



Order # 3710407 - NAKS DD TK-RE Utility Sets

Fan #8 TK-RE20DD (354 lbs.)  
Tag: 4000 5hp/1ph-VFD

Direct Drive Upblast Restaurant-Duty Utility Set with a 20.750" Wheel. Includes interlocked disconnect safety switch.

**Exhaust Motor:**

Model DTP0054, 5.000 HP, 3 Phs, 208 V, 60Hz, 15.0 FLA, ODP, Premium (E-Plus3) Eff.

**Exhaust Performance:**

Volume: 4000 cfm  
RPM: 1307  
TS: 7100 ft/min  
SP: 1.000" w.g.  
BHP: 2.259  
Discharge Velocity: 1858 FPM  
Altitude: 0'  
Ambient Temp: 70°F

**Exhaust Installation Information:**

Unit Main Input: 18.8 Amps MCA, 30 Amps MOP, 208 V, 12 AWG Wire Min.  
Exhaust Unit Voltage: 3 phs 208 V 60Hz



**Selected Options:**

- Grease Cup for Utility Sets. Option for Utility Sets.
- VAV (Variable-Air-Volume) Wiring Package for Commercial Fans. Manual Speed Control Variable Frequency Drive Included
- Exhaust Variable Frequency Drive - 10 HP Max., 200/240 V, Three Phase, 29.0 A Max., NEMA 1 Enclosure, (Default Shipped Loose for Field Installation) PART NEEDS PROGRAMMING

***EXHAUST FAN INFORMATION***

FAN UNIT NO.	TAG	FAN UNIT MODEL #	CFM	ESP.	RPM	H.P.	B.H.P.	Ø	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS.)	SDNES
1	4000 5hp/1ph-VFD	TK-RE20DD	4000	1.000	1307	5.000	2.2590	3	208	15.0	1858 FPM	354	23

***FAN OPTIONS***

FAN UNIT NO.	TAG	OPTION (Qty. - Descr.)
1	4000 5hp/1ph-VFD	1 - Utility Set Grease Cup
		1 - VAV Package w/ Manual Control (VFD Included)

***FAN ACCESSORIES***

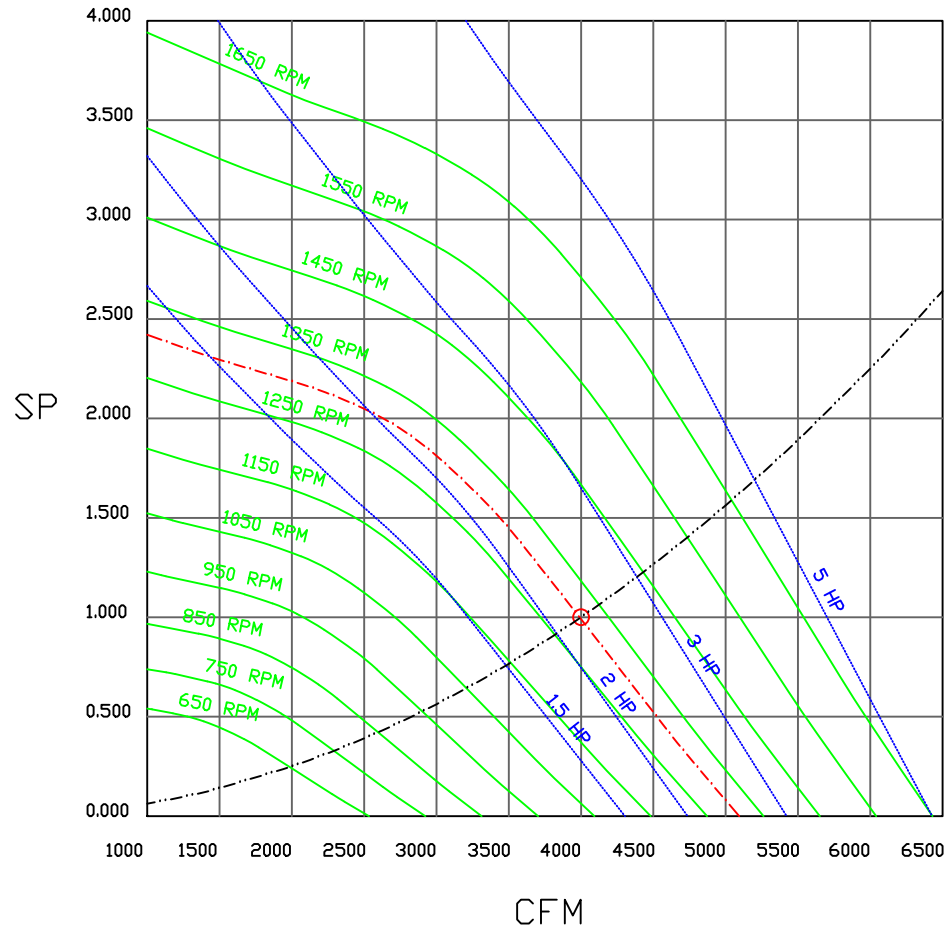
FAN UNIT NO.	TAG	EXHAUST		
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT
1	4000 5hp/1ph-VFD	YES		

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



<4000 5hp/1ph-VFD> - EXHAUST PERFORMANCE CURVES.

