

Gas-Fired Tempered Make-Up Air Unit

Model:

TK2ECDD-3PH-FF

3-Phase, 230V, 5.00 HP, Direct Drive, ECM Motor with Motorized Damper and 22" Blower. MAX 5000 CFM's



TK2-500-22Z Direct Fired Direct Drive (822 lbs.)



Direct Gas Fired Heated Make Up Air Unit with 22" Direct Drive Fan

Supply Motor:

Model 163902/A01-ECM-60-240-22, 5.000 HP, 3 Phase, 230 V, 60Hz, 9.6 FLA, ODP-ECM (Open Drip Proof Electronically Commutated Motor)

Burner:

Min Output BTU: 18,000 BTU/Hr
Max Output BTU: 550,000 BTU/Hr
Size: 12" long
Gas Type: Natural

Supply Performance:

Volume Range: 2500-5000 cfm
RPM: 1605
TS: 9244 ft/min
SP: 0.659" w.g.
0.500" Ext. + 0.105" Int. + 0.054" Opt.
BHP: 2.71

Heating Schedule:

Altitude: 0'
Winter Entering Air Dry Bulb Temp: 0°F
Temp Rise: 100°F
Output BTU: 540000
Input BTU: 586957
BTUs BASED OFF STANDARD AIR DENSITY

Supply Installation Information:

Gas Inlet Pressure: 7 in. w.c. - 14 in. w.c.
Insurance: No Insurance Requirement (ANSI)
Unit Main Input: 13.1 Amps MCA, 20 Amps MOP, 230 V, 14 AWG Wire Min.
Supply Unit Voltage: 3 phs 230 V 60Hz

Construction Features

Housing constructed of heavy duty G90 galvanized steel • Forward curved centrifugal blower wheel • Vibration isolation • Adjustable drive assemblies • Adjustable motor mount • Ball bearing motors • Heavy duty, pre-lubricated bearings rated for 200,000 hours of operation • Static resistant belts • Service doors on both sides • Horizontal & down discharge • Large intake area ensures low pressure drop across unit • Spring loaded profile plates automatically adjust for any airflow - no manual setting required! • Weatherproof safety disconnect switch • Modular design provides design flexibility • Fully insulated casing

Blower:

22 Inch Plenum Fan for size 2 MOD. Motor integral to Wheel. Max RPM = 1920.

Temp Control:

RTC Solutions • 40-90°F Discharge Temp Control • Field Wired On/Off Start Command

Intake:

Sloped Filtered Intake for Size #2 Modular Heater. 26.813" Wide X 53.625" Long X 31.313" High. Includes 2" MV EZ Kleen Metal Mesh Filters.

Filters:

3x MV EZ Kleen Metal Mesh Filter. 20"x 25"x 2" Used for heater and supply fan intakes. (3416)

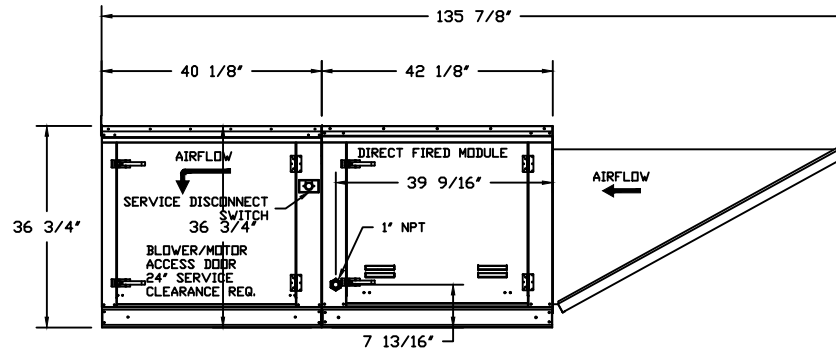
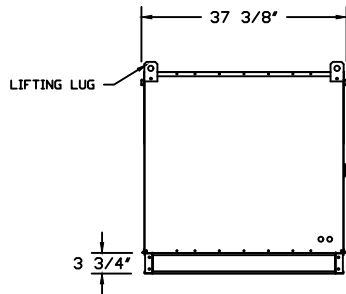
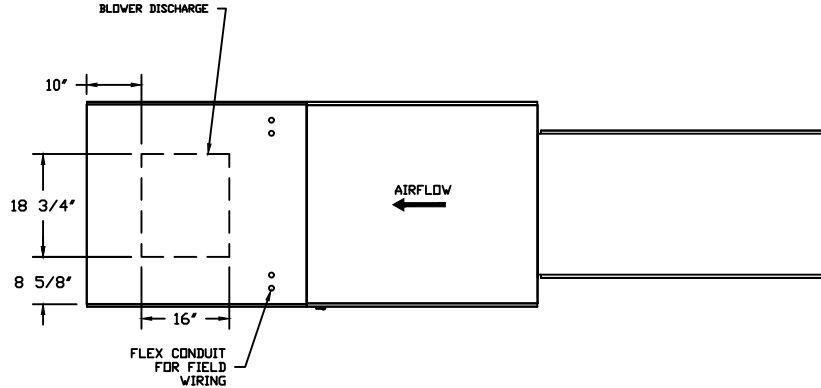
Selected Options:

