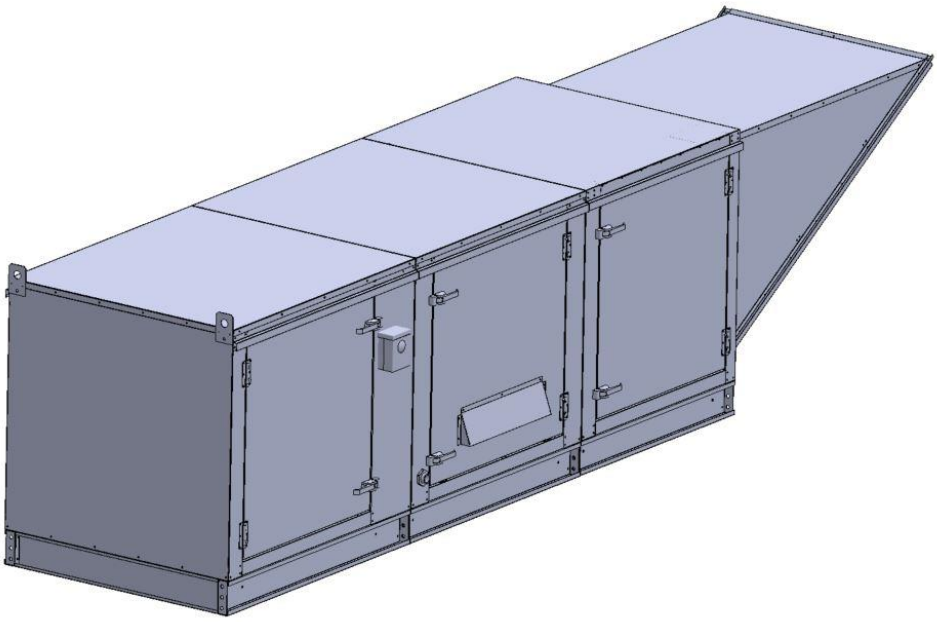
NORTH AMERICAN KITCHEN SOLUTIONS INCORPORATED

Gas-Fired Tempered Make-Up Air Unit / EVAP

Model:

TK5-EVAP-3PH-FF

3-Phase, 208V, 10.00 HP, Belt driven with Motorized Damper and 25” Blower. MAX 14000 CFM’s



NAKS Inc
172 Reaser Ct
Elyria, OH 44035

Tel: (440) 365-4567
Fax: (440) 365-2100
www.naksinc.com

TK5-2000 Direct Fired EVAP (2684 lbs.)

Supply Motor:
Model DTP0104, 10.000 HP, 3 Phase, 208 V, 60Hz, 27.0 FLA, ODP, Premium (E-Plus3) Eff.

Supply Motor Pulleys:

Part Type	Qty.	Browning #	Turns Out
Belt	2	BX103	
Blower Pulley	1	2B5V136	
Bushing	1	B-2 3/16	
Motor Pulley	1	2VP60 x 1-3/8	2.5

Burner:
Min Output BTU: 73,333 BTU/Hr
Max Output BTU: 2,200,000 BTU/Hr
Size: 48" long
Gas Type: Natural

Supply Performance:
Volume: 14000 cfm Volume Range: 10000-14000 cfm
RPM: 682
TS: 4464 ft/min
SP: 1.133" w.g.
0.500" Ext. + 0.597" Int. + 0.036" Opt.
BHP: 9.258

Heating Schedule:
Altitude: 0'
Winter Entering Air Dry Bulb Temp: 0°F
Temp Rise: 100°F
Output BTU: 1512000
Input BTU: 1643478
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: 74°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: 35.0 Amps MCA, 60 Amps MOP, 208 V, 8 AWG Wire Min.
Supply Unit Voltage: 3 phs 208 V 60Hz

Blower:
25" forward curved, centrifugal blower. Permanently lubricated pillow block ball bearings. Enamel finish. 10000-25000 CFM. 2 3/16" x 54-1/2" Shaft. 1000 maximum RPM. Heavy duty angle iron frame. Used in heated and non-heated supply fans.

