

SPL012706-PF-BD Dated: January 27, 2006 Replaces: P/N 39443

Rev. C VI 3/99

# Parts Manual

& operating instructions, programming, error codes & wiring diagrams

## MODEL TCO2114C MIGHTY CHEF CONVEYOR OVEN

Serial # Code
First 4 digits - order of production
Fifth digit - model specific
Sixth and Seventh digit - month of production
Eighth and Ninth digit - year of production



For Owner's Operating & Installation Manual See P/N 43336 Rev, B VI 5/00 on our website

Serial Tag Location

www.middleby.com

email: techsupport@middleby.com

1-847-741-3000 fax 1-847-741-4406 (Parts Department)

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#### Foodservice Equipment

Job	Item#	

## Mighty Chef® **Countertop Conveyor Oven**

Patented



#### New conveyor oven with precision electronics.

- High production with consistent quality
- Precise cook times and temperatures can be entered into patented MenuSelect® control
- Five (5) programmable menus, each has independent time and temperature selections.
- Electronically calibrated for accurately maintaining precise temperatures
- Top and bottom temperatures are individually controlled
- · Safe, cool exterior

#### **Application**

Conveyor ovens are designed to easily and quickly cook, bake or broil with consistent quality results. Ideal for pizza, garlic toast, cookies, sandwiches, pretzels and much more.

#### **General Information**

The conveyor oven is designed for placement on a countertop and can be stacked up to 3 high with stacking brackets. The oven is equipped with a 14" wide, stainless steel chain-link belt. Selecting the direction from the mechanical switch can easily reverse the belt direction. The overall dimensions are 22"W x 54.5"L x 17.6"H, including legs, and the oven chamber is 22"W x 14.5"D x 3"H. The installed weight is 98 lbs. The oven is supplied with crumb trays, conveyor end trays and adjustable heat curtains.

#### Construction

The oven is constructed of welded and reinforced stainless steel. The outer case has a unique air-cooled "cool case", patented design, that is cool-to-thetouch.

TCO 2114



6-30P NEMA Plug 208/240V, 50/60Hz TCO 2114



230V, 50/60Hz

#### Heating

There are upper and lower independent, pre-formed tubular heaters that radiate the heat throughout the cooking chamber. Heaters are controlled by electronic thermostats. The allowable temperature range is 200°F - 599°F (93°C - 315°C), and the cook time range is 30 seconds to 15 minutes.

#### **Electrical**

The oven is wired 208V or 240V, 60 Hz, 1-phase; or 230V, 50 Hz, 1-phase; or 380-400V, 50 Hz, 3-phase. See electrical information chart on back. The oven is rated at 5.0kW on 208V, 230V and 380-400; oven is rated 5.3kW when used on 240V. 208V and 240V ovens are equipped with an attached 6-ft electrical cord and 6-30P NEMA plug; 230V oven is equipped with 1.8 m cord & IEC 309 plug; 380-400V ovens require field wiring.

#### MenuSelect® Control

The patented MenuSelect® control feature allows the operator to preset up to five (5) different times and temperatures into the control. The control accurately executes the times and temperatures automatically, and a ready light glows when the desired temperatures are reached.

#### Warranty

Warranted for one year covering parts and on-site labor under the "No Quibble" warranty (USA only).

#### **Ordering Information**

- 208V, 1-Phase, 50/60 Hz
- 230V, 1-Phase, 50/60 Hz (CE Version)
- 240V, 1-Phase, 50/60 Hz
- 380-400V, 3-Phase, 50 Hz (CE Version)

#### Accessories

T2114Stack - Stacking Bracket









Form 2206



A MIDDLEBY COMPANY

1400 Toastmaster Drive Elgin, Illinois 60120 USA (847) 741-3300 Fax: (847) 741-0015 www.middleby.com

We reserve the right to change specifications and product design without notice. Such revisions do not entitle the buyer to corresponding changes, improvements, additions, or replacements for previously purchased equipment.

Note: All figures in parentheses are in millimeters unless otherwise specified.

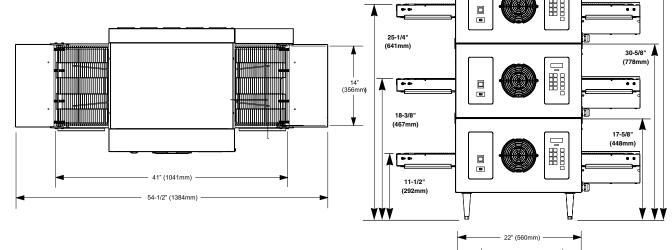
Vertical stacking of Mighty Chef ovens require the Mighty Chef Stacking Kit (P/N T2112STACK)

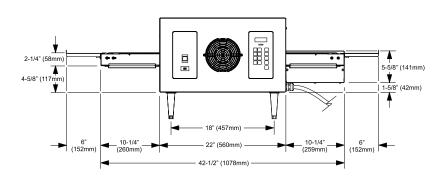
43-5/8"

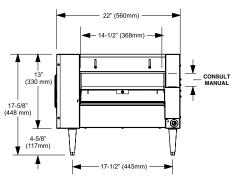
(1108mm

- 2 ovens 1 kit required
- 3 ovens 2 kits required

**Conveyor Oven Mighty Chef®** 







#### **General Information**

Model	Width	Height	Depth	Net Weight	Ship Weight
TCO2114	54.5"	17.7"	22"	98 lbs.	112 lbs
	(1384)	(449)	(559)	44.5 kg	(50.8 kg)

