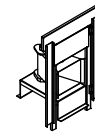
FloAire

| | |
|-----------------------------------|---------------------------|
| JOB ** Heater Stock | |
| LOCATION Southborough, MA, | |
| DATE 4/3/2023 | JOB # 5934870 |
| DWG # 1 | DRAWN BY courtneyh |
| REV. | SCALE 3/8" = 1'-0" |

FAN #1 F1-D250-15D - HEATER (1500CFM)

1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 15' MIXED FLOW DIRECT DRIVE FAN.
2. INTAKE HOOD WITH E2 FILTERS.
3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT.
4. DOWN DISCHARGE CONSTRUCTION FOR SIZE 1 DIRECT DRIVE AHUS.
5. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE.
6. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC, 2.5" DIAMETER, 1/4" THREAD SIZE.
7. SHIP LOOSE GAS STRAINER. TO BE INSTALLED UPSTREAM OF UNIT CONNECTION. 3/4" CONNECTION.
8. MOTORIZED BACK DRAFT DAMPER 16" X 18" FOR SIZE 1 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION. 3/4" REAR FLANGE, LOW LEAKAGE, TFBI20S ACTUATOR INCLUDED.
9. LOW FIRE START - ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
10. FREEZESTAT WITH 10' SENSOR. FACTORY SET AT 35°F AND 10 MINUTES.
11. VAV (VARIABLE-AIR-VOLUME) WIRING PACKAGE FOR COMMERCIAL FANS.
12. VAV SPEED CONTROL VARIABLE FREQUENCY DRIVE INCLUDED.
13. CONTROL PANEL ENCLOSURE HEATER, INCLUDES 100W, 120V HEATER. RECOMMENDED FOR WINTER DESIGN TEMPERATURE LESS THAN 0°F. OPERATES ON PCB CONTROLS IN 1BT SINGLE MODULES OR RTU.
14. GFCI 15 AMP CONVENIENCE OUTLET FOR HEATER ENCLOSURE. POWER SUPPLY BY OTHERS - INCLUDES RECEPTACLE AND J BOX.
15. HINGED DOUBLE WALL INSULATED DDDR ASSEMBLY (BURNER/BLOWER SECTION).
16. 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 AMCA PUBLICATION 201. 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 14" x 14".



DIRECT FIRED GAS PROFILE PLATE ASSEMBLY

NOTE: FIRE HAZARD PREVENTION INFORMATION

NOTE: FIRE HAZARD PREVENTION INFORMATION: DIRECT FIRED BURNERS SHALL HAVE PATENTED GAS PATENTING, SELF-ALIGNING PROFILE PLATES DESIGNED TO INSURE PROPER AIR VELOCITY AND PREVENTURE LEAKS ACROSS THE BURNER. PROFILE PLATES SHALL ALSO BE DESIGNED TO AVOID CLOGGERS BY LIMITING SPACING BETWEEN PLATES TO A MINIMUM OF 1/8" TO PREVENT CLOGGING AND MAINTAIN PROPER AIR FLOW. THE MANUFACTURER WILL OBTAIN & CONDUCT AIRFLOW TESTS TO VERIFY AIR FLOW.