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

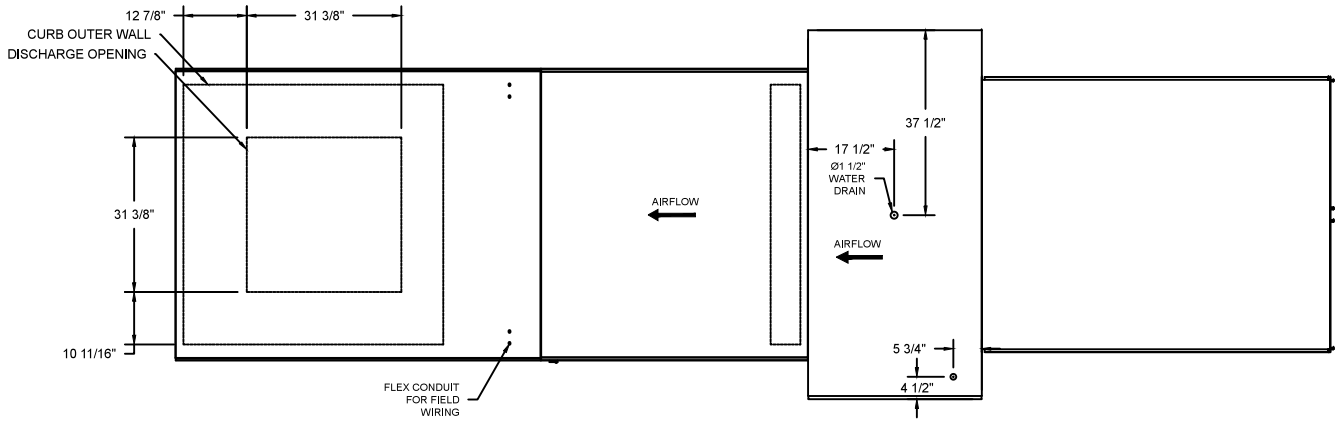
Intake:
Size # 6 Celdek Evaporative Cooler for Size # 5 Modular Heater. 74.822" Wide x 105.238" Long x 58.375" High. Includes intake hood with filters. For outdoor installation. Use with water softener recommended.

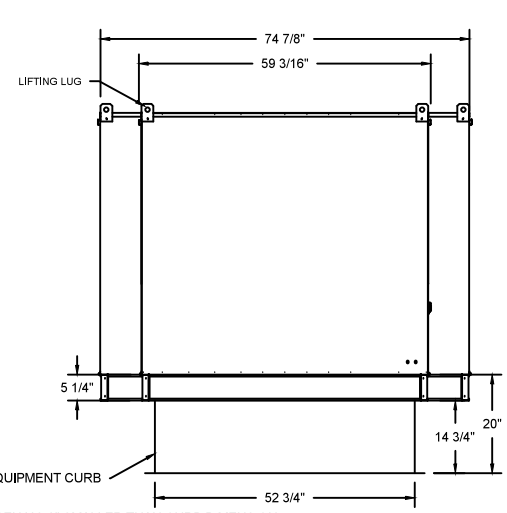
Filters:
8x MV EZ Kleen Metal Mesh Filter. 20"x 25"x 2" Used for heater and supply fan intakes. (3416)

Selected Options:
- Motorized Back Draft Damper 43" X 43" for Size 5 Standard & Modular Heater Units w/Extended Shaft, Standard Galvanized Construction, 3/4" Rear Flange, Low Leakage, NFBUPS 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.

