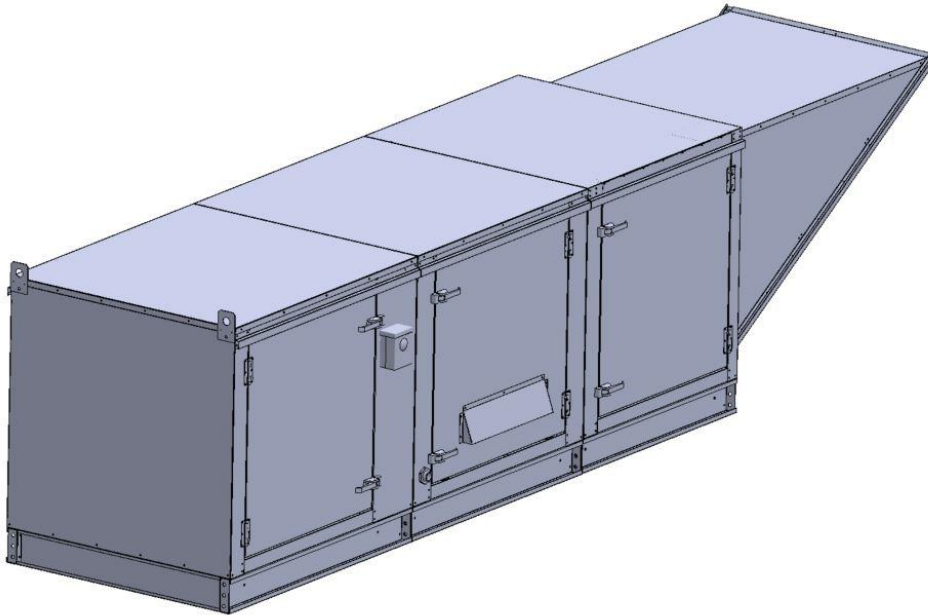


## Gas-Fired Tempered Make-Up Air Unit / EVAP

Model:

**TK1-EVAP-3PH-FF**

3-Phase, 208V, 1.50 HP, Belt driven with Motorized Damper and 10" Blower. MAX 2400 CFM's





TK1-250 Direct Fired EVAP (828 lbs.)

**Supply Motor:**

Model 00158OT3E56-S48PP, 1.500 HP, 3 Phase, 208 V, 60Hz, 4.6 FLA, ODP (Open Drip Proof)

**Supply Motor Pulleys:**

<u>Part Type</u>	<u>Qty</u>	<u>Browning #</u>	<u>Turns Out</u>
Belt	1	AX39	
Blower Pulley	1	AK46 x 3/4	
Motor Pulley	1	1VL40 x 5/8	1.0

**Burner:**

Min Output BTU: 18,000 BTU/Hr  
Max Output BTU: 275,000 BTU/Hr  
Size: 6" long  
Gas Type: Natural

**Supply Performance:**

Volume: 2400 cfm Volume Range: 1000-2400 cfm  
RPM: 1317  
TS: 3448 ft/min  
SP: 0.871" w.g.  
0.500" Ext. + 0.326" Int. + 0.045" Opt.  
BHP: 1.455

**Heating Schedule:**

Altitude: 0'  
Winter Entering Air Dry Bulb Temp: 0°F  
Temp Rise: 100°F  
Output BTU: 259200  
Input BTU: 281739  
BTUs BASED OFF STANDARD AIR DENSITY

**Cooling Schedule:**

Intake Entering Dry Bulb Temperature: 90°F  
Intake Entering Wet Bulb Temperature: 70°F  
Intake Entering Relative Humidity: 37%  
Intake Leaving Dry Bulb Temperature: 73°F  
Intake Leaving Wet Bulb Temperature: 70°F  
Temperature drop calculations are based on tested data.

**Supply Installation Information:**

Gas Inlet Pressure: 7 in. w.c. - 14 in. w.c.  
Insurance: No Insurance Requirement (ANSI)  
Unit Main Input: 7.0 Amps MCA, 15 Amps MOP, 208 V, 14 AWG Wire Min.  
Supply Unit Voltage: 3 phs 208 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:**

10" forward curved, centrifugal blower. Permanently lubricated ball bearings. Galvanized finish. 3/4" x 19" Shaft. 0-4000 CFM. 2500 max. RPM. Used in heated and non-heated supply fans.