4000 CFM, 1 SP @ 1307 RPM and 2.259 BHP at 0 feet and 70 deg F  
 \* Please note that these curves were adjusted for Job specific temperature and altitude.



JOB	
LOCATION	
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REV.	SCALE 3/8" = 1'-0"

# Exhaust Fan Wiring

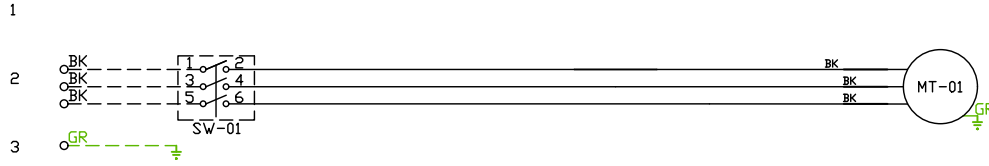
JOB NAKS DD TK-RE Utility Sets

DRAWING NUMBER

SHIP DATE

MODEL **TK-RE20DD**

## Installed Options



**VFD Ships Loose**

## Component Identification

Label	Description	Location
MT-01	Fan Motor	[2]
MT-02	Damper Motor	[2]
SW-01	Main disconnect switch	[2]

**MOTOR INFO**  
 EXHAUST 5HP-208V-3P-15.0FLA  
 VFD PART: ESV752N02TXB

**ELECTRICAL INFORMATION**  
 MOTOR/CTRL MCA: 18.8A  
 MOTOR/CTRL MDP: 30A

**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	

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VFD Wiring

JOB NAKS DD TK-RE Utility Sets

DRAWING NUMBER

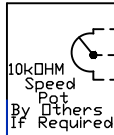
SHIP DATE

MODEL TK-RE20DD

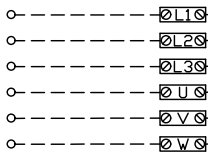
SMV SERIES VARIABLE FREQUENCY DRIVE

Installed Options  
Manual Control

TERMINAL	FUNCTION
1	Digital Input(Start/Stop)
2	Analog Common
5	Analog Input: 0-10 VDC
6	Internal DC Supply for Speed Pot: +10 VDC
25	Analog Input: 4-20 mA
30	Analog Output
4	Digital Reference/Common
11	Internal DC Supply for External Devices
13A	Digital Input: Configurable with P121
13B	Digital Input: Configurable with P122
13C	Digital Input: Configurable with P123
14	Digital Output: Configurable with P142
30	Analog Output: Configurable with P150...P155
16	Relay Output: Configurable with P140
17	
PE	Ground Terminal
L1	3 Phase Input or Single Phase Input
L2	3 Phase Input or Single Phase Input
L3 (N)	3 Phase input (Neutral for 120v)
U	3 Phase AC Motor
V	3 Phase AC Motor
W	3 Phase AC Motor



NOT USED FOR EXHAUST FANS  
OR NON-HEATED SUPPLY FANS  
BURNER CIRCUIT CONTACT



TERMINAL BLOCKS  
LOCATED IN HEATER UNIT  
(IF SINGLE PHASE INPUT, UNIT MAY  
NOT CONTAIN ALL TERMINAL BLOCKS)

EXHAUST FANS AND NON-HEATED  
UNITS DO NOT HAVE TERMINALS

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'.

SUPPLY DRIVE PARAMETER SETTINGS\*

EPH PROGRAM: VAV\_MAKUSE LG\_HP EPH IF >= 15HP)  
P100 (Start Source) = 01 (Terminal Strip)  
P102 = ##Minimum Frequency (Hz)  
P103 = ##Maximum Frequency (Hz)  
(P103 is based on max wheel RPM)  
P110 (Start Method) = 03 (Auto Re-start)  
P140 (Form A (NO) Relay) = 01 (Run)  
P144 (Relay Inversion) = 00 (None)  
P166 (Carrier Frequency) = 00 (4 kHz)  
P171 (Current Limit) = 150 (% of Max I)

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 Voltage) = Set to Motor Voltage  
(Preset@230V) P165 FOR STANDARD DRIVE ONLY  
P167 (Base Frequency) = Calculated Per Fan  
FOR KB PCU ONLY: P300 = 0

When Speed POT is Required the Following  
Parameters Must be Set:  
P101 (Reference Source) = 01 (0-10 VDC)  
P160 (Speed @ 0 VDC Signal) = Min Frequency  
P161 (Speed @ 10 VDC Signal) = Max Frequency

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

Component Identification

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EXHAUST 5HP-208V-3P-15.0FLA  
VFD PART: ESV752N02TXB

ELECTRICAL INFORMATION  
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MOTOR/CTRL MDP: 30A

- NOTES
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  - \_\_\_\_\_ DENOTES INTERNAL WIRING
- WIRE COLOR
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  - BL - BLUE
  - BR - BRDNW
  - OR - ORANGE
  - RD - RED
  - WH - WHITE
  - YW - YELLOW
  - GR - GREEN
  - GY - GRAY
  - PR - PURPLE
  - PK - PINK