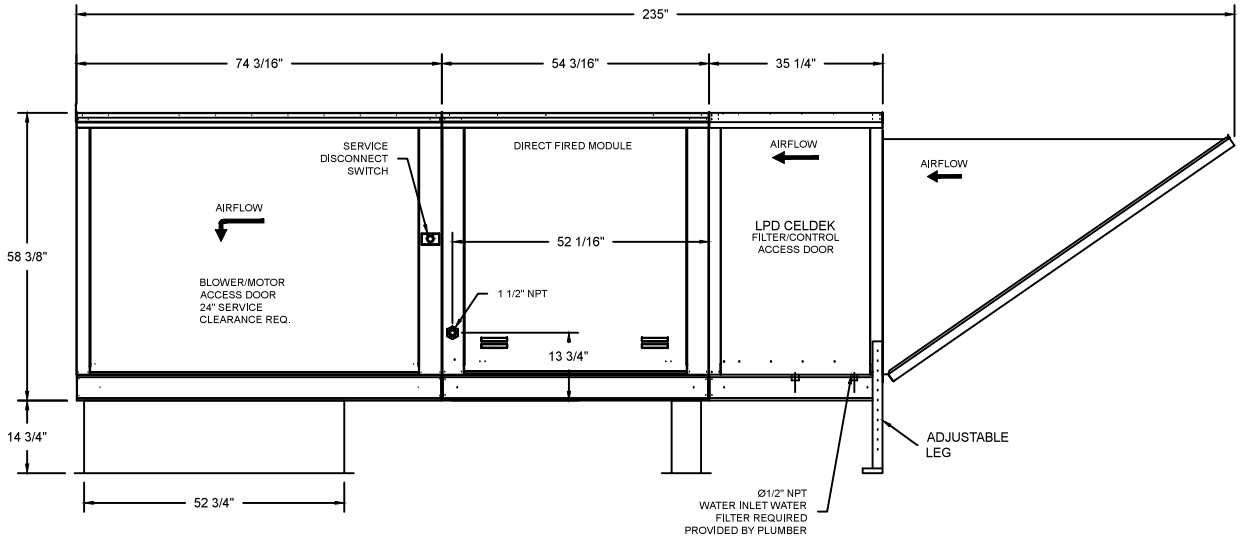
TK5 DIRECT FIRED HEATER WITH EVAP
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 25" BLOWER AND 48" BURNER
2. EVAP COOLER (LPD CELDEK) – W/INTAKE HOOD W/EZ FILTERS
3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT
4. MOTORIZED BACK DRAFT DAMPER 43" X 43" FOR SIZE 5 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, NFBUPS 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. 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.

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.





ROOF OPENING 2" SMALLER THAN CURB DIMENSION.