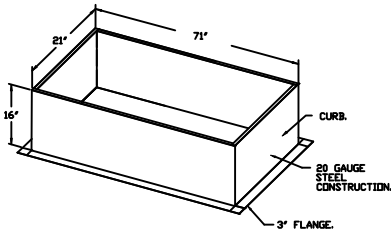
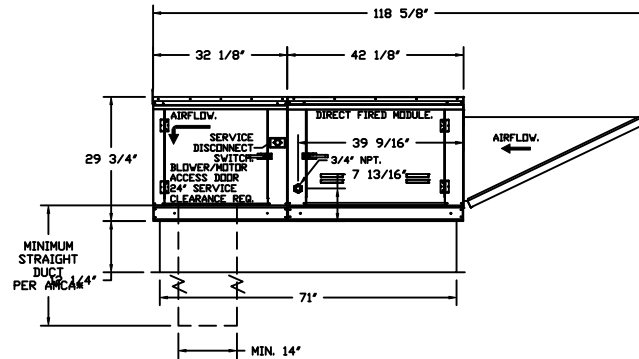
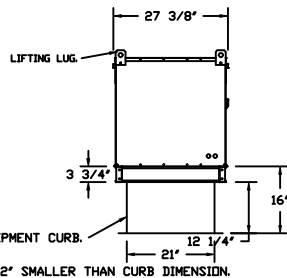
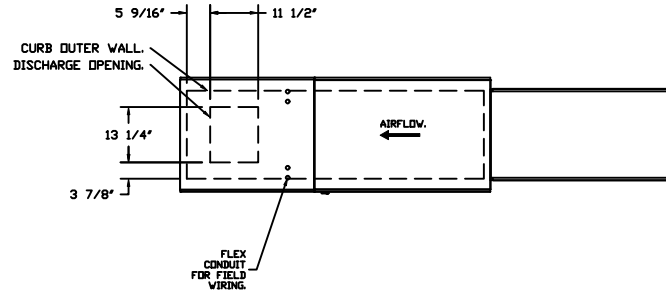
PRECAUTIONS: BURNER PROFILE PLATES ARE DESIGNED TO AUTOMATICALLY REACT TO THE SWIRLING OF A FAN AND STREAM, WITHOUT THE NEED FOR ANY EXTRA IN ACTIVATION TO AUTOMATICALLY ALERT THEM WITH THIS FEATURE. ALL OF UNITS ARE DESIGNED FOR EXHAUST CONTROL, VENTILATION ONLY REQUIREMENTS.

GENERAL CONSTRUCTION: ALL PROFILE PLATE ASSEMBLIES SHALL BE INCLUDED IN THE 1/2" UNITS EXL LISTING AND SUPPLY WITH CORNER SAFETY STRAPS AND 2x4 AND 2x6 COSS-REGULATIONS OF HEATED AND AIRY 2x4S OR 2x6S AS REQUIRED.

GENERAL CONSTRUCTION: PROFILE PLATES SHALL BE FINISH FROM OUR GALVANIZED STEEL. PROFILE PLATES SHALL BE FINISH FROM OUR GALVANIZED STEEL. PROFILE PLATES SHALL BE FINISH FROM OUR GALVANIZED STEEL. PROFILE PLATES SHALL BE FINISH FROM OUR GALVANIZED STEEL.

SUPPLY SIDE HEATER INFORMATION

WINTER TEMPERATURE = -10°F. TEMP. RISE = 85°F.
 BTUS CALCULATED OFF ACTUAL AIR DENSITY.
 OUTPUT BTUS AT ALTITUDE OF 0.0 FT. = 136213.
 INPUT BTUS AT ALTITUDE OF 0.0 FT. = 146058.