- Motorized Back Draft Damper 22.75" X 24" for Size 2 Standard & Modular Heater Units w/Extended Shaft, Standard Galvanized Construction, 3/4" Rear Flange, Low Leakage, LF120S Actuator Included
- Low Fire Start. Allows the burner circuit to energize when the modulation control is in a low fire position.
- Gas Pressure Gauge, 0-35", 2.5" Diameter, 1/4" Thread Size
- Gas Pressure Gauge, -5 to +15 Inches Wc., 2.5" Diameter, 1/4" Thread Size
- ECM Wiring Package and Manual or 0-10 VDC Control for Supply EC Ziehl Fans. RTC Controller

TK2-D.500-22Z DIRECT FIRED HEATER

1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 22" DIRECT DRIVE FAN
2. INTAKE HOOD WITH EZ FILTERS
3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT
4. MOTORIZED BACK DRAFT DAMPER 22.75" X 24" FOR SIZE 2 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, LF120S ACTUATOR INCLUDED
5. LOW FIRE START. ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
6. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE
7. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC., 2.5" DIAMETER, 1/4" THREAD SIZE
8. ECM WIRING PACKAGE AND MANUAL OR 0-10 VDC CONTROL FOR SUPPLY EC ZIEHL FANS. RTC CONTROLLER

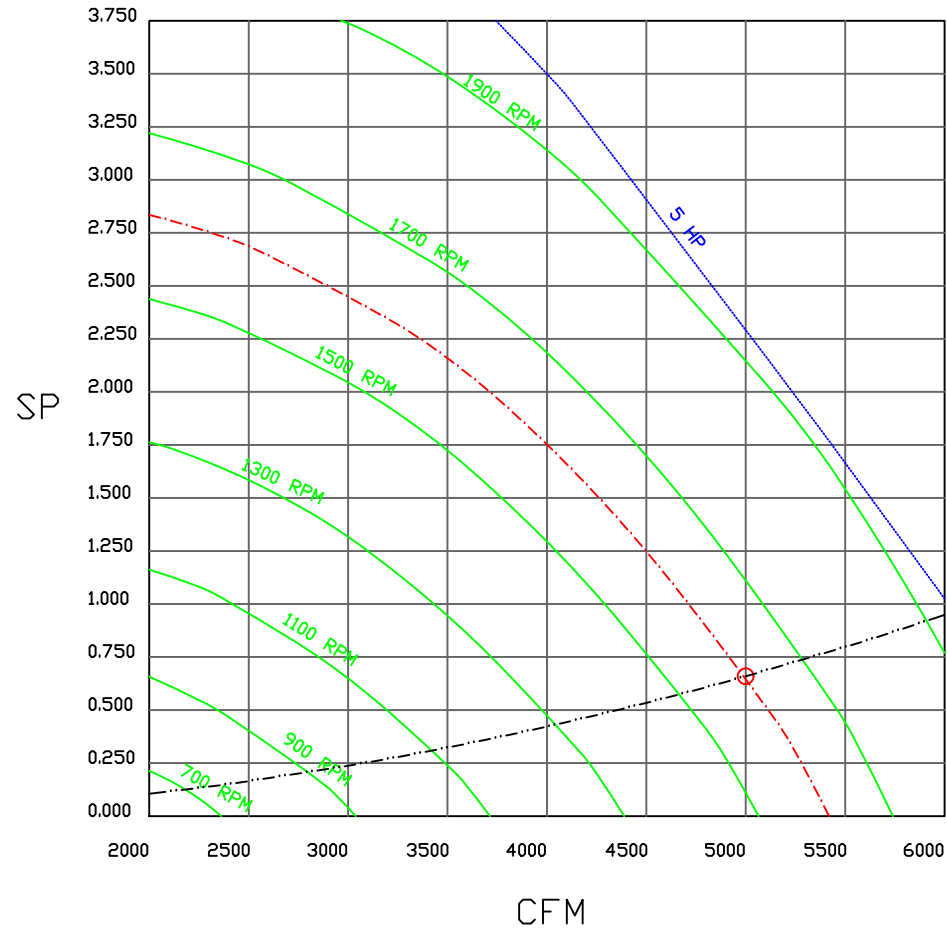
NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE UNLESS OTHERWISE SPECIFIED. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT.