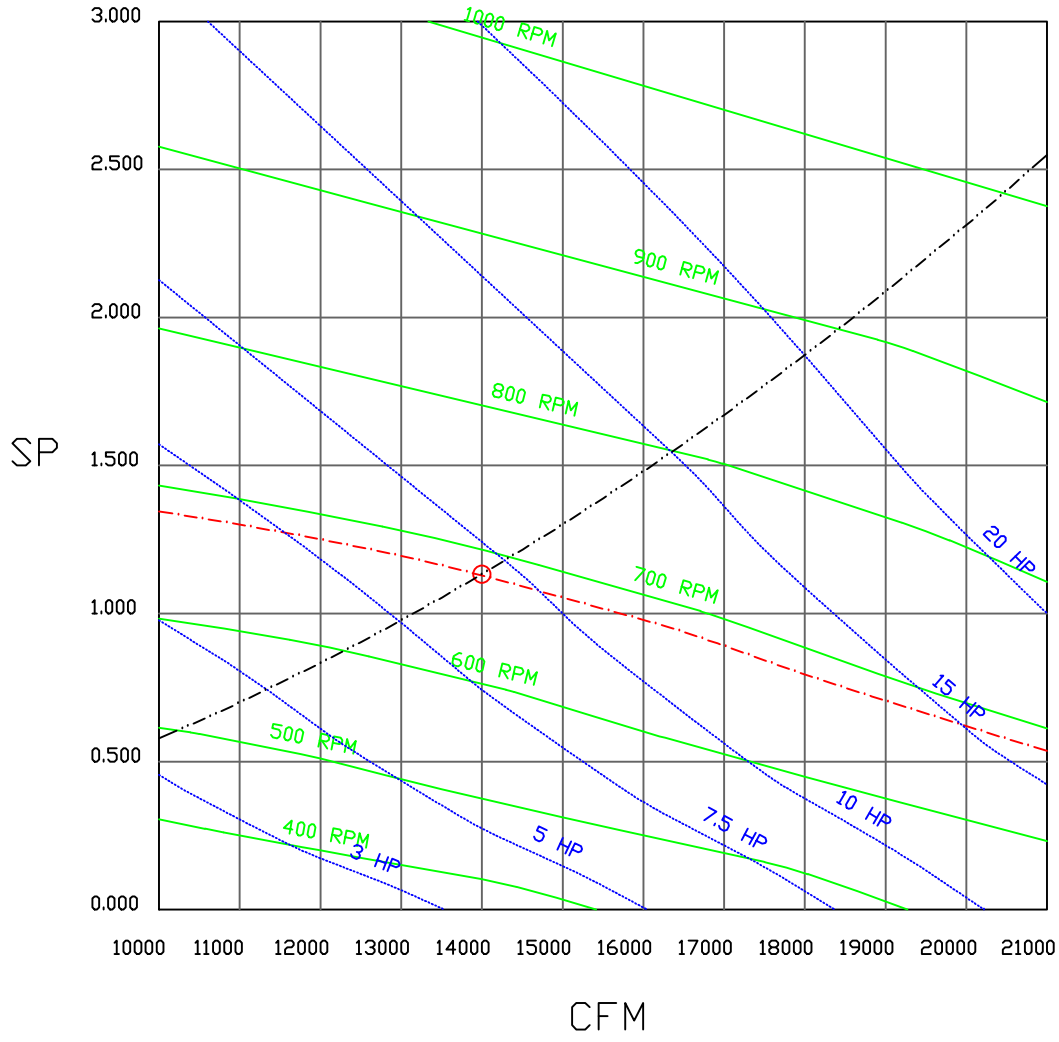


NORTH AMERICAN KITCHEN SOLUTIONS INCORPORATED	JOB	
	LOCATION	
	DATE 08/01/2018	JOB #
	DWG #	DRAWN BY
	REV.	SCALE

(EVAP 14000 10HP/3PH-208V) - HEATER PERFORMANCE CURVES.

14000 CFM, 1.133 SP @ 682 RPM and 9.258 BHP at 0 feet and 100 deg F

* Please note that these curves were adjusted for job specific temperature and altitude.