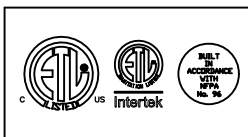
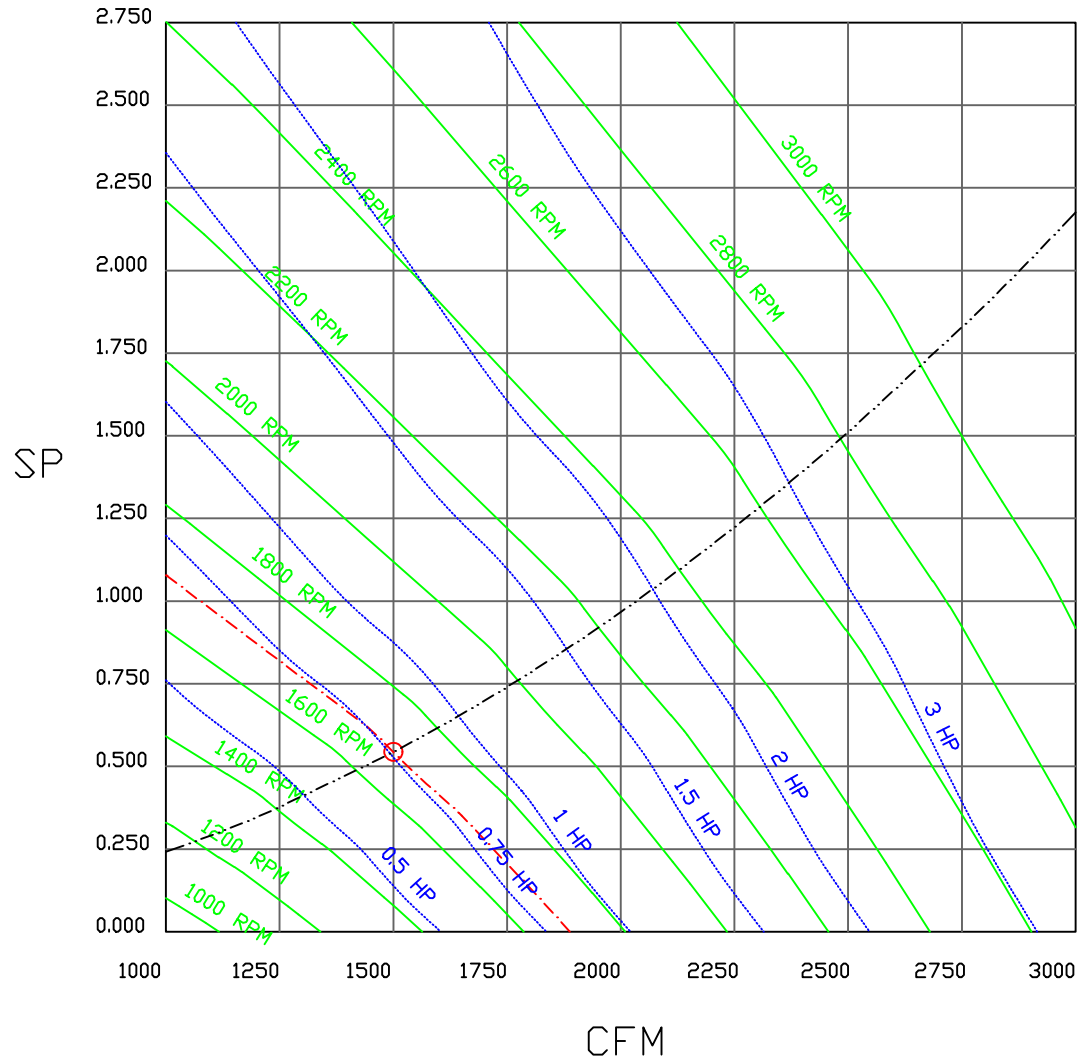


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| | |
|----------------------------|--------------------|
| JOB ** Heater Stock | |
| LOCATION Southborough, MA, | |
| DATE 4/3/2023 | JOB # 5934870 |
| DWG # 2 | DRAWN BY courtneyh |
| REV. | SCALE 1/4" = 1'-0" |

FAN#1 (1500CFM) - HEATER PERFORMANCE CURVES.

