

# Service & Parts Manual

## Convotherm Combination Oven-Steamer

**MODELS:** Gas 20.20



OGS-20.20



OGB-20.20



Enodis

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# FOR THE INSTALLER

## FOR YOUR SAFETY

Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

## WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.

## NOTICE

Post instructions to be followed if the user smells gas.  
Display the instructions in a prominent location.  
All users of this equipment must understand the instructions.  
Obtain the instructions from the local gas supplier.  
Failure to follow the instructions if there is a gas leak can cause death, injury, and/or property damage.

## WARNING

**Disconnect power at the main external power switch before servicing or repairing a Combi. Failure to disconnect power can result in death, injury, and property damage.**

**ALL SERVICE MUST BE PERFORMED BY A QUALIFIED CLEVELAND RANGE AUTHORIZED TECHNICIAN.**

## WARNING

**Do not connect the Combi Oven-Steamer drain connection to any drain material that cannot sustain 140° Fahrenheit. Using drain material that cannot withstand 140° Fahrenheit can result in injury, equipment damage, and property damage.**

This Installation Manual is a part of your new Combi Oven-Steamer. You must keep and maintain it for the entire life span of your Combi and pass it on to the next owner of the Combi.

## KEEP THIS MANUAL FOR REFERENCE

This manual may be subject to new technical developments, modifications, and unforeseen errors.

**DO NOT OPERATE OR ATTEMPT TO OPERATE THIS APPLIANCE OR ANY ACCESSORIES WITHOUT READING COMPLETELY AND FULLY UNDERSTANDING THIS MANUAL**

**For caster equipped Combis: Per separate instructions, connect the strain relief (restraining device) and complete any remaining installation procedures BEFORE starting the Combi.**

**Convotherm by Cleveland Combi Oven-Steamers are intended for other than household use.**

# Cleveland STATEMENT OF POLICIES

## LIMITED WARRANTY

CLEVELAND RANGE products are warranted to the original purchaser to be free from defects in materials and workmanship under normal use and service for the standard warranty period of one year from date of installation or 18 months from date of shipment, whichever comes first.

CLEVELAND RANGE agrees to repair or replace, at its option, f.o.b. factory, any part which proves to be defective due to defects in material or workmanship during the warranty period, providing the equipment has been unaltered, and has been PROPERLY INSTALLED, MAINTAINED, AND OPERATED IN ACCORDANCE WITH THE CLEVELAND RANGE OWNER'S MANUAL.

CLEVELAND RANGE agrees to pay any FACTORY AUTHORIZED EQUIPMENT SERVICE AGENCY (within the continental United States, and Hawaii) for reasonable labor required to repair or replace, at our option, f.o.b. factory, any part which proves to be defective due to defects in material or workmanship, during the labor warranty period. This warranty includes travel time not to exceed two hours and mileage not to exceed 50 miles (100 miles round-trip), BUT DOES NOT INCLUDE POST START-UP, TIGHTENING LOOSE FITTINGS, MINOR ADJUSTMENTS, MAINTENANCE, CLEANING OR DESCALING.

The standard labor warranty allows factory payment of reasonable labor required to repair or replace such defective parts. Cleveland Range will not reimburse the expense of labor required for the repair or replacement of parts after the standard warranty period, unless an Extended Labor Warranty Contract has been purchased to cover the equipment for the balance of the warranty period from the date of equipment installation, start-up, or demonstration.

PROPER INSTALLATION IS THE RESPONSIBILITY OF THE DEALER, THE OWNER-USER, OR INSTALLING CONTRACTOR, AND IS NOT COVERED BY THIS WARRANTY. Many local codes exist, and it is the responsibility of the owner and installer to comply with these codes. Cleveland Range equipment is built to comply with applicable standards for manufacturers, including UL, ANSI, NSF, ASME/Ntl. Bd., CSA, and others.

BOILER (Steam Generator) MAINTENANCE IS THE RESPONSIBILITY OF THE OWNER-USER AND IS NOT COVERED BY THIS WARRANTY. The use of good quality feed water is the responsibility of the Owner-User (see Water Quality Recommendations below). THE USE OF POOR QUALITY FEED WATER WILL VOID EQUIPMENT WARRANTIES. Boiler maintenance supplies, including boiler hand hole gaskets, are not warranted beyond the first 90 days after the date the equipment is placed into service. Preventive maintenance records must be available showing descaling per applicable Cleveland Operator Manual for Boiler Proration Program considerations.