#### **Electrical Information**

			Connected					
Model#	Voltage	Phase	Hz	kW	L1	L2	L3	N
TCO21140063	208	1	60	5.0	24A	24A		
TCO21140066	240	1	60	5.3	22A	22A		
TCO21140035	230	1	50	5.0	21.1A	21.1A		
TCO21140077	380-400	3	50	5.0	.3A	10.5A	10.3A	10.3A





#### **OPERATION INSTRUCTIONS**

1.	TO PROGRAM A NEW PRESET MENU SELECTION:	Perform the procedure in Part E,Programming Preset Menu Selections in this Section. At least one menu selection MUST be programmed before the oven can be operated.
2.	TO TEMPORARILY OVERRIDE A PRE- SET MENU SELEC- TION:	Perform the procedure in Part E,Programming Preset Menu Selections BUT press over instead of Programming Preset Menu Selections BUT press over instead of Programming Preset Menu Selections BUT press over instead of presset Menu Selection, the new set temperature and cook time settings are only temporary. To cancel the temporary menu selection, press any preset menu key or disconnect electrical power to the oven.
3.	TO CHOOSE A PRESET MENU SELECTION:	<ul> <li>a. Press (or any other preset menu key). The display will read (P /). The number in the display (i1î is shown above) will match the menu key that was pressed (1-5).</li> <li>b. Wait for the READY light to illuminate. The light will illuminate after both heating zones reach their set temperatures.</li> <li>c. Load the product onto the conveyor.</li> </ul>
4.	TO COOK A SINGLE PIZZA, OR THE LAST OF A GROUP OF PIZ- ZAS:	<ul> <li>a. Choose a preset menu selection, and wait for the READY light to illuminate.</li> <li>b. Press SINGLE PIZZA and P- / will alternate in the display. The number in the display (ì1î is shown above) will match the current menu selection (1-5).</li> <li>c. Load the pizza product onto the conveyor.</li> <li>IMPORTANT After 1/2 of the cook time has elapsed, the temperature of the top zone will be automatically lowered. After the entire cook time has elapsed, the program will return to its normal top zone temperature.</li> <li>After SINGLE is pressed, the menu selection cannot be changed until the cook time has elapsed.</li> </ul>
5.	TO VIEW THE SET TEMPERATURES:	Press either TOP OR BOTTOM TEMP . The top or bottom set temperature will be displayed for 5 seconds.
6.	TO VIEW HEATING ZONE REFERENCE TEMPERATURES:	Press REF TEMP or REF TEMP or TEMP TEMP. The top or bottom reference temperature will be displayed for 5 seconds.
7. —	TO VIEW THE COOK TIME:	Press COOK TIME . The cook time will be displayed for 5 seconds.

#### SHUTDOWN PROCEDURE

- 1. Switch the Power On/Off (I/O) switch to the OFF (iOî) position.
- 2. Wait for the oven's cooling fan to turn off.
- 3. Disconnect electrical power to the oven at the circuit breaker/fused disconnect.

#### PROGRAMMING PRESET MENU SELECTIONS

#### **IMPORTANT**

Adding a menu program to the oven will overwrite an existing program. DO NOT enter a new menu program over an existing program that you wish to keep!

- Restore power to the oven at the circuit breaker/fused disconnect. 2. Switch the Power On/Off (I/O) Switch to the ON (ilî) position. Pro 9 Press and hold until appears in the display. CHOOSE A MENU **P--** / appears in the display and (or any other preset menu key) until Press and hold SELECTION TO begins to flash. The number in the display (ì1î is shown above) will match the menu key that was **PROGRAM** pressed (1-5). SET TOP TEM-The current top set temperature appears in the display. Press **PERATURE** → as necessary to change the displayed temperature. once increases the ìactiveî (flashing) digit by one. This digit ìrolls overî to Pressing its minimum value if is pressed when the digit shows its maximum value. → once causes the next digit to the right to become the iactiveî (flashing) digit. If the far-right digit is flashing when - is pressed, the far-left digit will flash and become the iactivei digit. **IMPORTANT** The allowed temperature range is 200-599∞F (93-315∞C). If you program a set temperature between 0∞F (or 0∞C) and 99∞F (37∞C), the heater will be set to OFF. If you program a set temperature between 100∞F (38∞C) and 199∞F (92∞C), the temperature will automatically change to 200∞F (93∞C), the display will flash, and a beep will sound to alert you to the temperature change. SET BOTTOM TEM-The current bottom set temperature appears in the display. Press **PERATURE** → as necessary to change the displayed temperature. Press **IMPORTANT** Unless you are following specific time and temperature instructions, the top and bottom zone temperatures should be set WITHIN 50∞F (28∞C) of each other. Greater temperature differences may cause the hotter zone to heat the cooler zone. This can cause inconsistent cooking results. 7. SET COOK TIME **Press** The current cook time appears in the display (minutes: seconds). → as necessary to change the displayed time. and Press **IMPORTANT** 
  - . Press ONE of the following keys:
    - TOP , BOTTOM , OR COOK TIME : Re-enter the top setpoint temperature, bottom set point temperature, or cook time.