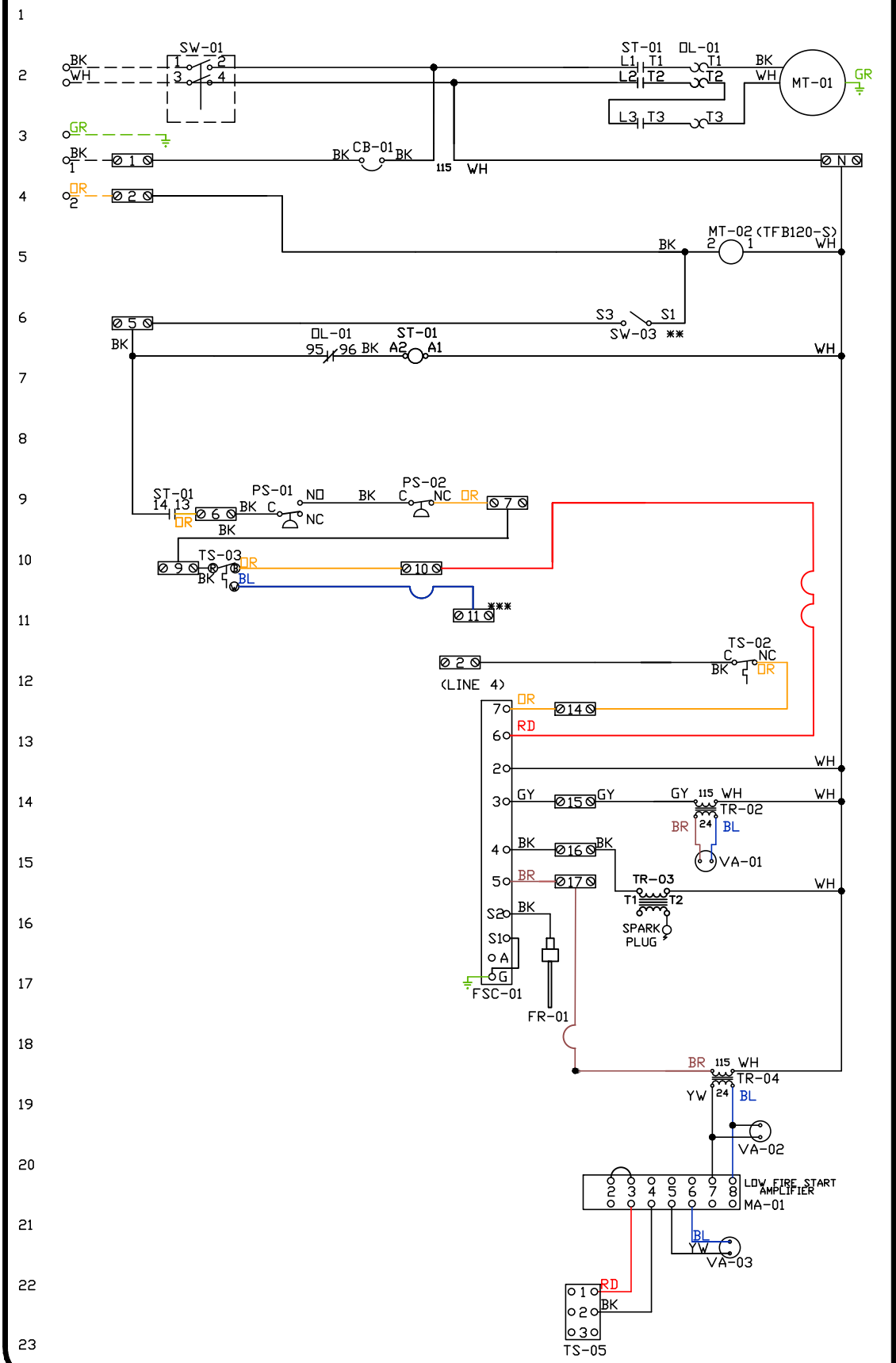
naks NORTH AMERICAN KITCHEN SOLUTIONS INCORPORATED	JOB		
	LOCATION		
	DATE 8/3/2018	JOB #	
	DWG #	DRAWN BY	
	REV.	SCALE 3/8" = 1'-0"	

Direct Fired Heater Wiring

DRAWING NUMBER	SHIP DATE	MODEL **TK 1-5 Series**

JOB *NAKS DIRECT FIRED MUA EVAP*

!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

Component Identification

Label	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]
OL-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 10HP-208V-3P-27.0FLA
CONTACTOR: 100-C30D10
OVERLOAD: 193-T1BC30