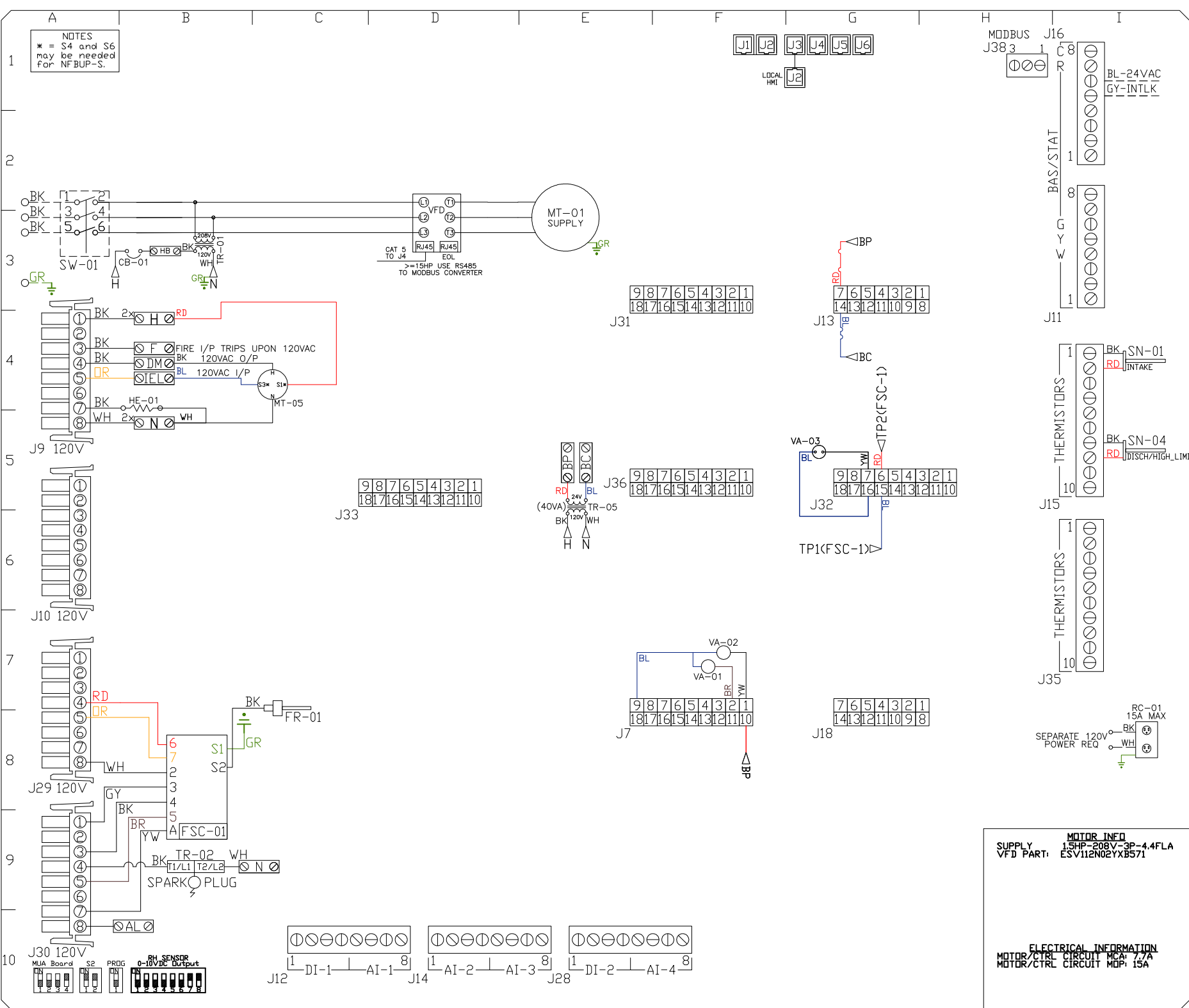
1500 CFM, 0.544 SP @ 1691 RPM AND 0.757 BHP AT 0 FEET AND 75 DEG F.
 * PLEASE NOTE THAT THESE CURVES WERE ADJUSTED FOR JOB SPECIFIC TEMPERATURE AND ALTITUDE.



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| | |
|----------------------------|--------------------|
| JOB ** Heater Stock | |
| LOCATION Southborough, MA, | |
| DATE 4/3/2023 | JOB # 5934870 |
| 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-03 | MOD_GAS_VALVE |

| LEGEND | |
|----------------|--------------|
| FIELD WIRING | |
| FACTORY WIRING | |
| BK- BLACK | YW- YELLOW |
| BL- BLUE | GY- GREY |
| BR- BROWN | PR- PURPLE |
| OR- ORANGE | 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 15HP-208V-3P-4.4FLA
 VFD PART: ESV112N02YX8571

ELECTRICAL INFORMATION
 MOTOR/CTRL CIRCUIT MCA: 7.7A
 MOTOR/CTRL CIRCUIT MDP: 15A

JOB NAME
 ** Heater Stock

DRAWING TITLE
 MUA BOARD

DESCRIPTION OF OPERATION
 (DETAILS TO FOLLOW)

| | |
|--------------------------|-------------------------|
| JOB NO 5934870 | DRAWN BY AUTO |
| TYPE FACTORY | DATE 4/3/2023 |