JOB	
LOCATION	
DATE	JOB #
DWG #	DRAWN BY
REV.	SCALE 1/4" = 1'-0"

(5000 5HP/3PH-230V) - HEATER PERFORMANCE CURVES.

5000 CFM, 0.659 SP @ 1605 RPM and 2.71 BHP at 0 feet and 100 deg F
 * Please note that these curves were adjusted for Job specific temperature and altitude.



JOB	
LOCATION	
DATE	JOB #
DWG #	DRAWN BY
REV.	SCALE 3/8" = 1'-0"

Direct Fired Heater Wiring

JOB NAKS Direct Fired Direct Drive MUA

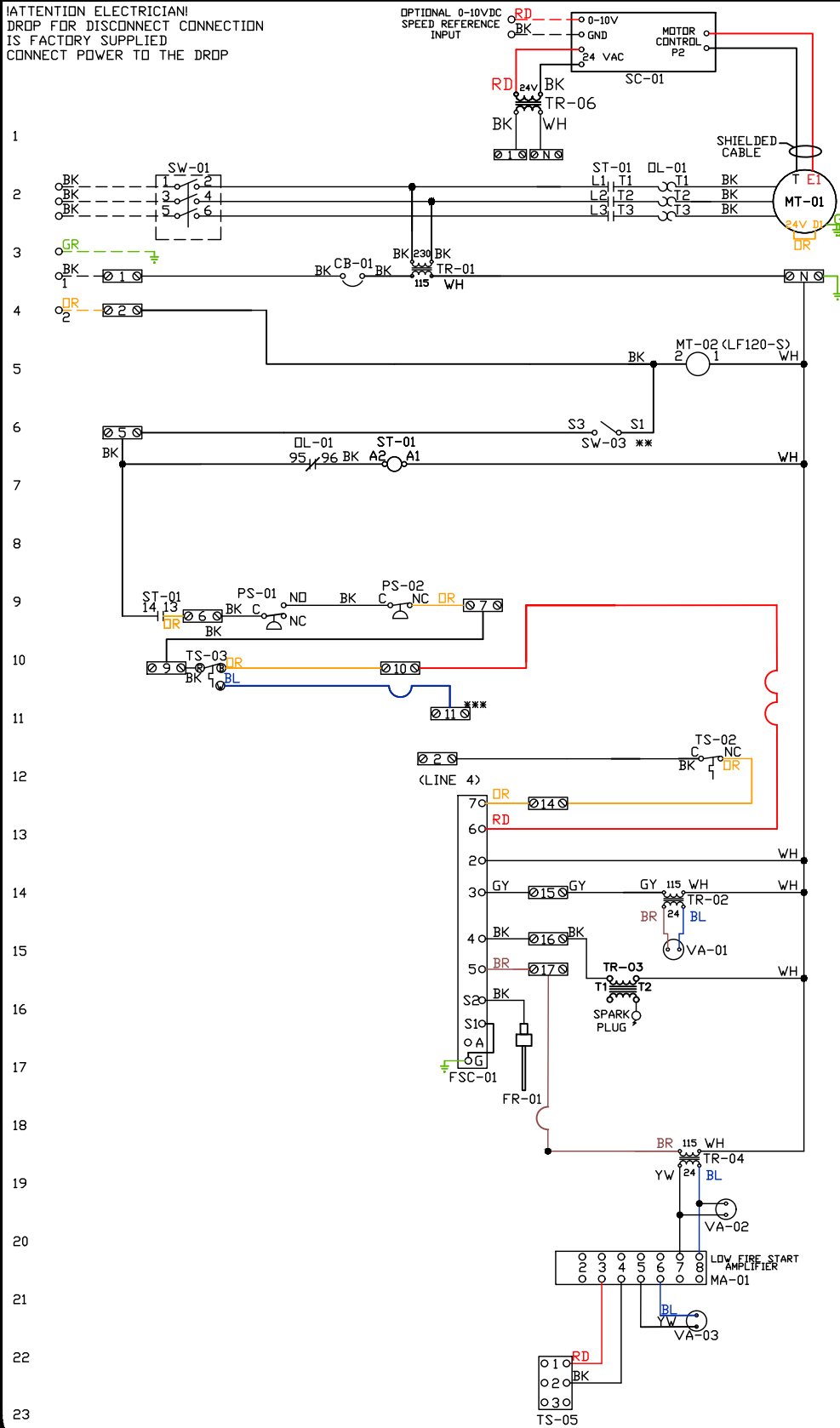
DRAWING NUMBER

SHIP DATE 3/19/2019

MODEL TK 1-5 Series Direct Drive ECM

ATTENTION ELECTRICIAN!
DROP FDR DISCONNECT CONNECTION
IS FACTORY SUPPLIED
CONNECT POWER TO THE DROP

OPTIONAL 0-10VDC
SPEED REFERENCE
INPUT



Installed Options
Field Wired Single Switch Control
Motorized Back Draft Damper

Discharge Temp. Control

Component Identification

Label	Description	Location
CB-01	Circuit breaker (2amp)	[3]
FR-01	Flame rod	[16]
FSC-01	Fireeye FSC	[11-14]
MA-01	Modulating amplifier	[19]
MT-01	Supply motor	[2]
MT-02	Damper motor	[5]
DL-01	Supply motor overload	[2][7][9]