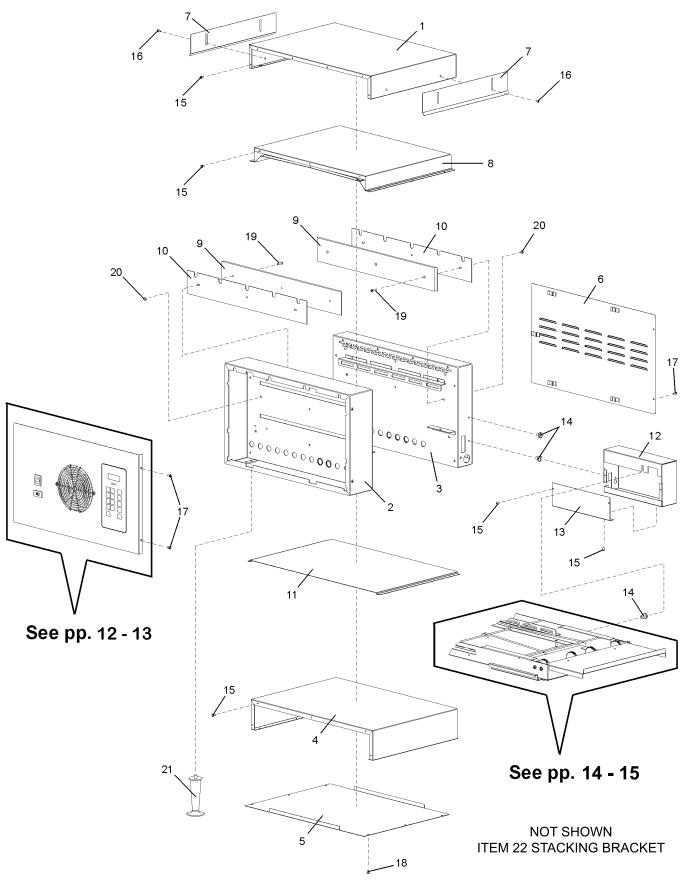
The allowed cook time range is 00:30-15:00. If you program a cook time outside of this range, the time will change to the closest allowed time (00:30 if your time was too short, or 15:00 if it was too long). The display will flash, and a beep will sound to alert you to the changed cook time.

- PROG: Turn off Programming Mode. This returns the oven to normal operation.
- Any other key except ▲ or →: Resume operation, but leave Programming Mode active. Other Preset Menu Selections can be programmed at this time.

#### **DISPLAY MESSAGES AND ERROR CODES**

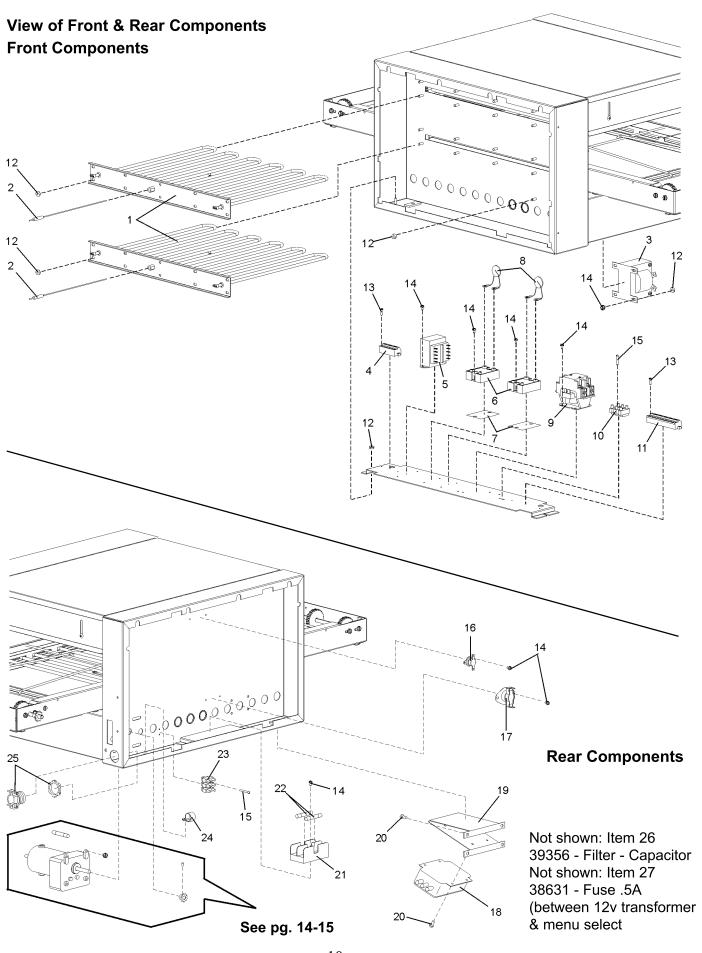
DISPLAY SHOWS	PROBLEM	ACTION
Flashing tem- peratures or cook times dur- ing program- ming, and oven is beeping	Set Temperatures or Cook Time Outside of Allowed Range	Re-enter the program using Set Temperatures and Cook Time within the allowed range. Also, refer to Part E, <i>Programming Preset Menu Selections</i> , in this Section.
OFF	Heating Element turned off	If the element should be on, re-enter the program using Set Temperatures within the allowed range. Also, refer to Part E, <i>Programming Preset Menu Selections</i> in this Section.
	No Menu Selection Chosen	Choose or program a preset menu selection.
E-00	Preset Menu Program Lost	Re-enter the Preset Menu program.
E-01	High Ambient Condition  Temperature inside the control enclosure exceeds 65∞C.  The oven shuts down, then beeps continuously.	Check the cooling fan (centered on the front panel of the oven) for cleanliness and proper operation. If the fan is not running after the oven heats, or the oven remains in a high ambient condition, contact your local Authorized Service Agent.
E-02	Conveyor Runaway The conveyor runs at full speed. The oven shuts down, then beeps continuously.	Check for the proper speed setting by pressing cook time. If the speed setting is correct, and the conveyor continues to run at full speed, contact your Authorized Service Agent.
E-04	Conveyor Loose or Jammed Conveyor is stopped when the speed setting is between 0:15 and 15:00.	Switch the Power On/Off (I/O) Switch to the OFF (iOî) position.  Switch the breaker/fused disconnect to the OFF position. Allow the oven to cool for at least 30 minutes.  CAUTION - HOT  DO NOT ATTEMPT TO FREE A JAMMED CONVEYOR BELT WHILE THE COOKING CHAMBER IS WARM.  SEVERE INJURY MAY RESULT.  If the conveyor is jammed, free the obstruction from the conveyor belt. If the conveyor still will not operate properly after the jam is cleared, OR if the error message appears when the conveyor is NOT jammed, contact your local authorized service agent.
E-35	Top Heating Zone Failure	Contact your local authorized service agent.
E-36	Bottom Heating Zone Failure	Contact your local authorized service agent.
E-40	Heating Zone Temperature High Limit One or both of the heating zones have reached a temperature greater than 315∞C.	Contact your local authorized service agent.