**Temp Control:**

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

**Intake:**

Size #2 Celdek Evaporative Cooler for Size # 1 Modular Heater. 36.75" Wide X 85.813" Long X 36.688" High. Includes intake hood with filters. For outdoor installation. Use with water softener recommended.

**Filters:**

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

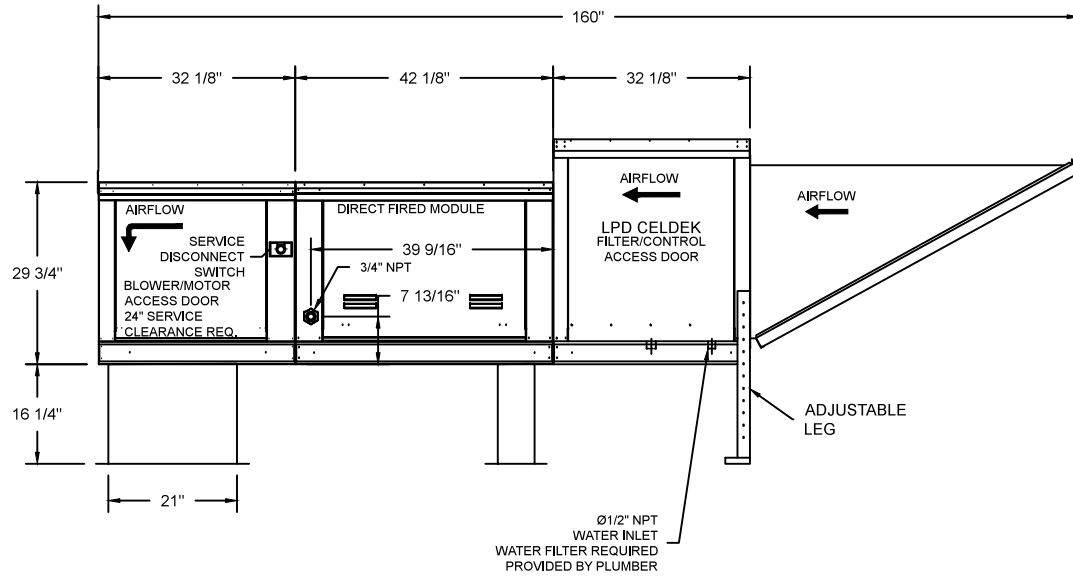
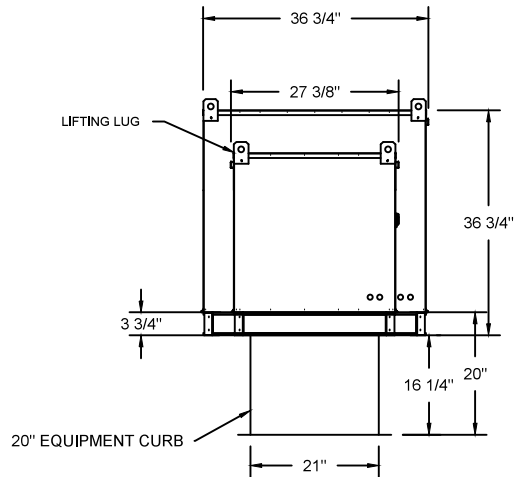
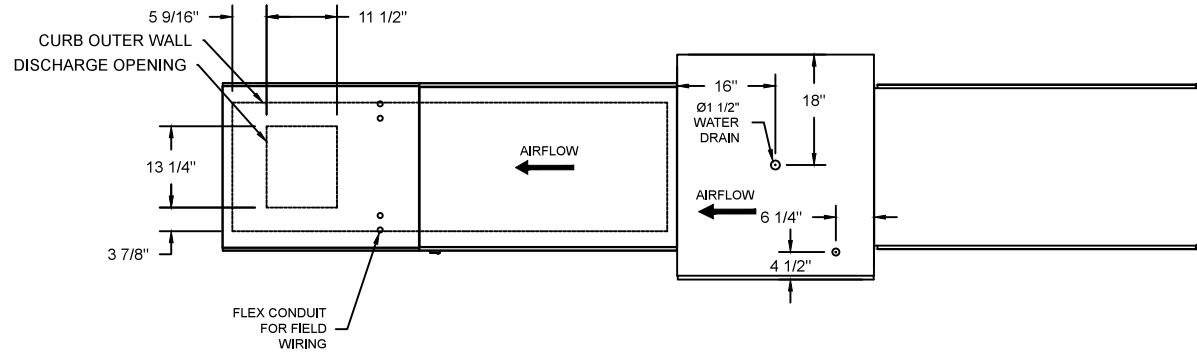
**Selected Options:**