PS-01	Low Air-Flow Switch	[9]
PS-02	High Air-Flow Switch	[9]
SC-01	RTC-FSC-1	[1]
ST-01	Supply motor contactor	[2][7][9]
SW-01	Main disconnect switch	[2]
SW-03	Damper end limit switch	[4]
TR-01	Power transformer(200va)	[12]
TR-02	Power transformer(20va)	[12]
TR-03	Ignition transformer	[14]
TR-04	Power transformer(20va)	[17]
TR-06	24VAC 20VA Transformer	[1]
TS-02	High temp limit switch	[10]
TS-03	Intake Air Sensor	[10]
TS-05	Discharge Air Sensor	[21]
VA-01	Pilot gas valve	[13]
VA-02	Main gas valve	[18]
VA-03	Modulating gas valve	[20]

MOTOR INFO
SUPPLY: SHP-230V-3P-9.6FLA
CONTACTOR: 100-CJ6D10
OVERLOAD: 193-TIAC10

ELECTRICAL INFORMATION
MOTOR/CTRL CIRCUIT MCB: 13.1A
MOTOR/CTRL CIRCUIT MDP: 20A

NOTES
--- DENOTES FIELD WIRING
___ DENOTES INTERNAL WIRING

** TERMINALS S4 AND S6 USED ON
NF & AF SERIES ACTUATORS
*** TERMINAL 11 PROVIDES COOLING
CONNECTION

WIRE COLOR	SOCKET STYLE
BK-BLACK	NO 4 1 3
BL-BLUE	NC 2 1 1
GR - GREEN	COM 8 7 7
BR - BROWN	COM 6 1 5
GY - GRAY	
RD - RED	
WH - WHITE	
PK - PINK	
DR - DRANGE	
PR - PURPLE	