## View of Body Panels and Legs



## Parts for Body Panels and Legs

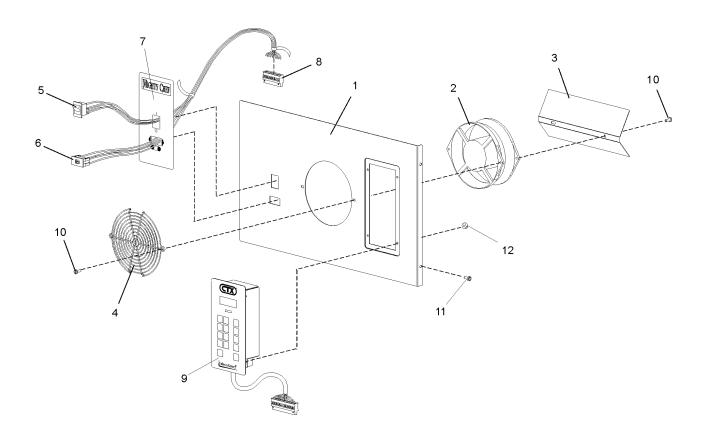
ITEM	P/N	QTY.	DESCRIPTION
1	39010	1	TOP COVER PANEL
2	37360	1	FRONT ENCLOSURE
3	37361	1	REAR ENCLOSURE
4	50127	1	BOTTOM ENCLOSURE (FLOOR PANEL), USED AFTER 2/05
4	36689	1	BOTTOM ENCLOSURE (FLOOR PANEL), USED BEFORE 1/05
5	36701	1	BOTTOM COVER PANEL
6	37303	1	REAR COVER PANEL
7	36695	2	ADJUSTABLE HEAT CURTAIN
8	57265	1	TOP REFLECTOR ASSEMBLY, USED AFTER 2/05
8	37362	1	TOP REFLECTOR ASSEMBLY, USED BEFORE 1/05
9	38251	2	EMITTER
10	38252	2	MICA INSULATION PANEL
11	36687	1	BOTTOM REFLECTOR PLATE (CENTER CRUMB TRAY)
12	36696	1	DRIVE CHAIN COVER PLATE, REAR
13	36699	1	DRIVE CHAIN COVER PLATE, FRONT
14	7007413	3	SCREW, SHOULDER
15	3B20A8801	A/R	SCREW, "F" HEX WSHR HD 8-32 X 3/8"
16	21256-0008	4	SCREW, MS SLT TRS HD 10-32 X 3/8"
17	2000096	4	SCREW, MS SLT TRS HD 8-32 X 1/4"
18	B301A8803	6	SCREW,"AB" PHIL TRS HD 8-32 X 1/4"
19	2000144	6	SCREW, MS PHIL PAN HD 8-32 X 3/4"
20	2001347	6	NUT, KEPS 8-32
21	34979	4	LEG ASSEMBLY, 4" (102mm) WITH SUCTION CUP
22	39130	2	STACKING BRACKET



## **Parts for Front & Rear Components**

ITEM	P/N	QUANTITY				DESCRIPTION
		TCO21 14 (UL) 208V	TCO21 14 (UL) 240V	TCO21 14 (CE) 230V	TCO21 14 (CE) 380-400V	
1	46504	50/60 Hz, 1 Ph <b>2</b>	50/60 Hz, 1 Ph 	50 Hz, 1 Ph 	50 Hz, 3 Ph	HEATER ASSEMBLY, 208V/2500W
1	46505		2	2	2	HEATER ASSEMBLY, 230V/2500W
2	46503	2	2	2	2	THERMOCOUPLE
3	30697	_ 1	1	_ 1	- 1	TRANSFORMER, 230V/115V 50VA
4	37351	1	1	1	1	CONNECTOR, 10-PIN FEMALE
5	35818	1	1	1	1	TRANSFORMER, 230V/12V
6	38469	2	2	2	2	SOLID STATE RELAY, 240V/25A
7	220009	2	2	2	2	GASKET, SILICON
8	3430108 <i>A</i>	. 2	2	2	2	VARISTOR
9	3000639	1	1	1		CONTACTOR, 2-POLE 35A-208/240V
9	3000647				1	CONTACTOR, 4-POLE 50A
10	33406	1	1			TERMINAL BLOCK (FRONT), 3-POLE
11	37789	1	1	1	1	CONNECTOR, 17-PIN FEMALE
12	2001371	A/R	A/R	A/R	A/R	NUT, KEPS 10-32
13	3510A12	4	4	4	4	SCREW, MS SLT PAN HD 5-40 X 1/2"
14	2000023	A/R	A/R	A/R	A/R	SCREW, MS SLT HEX WSHR HD 6-32 X 1/4"
15	39004	4	4	2	2	SCREW, T/S SHLDR THB 10-32 X 3/8"
16	38079	1	1	1	1	TSTAT, SNAP DISC NO (CLOSE 250°F/121°C)
17	30519	1	1	1	1	TSTAT, SNAP DISC NC (OPEN 250°F/121°C)
18	33813			1	1	RFI FILTER
19	38688			1	1	BRACKET, RFI FILTER
20	K1DS195	·		8	8	SCREW, MS SLT PAN HD 5-40 X 1/4"
21	30140	1	1	1	1	FUSEBLOCK
22	28154-000	9 2	2	2	2	FUSE, TYPE CC, 5A/600V
23	33406	1	1			TERMINAL BLOCK (REAR), 3-POLE
23	39258	1	1	1	1	TERMINAL BLOCK (REAR), 5-POLE
24	27276-000	2 1	1	1	1	CABLE CLAMP, NYLON, 5/8"
25	31791	1	1	1	1	CABLE CLAMP, 3/4"
	Shown:					
26	39356				1	FILTER - CAPACITOR
27	38631 37350	1	1	1 	1	FUSE5A (BETWEEN 12V TRANSFORMER & MENU SELECT CORD AND PLUG (NEMA 6-30P)
	30641	· 	<u>.</u> 	1		CORD AND PLUG (IEC 309 STYLE)
	38295	1	1			WIRESET (UL VERSIONS)
	38705			1		WIRESET (CE 230V 1 Ph VERSION)
	38797				11 1	WIRESET (CE 380-400V 3 Ph VERSION)