- Motorized Back Draft Damper 16" X 18" for Size 1 Standard & Modular Heater Units w/Extended Shaft, Standard Galvanized Construction, 3/4" Rear Flange, Low Leakage, TFB120S 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
- Freeze Protection Drain Control kit for Evaporative Coolers. Includes 3-Way water solenoid valve 8316G064 (shipped loose), Pressure switch installed upstream of 2way solenoid in unit, Brass Tee, 2 NPT half inch nipples, and two stage thermostat T678A1361. Field wiring required by others for 3-way valve. For both Celdek and Standard V-bank type Configurations.

TK1 DIRECT FIRED HEATER WITH EVAP

1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 10" BLOWER
2. EVAP COOLER (LPD CELDEK) - W/INTAKE HOOD W/EZ FILTERS
3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT
4. LOW FIRE START. ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
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. FREEZE PROTECTION DRAIN CONTROL KIT FOR EVAPORATIVE COOLERS. INCLUDES 3-WAY WATER SOLENOID VALVE 8316G064 (SHIPPED LOOSE), PRESSURE SWITCH INSTALLED UPSTREAM OF 2WAY SOLENOID IN UNIT, BRASS TEE, 2 NPT HALF INCH NIPPLES, AND TWO STAGE THERMOSTAT T678A1361. FIELD WIRING REQUIRED BY OTHERS FOR 3-WAY VALVE. FOR BOTH CELDEK AND STANDARD V-BANK TYPE CONFIGURATIONS.
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, TFB120S ACTUATOR INCLUDED

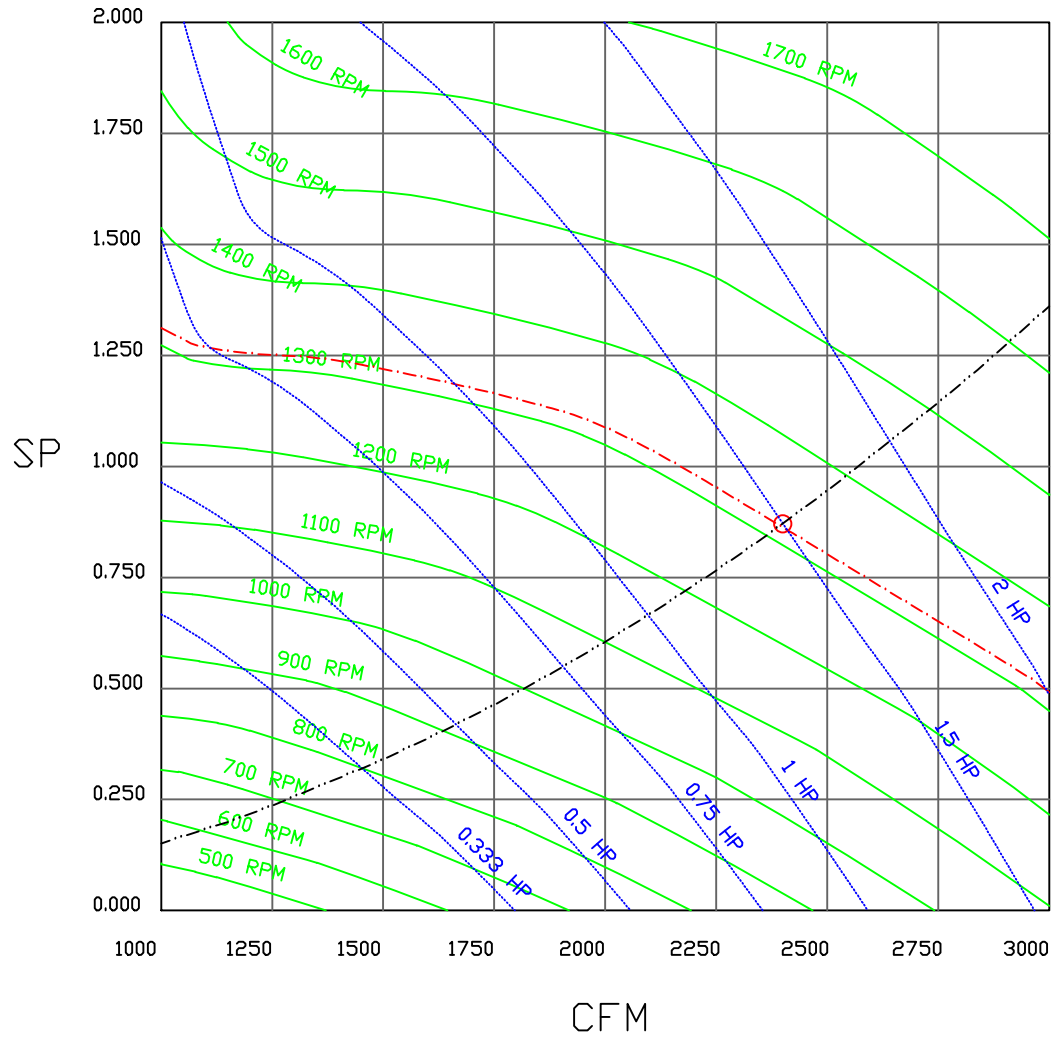
NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH EQUAL TO THREE TIMES THE SUPPLY DUCT EQUIVALENT DIAMETER MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE UNLESS OTHERWISE SPECIFIED. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY.