DWG HW5934870-1

VFD Wiring

JOB 5934870 - ** Heater Stock

DRAWING NUMBER VFD5934870-1

SHIP DATE 4/3/2023

MODEL F1-D.250-15D

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) DFLT
- P166 (Base Frequency) = 60 (Settable Only) DFLT
- P167 (Base Frequency) = Calculated Per Fan
- P121 For Large HP V5HP 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
 - OR - ORANGE
 - PK - PINK
 - WH - WHITE

ELECTRICAL INFORMATION
MOTOR/CTRL CIRCUIT MCA: 77A
MOTOR/CTRL CIRCUIT MDP: 15A

SUPPLY MOTOR_INED
15HP-208V-3P-4FLA
VFD PART: ESV11EN02YXB571

Installation Wiring

JOB 5934870 - ** Heater Stock

DRAWING NUMBER RP5934870-1

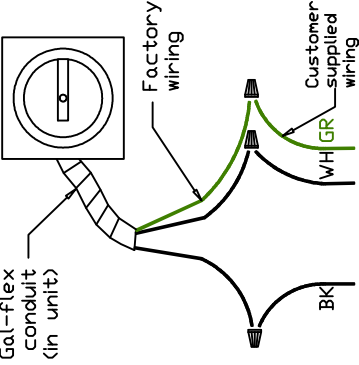
SHIP DATE 4/3/2023

MODEL F1-D.250-15D

120 V 1 PH.

Gal-flex conduit (in unit)

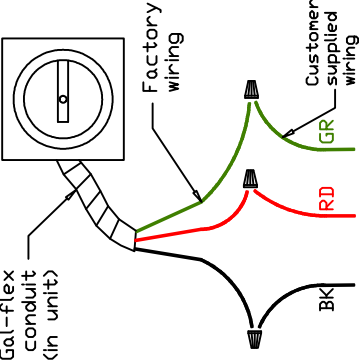
Disconnect Switch



240 V 1 PH.

Gal-flex conduit (in unit)

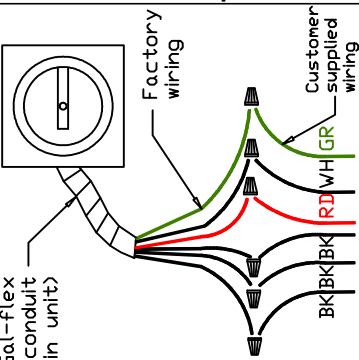
Disconnect Switch



208/460/600 V 3 PH.

Gal-flex conduit (in unit)

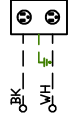
Disconnect Switch



Field Wired Switch

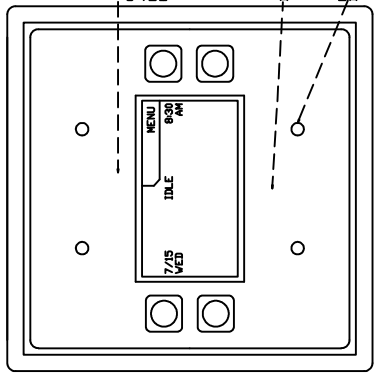
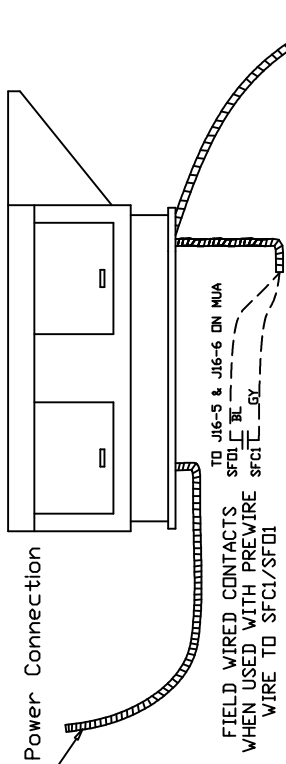
Installed Options

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



SEPARATE CIRCUIT REQUIRED
FOR SERVICE RECEPTACLE
(15amp)

See above details.



CAT-5 CONNECTIONS ON REVERSE
J5 ON PH11 TO J2 OF PH12 CAN BE EASILY CHANGED
BY SWAPPING WIRE PAIRS. PLACE END OF LINE DEVICE IN LAST PAIR

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