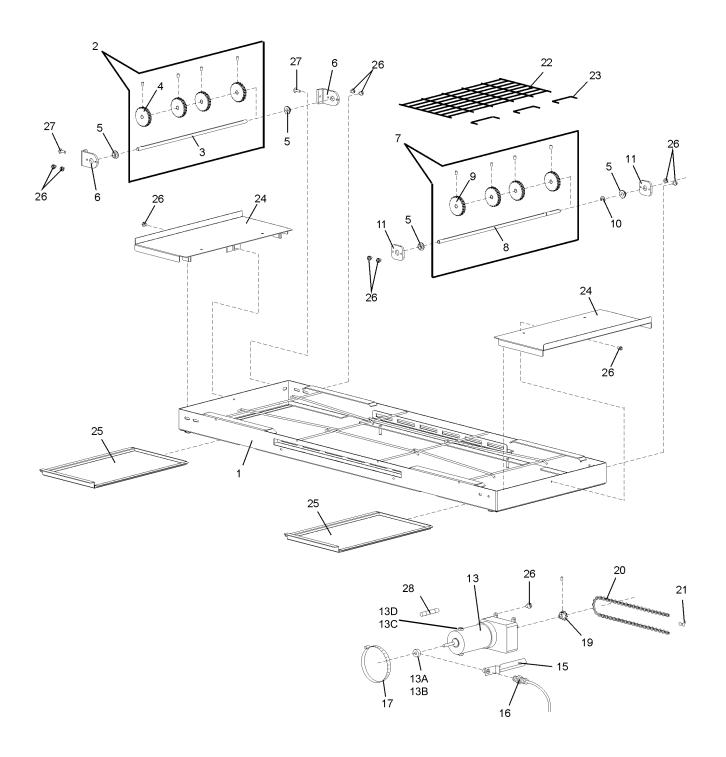
## **View of Front Panel and Control Components**



## **Parts for Front Panel and Control Components**

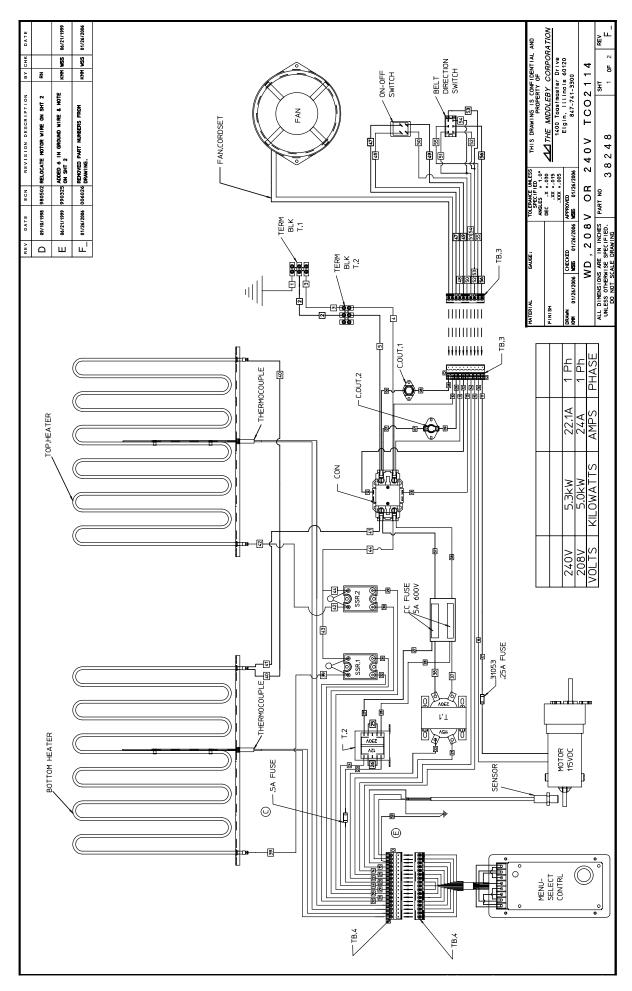
ITEM	P/N	QTY.	DESCRIPTION
1	37961	1	FRONT PANEL
2	38471	1	COOLING FAN
3	38276	1	COOLING FAN AIR DEFLECTOR
4	31497	1	COOLING FAN GRILL - 6" DIAMETER
5	35824	1	POWER ON/OFF (I/O) SWITCH
6	37646	1	CONVEYOR REVERSING SWITCH
7	45402	1	DECAL, SWITCH LABELS, SELF-ADHESIVE
8	38214	1	CONNECTOR, 10-PIN MALE
9	37349	1	MENUSELECT® CONTROL
10	220282	4	SCREW, SLT TRS HD 10-32 X 1/2", BLACK
11	2000096	2	SCREW, MS SLT TRS HD 10-32 X 3/8"
12	2001347	4	NUT, KEPS 8-32