ELECTRICAL INFORMATION

MOTOR/CTRL CIRCUIT MCA: 35.0A
MOTOR/CTRL CIRCUIT MOP: 60A

NOTES

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

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

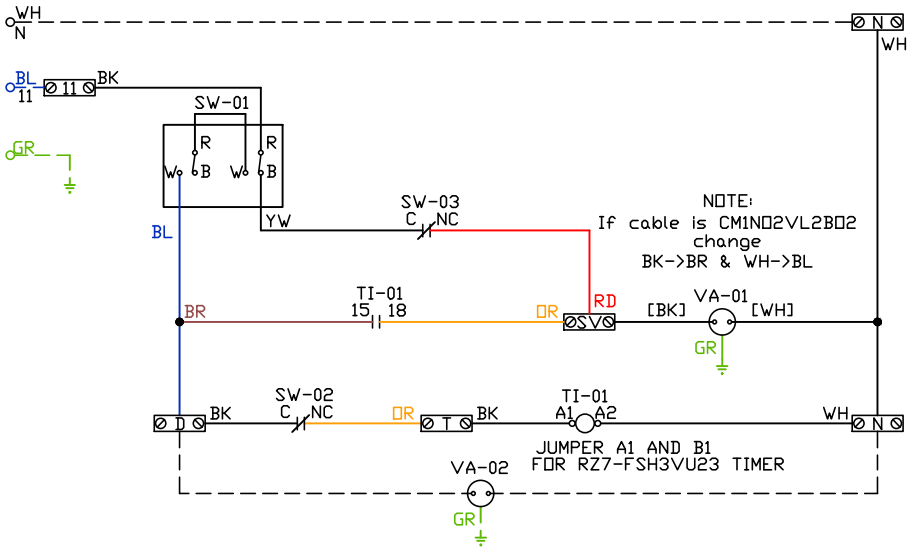
WIRE COLOR

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

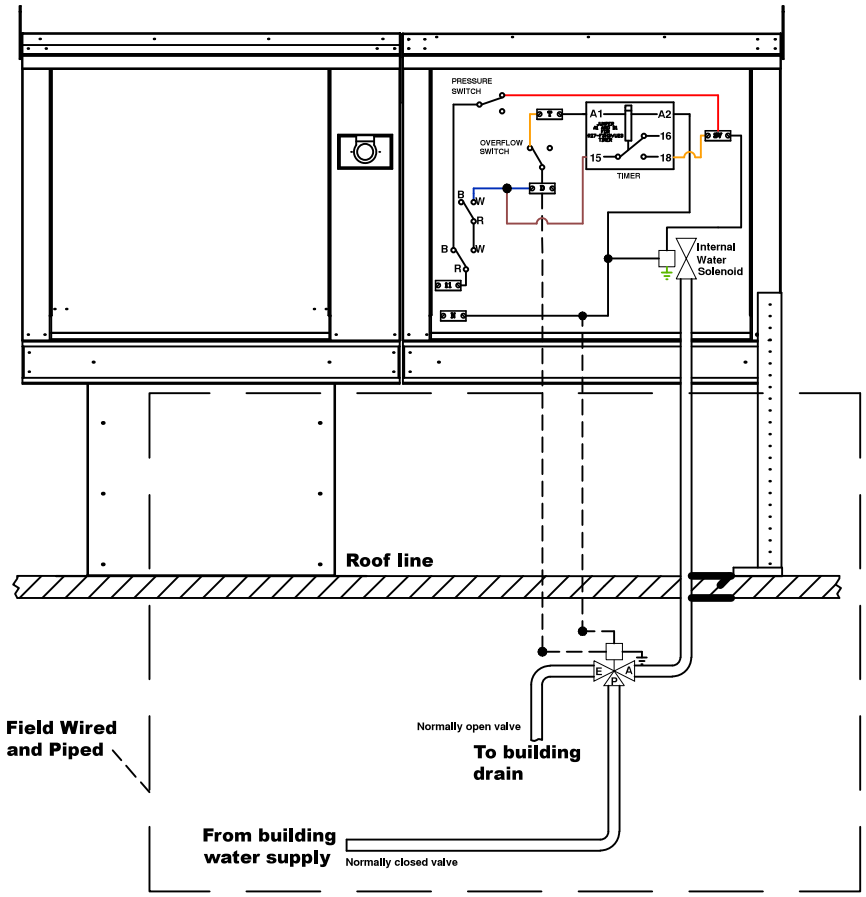
SOCKET STYLE "CLION" RELAY

NO	4	3
NC	2	1
COIL	8	7
COM	6	5

Evaporative Cooler Wiring	JOB NAKS DIRECT FIRED MUA EVAP	
DRAWING NUMBER	SHIP DATE	MODEL **TK 1-5 Series**