JOB	
LOCATION	
DATE	08/01/2018
DWG #	JOB #
REV.	DRAWN BY
	SCALE

(EVAP 2400 1.5HP/3PH-208V) - HEATER PERFORMANCE CURVES.

2400 CFM, 0.871 SP @ 1317 RPM and 1.455 BHP at 0 feet and 100 deg F  
 \* Please note that these curves were adjusted for job specific temperature and altitude.



	<b>NORTH AMERICAN KITCHEN SOLUTIONS INCORPORATED</b>	<b>JOB</b>	
		<b>LOCATION</b>	
		<b>DATE</b> 8/3/2018	<b>JOB #</b>
		<b>DWG #</b>	<b>DRAWN BY</b>
		<b>REV.</b>	<b>SCALE</b> 3/8" = 1'-0"

# Direct Fired Heater Wiring

JOB NAKS DIRECT FIRED MUA EVAP

DRAWING NUMBER

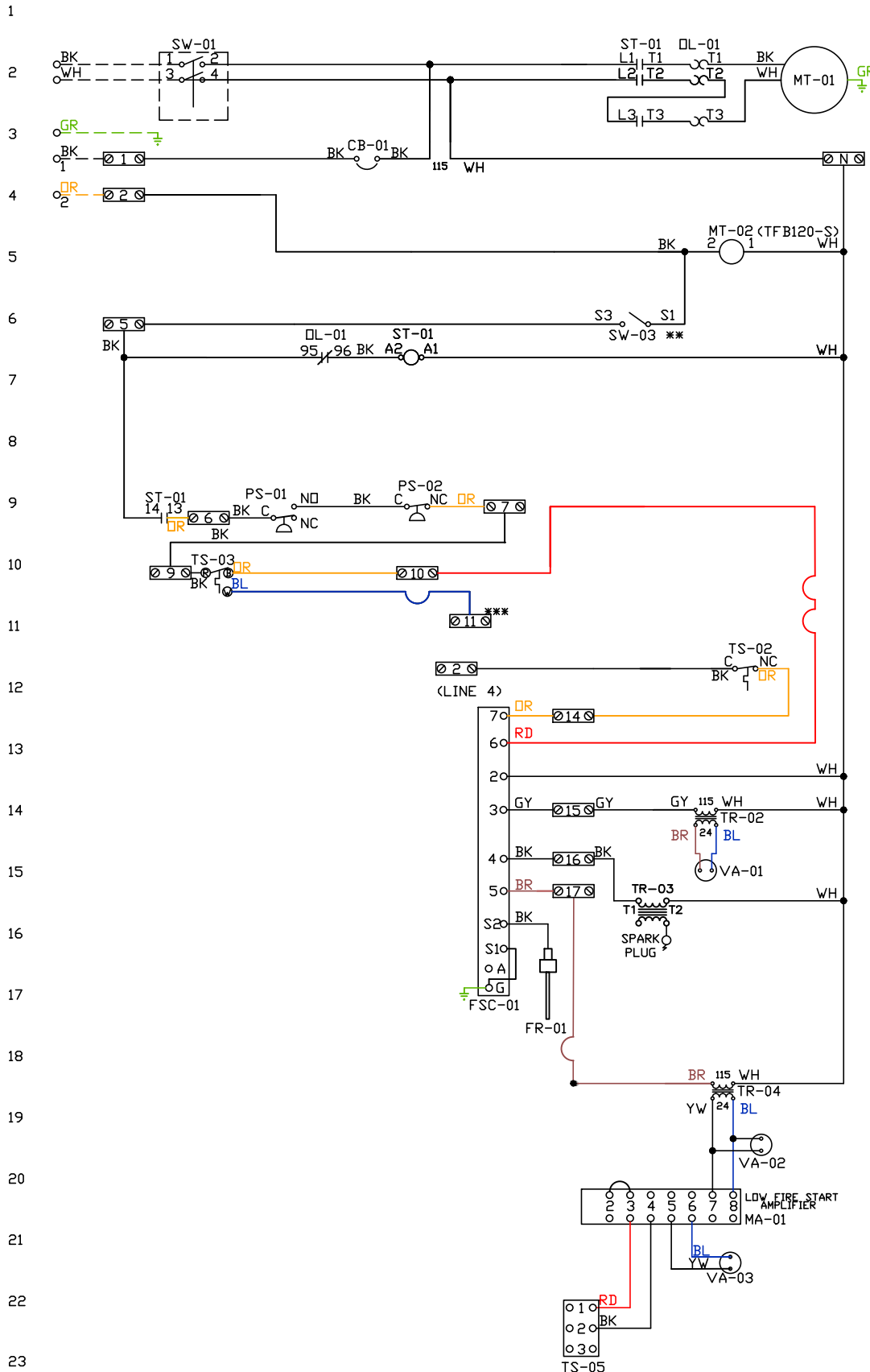
SHIP DATE

MODEL TK 1-5 Series

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

Installed Options  
 Field Wired Single Switch Control  
 Motorized Back Draft Damper

Discharge Temp. Control



Label	Component Identification Description	Location
CB-01	Circuit breaker (2amp)	[3]
FR-01	Flame rod	[16]
FSC-01	Fireye 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]
PS-01	Low AirFlow Switch	[9]
PS-02	High AirFlow Switch	[9]

ST-01	Supply motor contactor	[2][7][9]
SW-01	Main disconnect switch	[2]
SW-03	Damper end limit switch	[4]
TR-02	Power transformer(20va)	[12]
TR-03	Ignition transformer	[14]
TR-04	Power transformer(20va)	[17]
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 CONTACTOR:	1.5HP-208V-3P-4.6FLA
OVERLOAD:	100-K05D10
	193-KB48