Installation Wiring

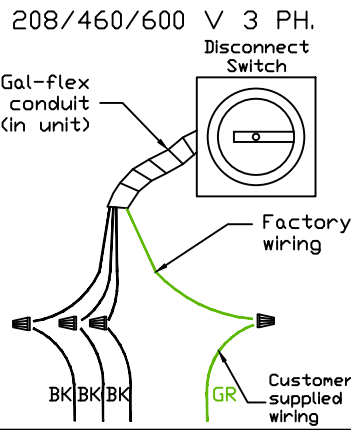
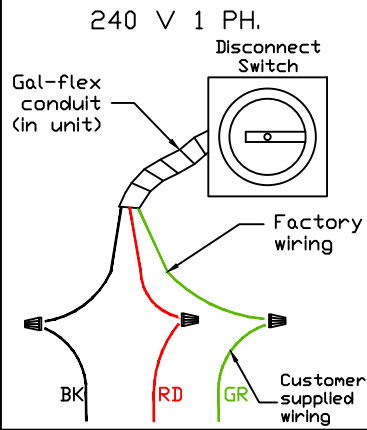
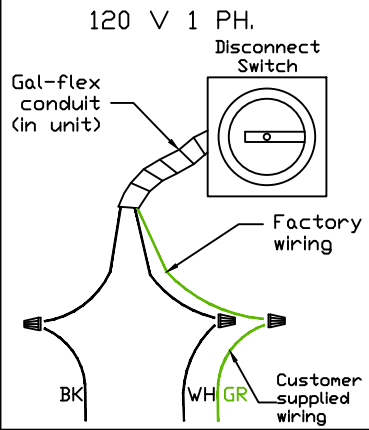
JOB *NAKS Direct Fired MUA*

DRAWING NUMBER

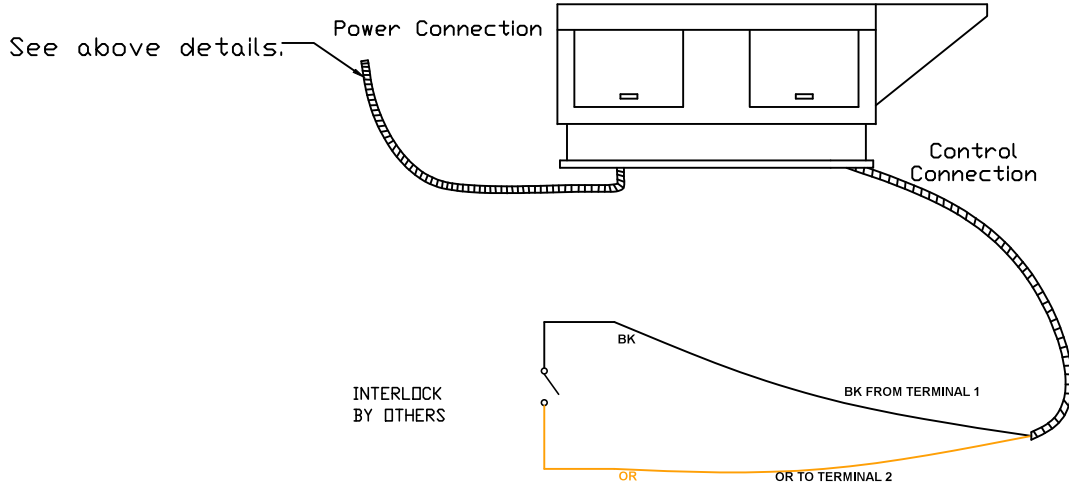
SHIP DATE

MODEL **TK 1-5 Series**

Installed Options



Field Wired On/Off Switch



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