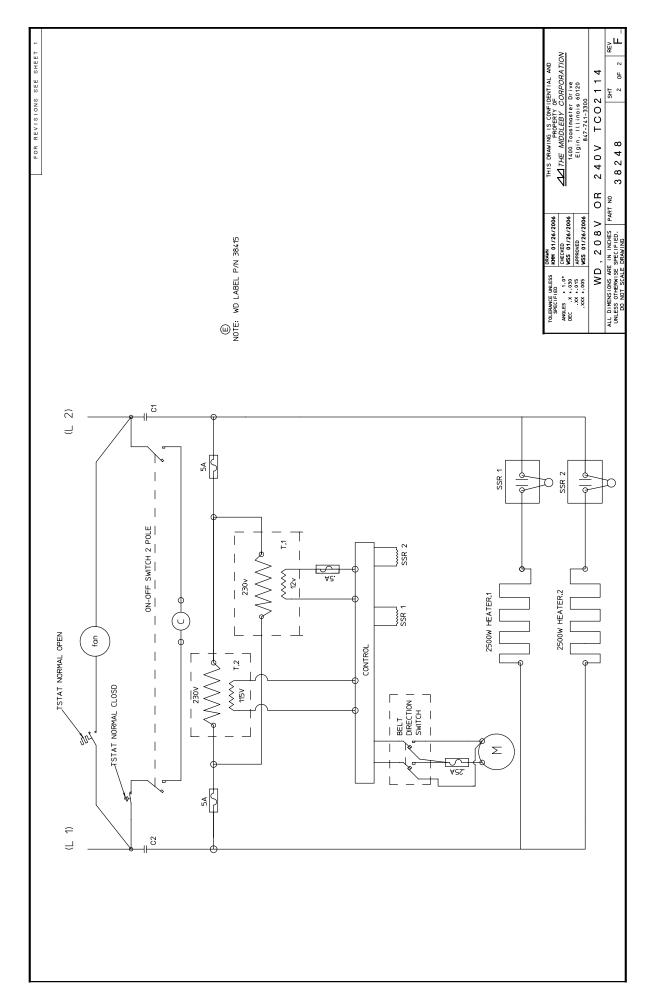
## **View of Conveyor System**

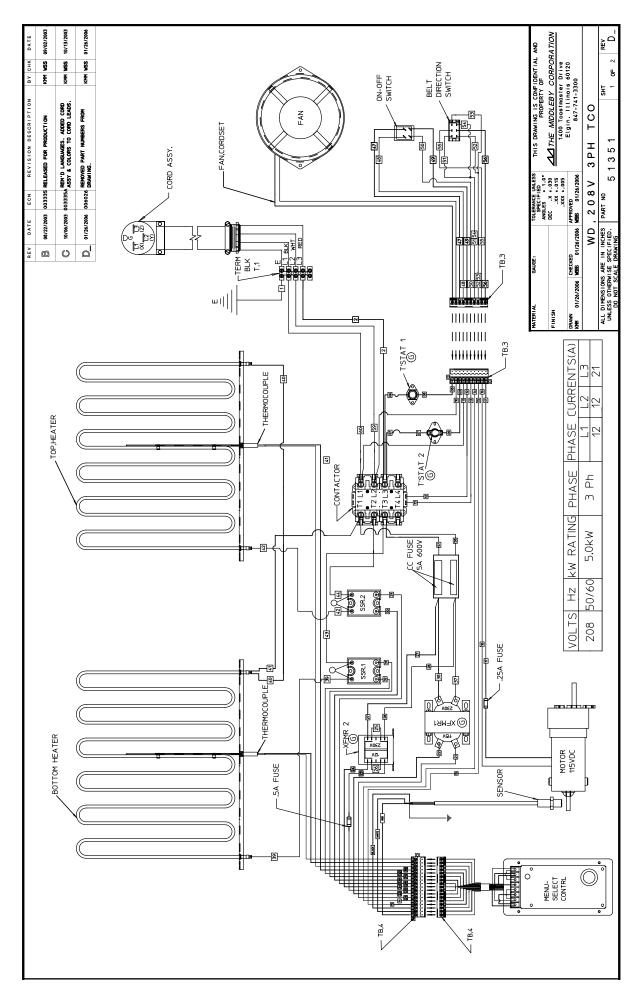


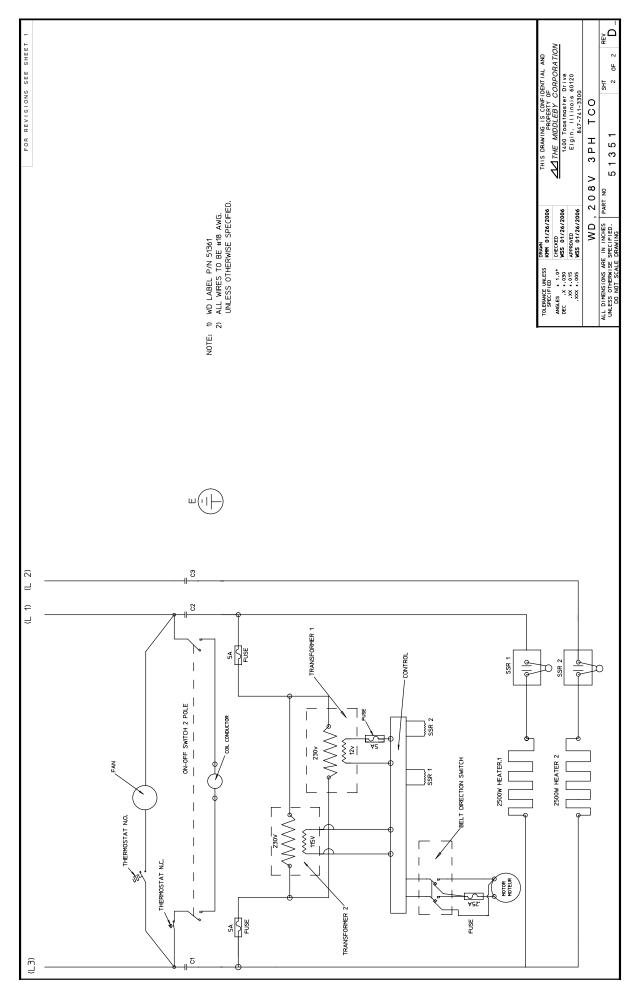
## **Parts for Conveyor System**

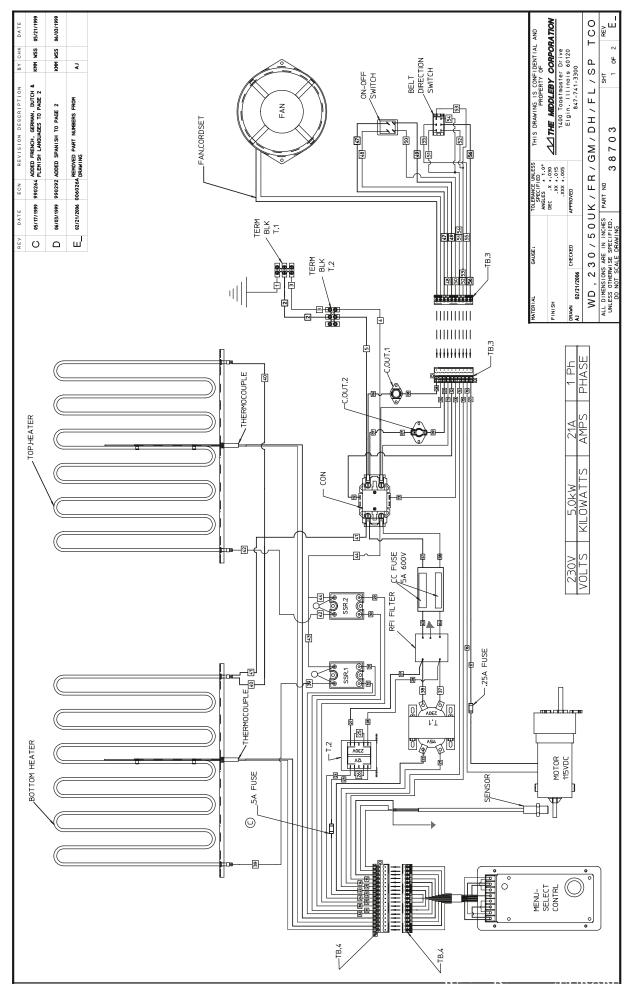
ITEM	P/N	QTY.	DESCRIPTION
1	37309	1	CONVEYOR FRAME
2	37316	1	IDLER SHAFT ASSEMBLY
3	36745	1	IDLER SHAFT
4	37950	4	SPROCKET W/SET SCREW
5	36742	4	BUSHING
6	36729	2	IDLER BEARING BLOCK/TENSIONER
7	37315	1	DRIVE SHAFT ASSEMBLY
8	37314	1	DRIVE SHAFT
9	37950	4	SPROCKET W/SET SCREW
10	3102930	1	RETAINING CLIP, E-RING, 5/16"
11	36733	2	DRIVE BEARING BLOCK
12	34129	1	SPROCKET, DRIVE SHAFT, 12T W/SET SCREW
13	58390	1	MOTOR, CONVEYOR DRIVE WITH 2-POLE MAGNET
13A	39002	1	MAGNET 2-POLE
13B	310-0017	1	ADHESIVE
13C	300-2757	1	CONVEYOR DRIVE MOTOR- ONLY
13D	58484	1	KIT, 2 BRUSHES & 2 CAPS
13E	30153	1	BRUSH, SOLD INDIVIDUALLY, QTY 2 REQUIRED
15	22450-0248	1	BRACKET, SENSOR MOUNTING
16	38185	1	PICKUP SENSOR ASSEMBLY
17	220416	1	CLAMP, SENSOR MOUNTING
19	38216	1	SPROCKET, DRIVE MOTOR, 10T W/SET SCREW
20	39003	1	DRIVE CHAIN, #25, COMPLETE
21	3101212	1	MASTER LINK, #25
22	38247	1	CONVEYOR BELT, COMPLETE (7 FT./2.13m)
23	38246	3	MASTER LINK, CONVEYOR BELT
24	38257	2	END TRAY
25	36686	2	CRUMB TRAY
26	2000177	A/R	SCREW, MS SLT HEX WSHR HD 10-32 X 1/4"
27	35817	2	SCREW, TRS HD 10-32 X 5/8" SS
28	31053	1	FUSE .25A