ELECTRICAL INFORMATION  
 MOTOR/CTRL CIRCUIT MCA: 7.0A  
 MOTOR/CTRL CIRCUIT MDP: 15A

NOTES  
 --- DENOTES FIELD WIRING  
 ——— DENOTES INTERNAL WIRING

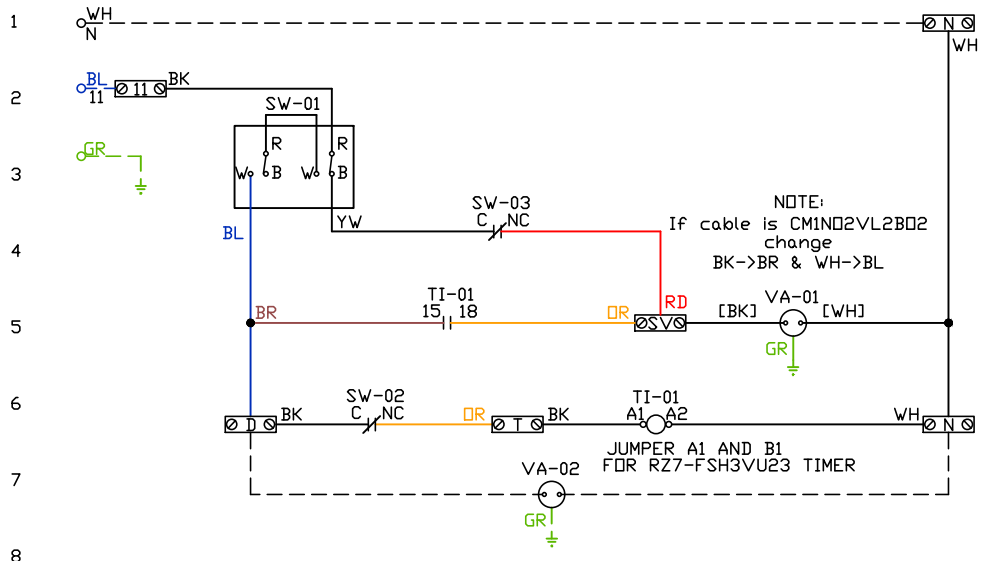
\*\* TERMINALS S4 AND S6 USED ON NF & AF SERIES ACTUATORS  
 \*\*\* TERMINAL 11 PROVIDES COOLING CONNECTION

WIRE COLOR	SOCKET STYLE
BK-BLACK	ND 4 3
BL-BLUE	NC 2 1
BR - BROWN	CDL 8 7
DR - ORANGE	CDM 6 5
GY - GRAY	
GR - GREEN	
RD - RED	
WH - WHITE	
PK - PINK	
PR - PURPLE	

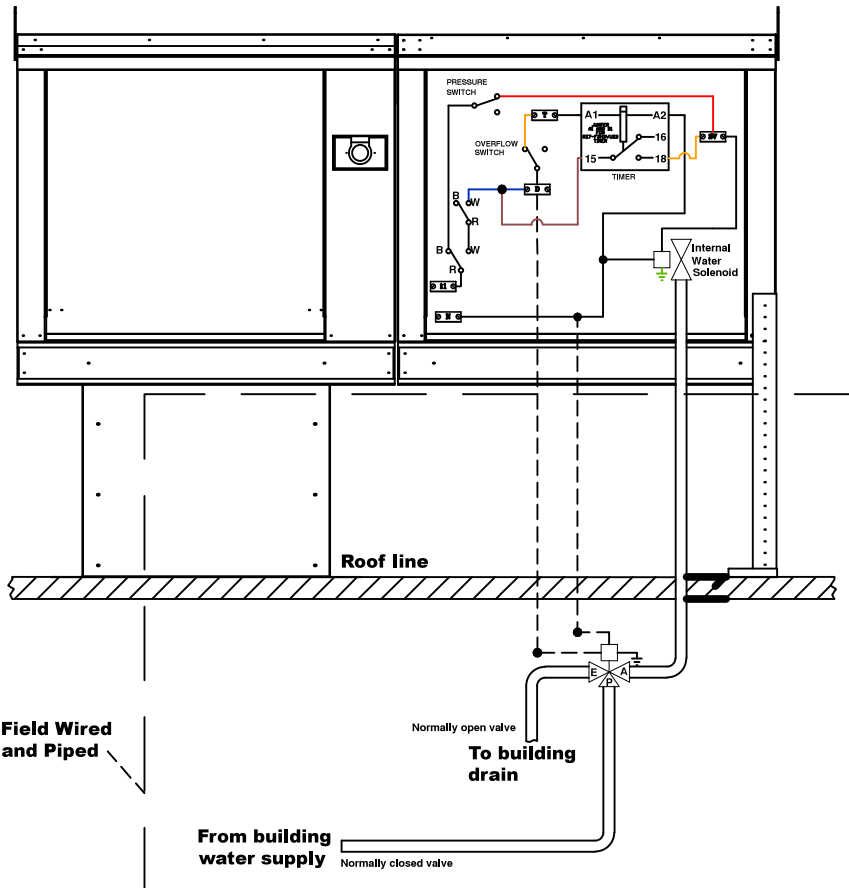
Installed Options

Component Identification

Label	Description	Location
SW-01	Thermostat	[2]
SW-02	Overflow Switch	[6]
SW-03	Pressure Switch	[3]
TI-01	Spray Timer	[5-7]
VA-01	Internal Solenoid Valve	[5]
VA-02	3-Way Solenoid Valve	[7]