POINT-TO-POINT SUMMARY OF DRAIN CONNECTION



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]

NOTES

---- DENOTES FIELD WIRING

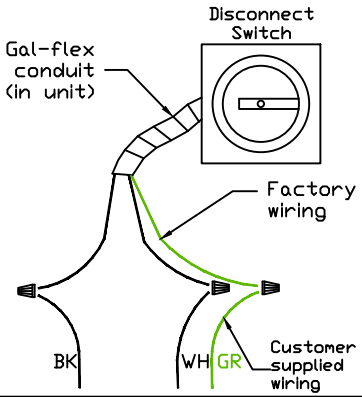
——— DENOTES INTERNAL WIRING

WIRE COLOR

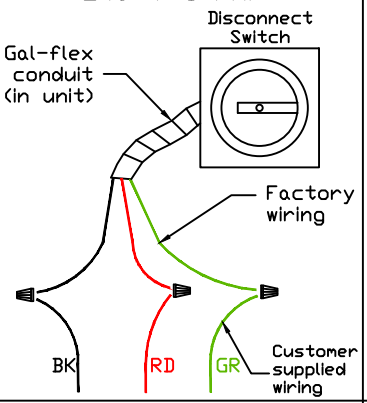
BK - BLACK	YW - YELLOW
BL - BLUE	GR - GREEN
BR - BROWN	GY - GRAY
OR - ORANGE	PR - PURPLE
RD - RED	PK - PINK
WH - WHITE	

Installation Wiring	JOB NAKS Direct Fired MUA	
DRAWING NUMBER	SHIP DATE	MODEL **TK-76**

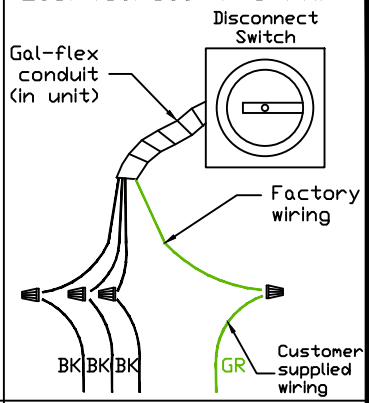
120 V 1 PH.



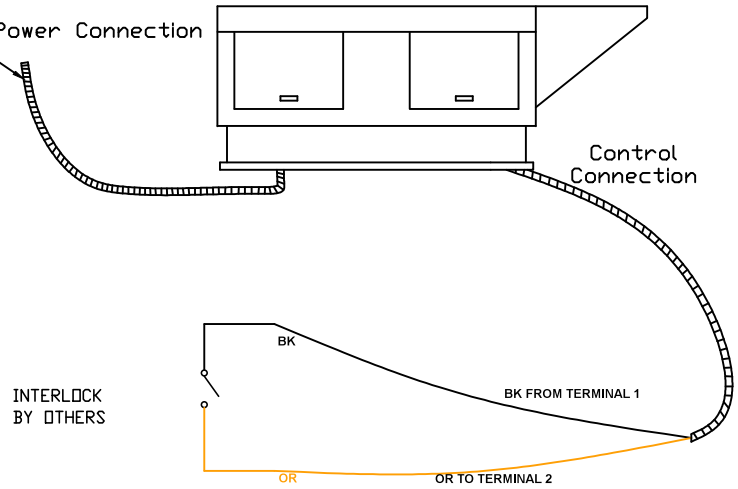
240 V 1 PH.



208/460/600 V 3 PH.



See above details.



Installed Options

Field Wired On/Off Switch

NOTES

WIRE COLOR

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