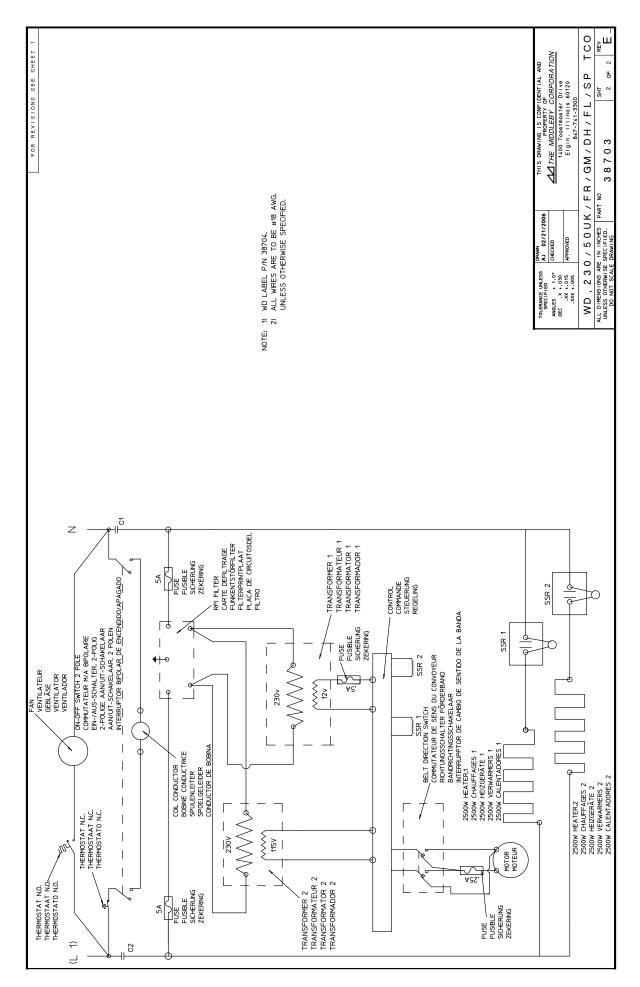


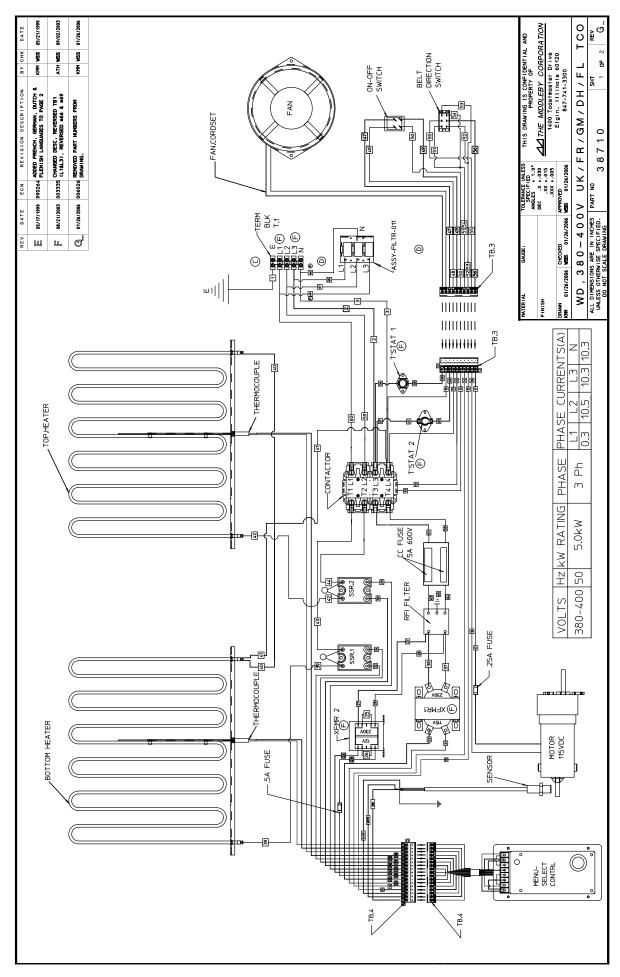


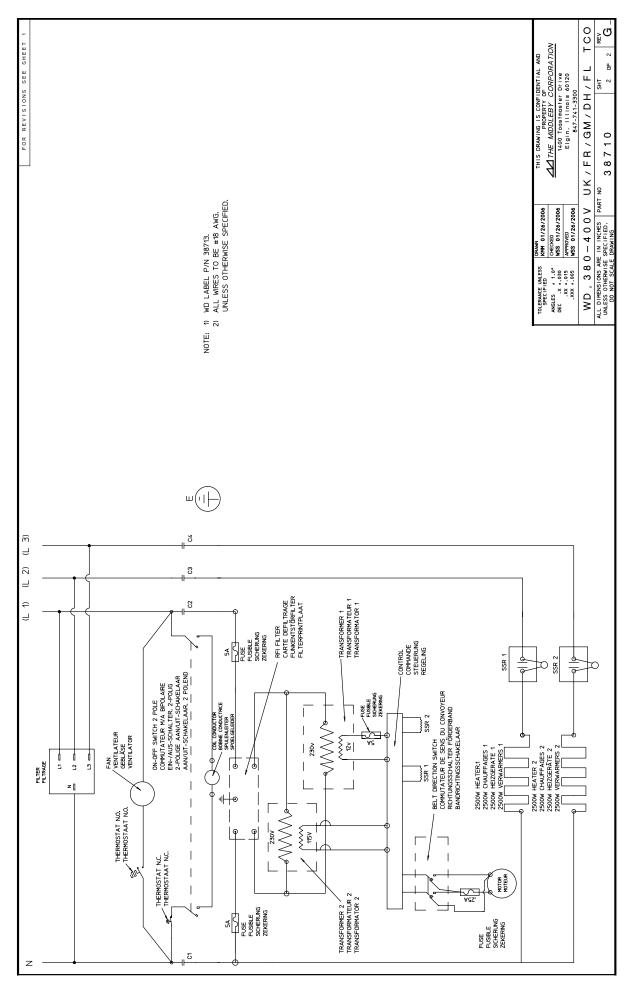


















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