POINT-TO-POINT SUMMARY OF DRAIN CONNECTION



NOTES

- DENOTES FIELD WIRING
- DENOTES INTERNAL WIRING

WIRE COLOR

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

# Installation Wiring

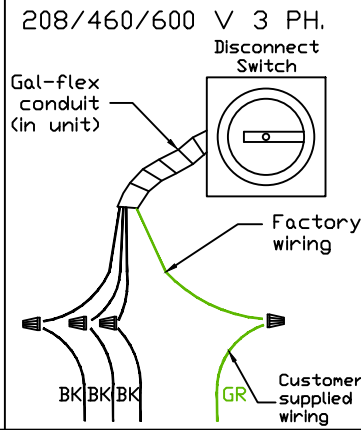
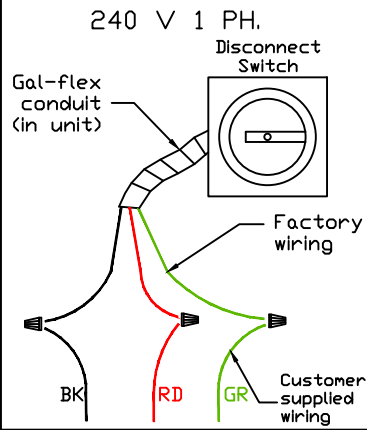
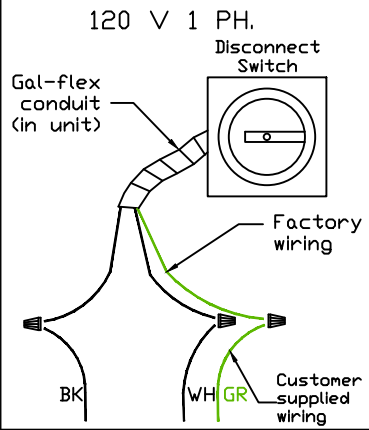
JOB *NAKS Direct Fired MUA*

DRAWING NUMBER

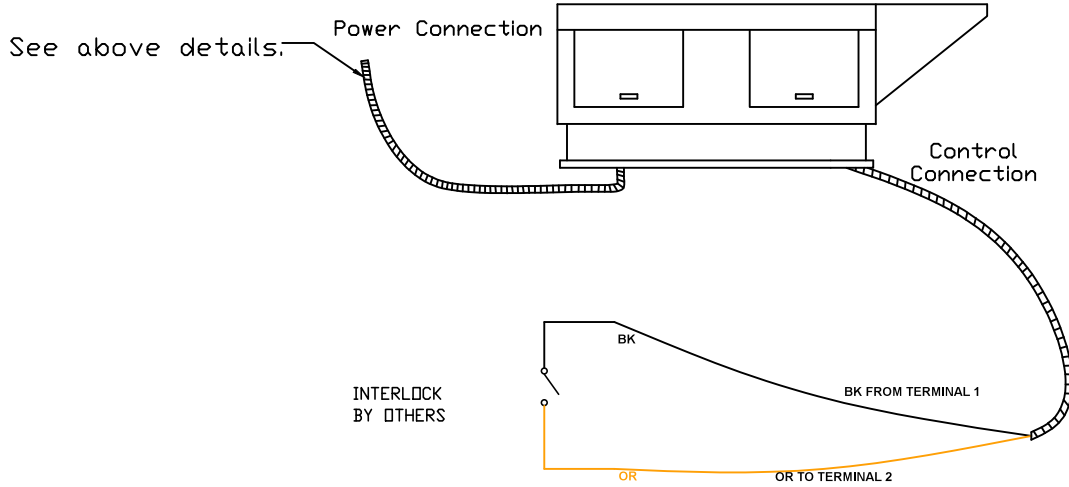
SHIP DATE

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