### WATER QUALITY RECOMMENDATIONS

TOTAL DISSOLVED SOLIDS	less than	60 parts per million
TOTAL ALKALINITY	less than	20 parts per million
SILICA	less than	13 parts per million
CHLORIDE	less than	30 parts per million
pH FACTOR	greater than	7.5

The foregoing shall constitute the sole and exclusive remedy of original purchaser and the full liability of Cleveland Range for any breach of warranty. THE FOREGOING IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL, OR IMPLIED, INCLUDING ANY WARRANTY OF PERFORMANCE, MERCHANTABILITY, OR FITNESS FOR PURPOSE, AND SUPERSEDES AND EXCLUDES ANY ORAL WARRANTIES OR REPRESENTATIONS, OR WRITTEN WARRANTIES OR REPRESENTATIONS, NOT EXPRESSLY DESIGNATED IN WRITING AS A "WARRANTY" OR "GUARANTEE" OF CLEVELAND RANGE MADE OR IMPLIED IN ANY MANUAL, LITERATURE, ADVERTISING BROCHURE OR OTHER MATERIALS.

CLEVELAND RANGE'S liability on any claim of any kind, including negligence, with respect to the goods or services covered hereunder, shall in no case exceed the price of the goods or services, or part thereof, which gives rise to the claim. IN NO EVENT SHALL CLEVELAND RANGE BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES IN THE NATURE OF PENALTIES.

## GENERAL INFORMATION ABOUT COMBIS

### A. PRODUCT INFORMATION

Cleveland Range, LLC assigns two product identification numbers to each Combi: a model number and a serial number. The model number identifies the product characteristics. The serial number identifies the individual Combi.

#### 1. Model Number

- This manual covers the installation of the OEB and OES model gas powered Combis.
- Model Number Key: "O" stands for the Combi series Oven, "E" or "G" designates Electric or Gas. "B" designates Steam Generator, and "S" designates Spritzer. The first number designates the number of shelves in the oven rack. The second number is either ".10" for 12" X 20" steam table pans or ".20" for 18" X 26" full size sheet pans. For further information, contact your Convotherm by Cleveland sales representative or Cleveland Range.

#### 2. Serial Number and Equipment Record


During manufacture, Combis are assigned individual serial numbers. Please provide the following information when you contact Cleveland Range or a qualified Cleveland Range authorized service representative:

Serial Number \_\_\_\_\_  
(Write the Serial Number of your Combi here.)

Model Number \_\_\_\_\_  
(Write the Model Number of your Combi here.)

#### 3. Product Information Plate

The Product Information Plate on the left side of the Combi lists the model, serial number, gas, electric, and wiring requirements of the Combi. Figure 1-1 illustrates a typical Product Information Plate.

<b>GAS-FIRED</b>	<b>Enodis®</b>	<b>CLEVELAND RANGE, LLC</b> CLEVELAND, OHIO
	MODEL NO	6.20 OGB
	SERIAL NO	WC 62092-05F-02
	OVEN	68,000 BTU PER HR
	STEAM GENERATOR	61,000 BTU PER HR
ANSI Z83.11 <input type="checkbox"/> a	MANIFOLD PRESSURE	FACTORY SET W.C.
• CSA 1.8 <input type="checkbox"/> a-2004	NATURAL GAS	1000 BTU PER CU FT
FOOD SERVICE EQUIPMENT 16SY	FOR USE ON COMBUSTIBLE FLOORS, WITH THE FOLLOWING MINIMUM CLEARANCES TO COMBUSTIBLE AND NONCOMBUSTIBLE CONSTRUCTION.	
	BACK <input type="checkbox"/> 2 IN	RIGHT SIDE <input type="checkbox"/> 2 1/2 IN LEFT SIDE <input type="checkbox"/> 4 IN
	VOLTS <input type="checkbox"/> 120	PHASE <input type="checkbox"/> 1 HZ <input type="checkbox"/> 60 AMPS <input type="checkbox"/> 11.7
CAUTION: FOR SUPPLY CONNECTION USE ONLY COPPER WIRE SUITABLE FOR AT LEAST <input type="checkbox"/> 160 °C		
INTENDED FOR OTHER THAN HOUSEHOLD USE FOR INSTALLATION UNDER VENTILATION HOOD ONLY		

111532 A

Figure 1-1  
Typical Product Information Plate

# INSTALLATION INSTRUCTIONS

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## A. GENERAL

This equipment should be installed only by qualified, professional plumbers, pipe fitters, and electricians.

1. The installation of this Combi must conform with:
  - a. The National Fuel Gas Code, ANSI Z223.1 / NFPA 54 (latest edition), or the Natural Gas and Propane Installation Code CSA B1 49.1 as applicable.
  - b. The National Electrical Code, ANSI/NFPA 70 (latest edition), or the Canadian Electrical Code, CSA C22.2 as applicable.
  - c. The Food Service Sanitation Manual of the Food and Drug Administration (FDA).
  - d. All applicable national, state, and local laws, codes, and regulations.
2. This equipment is to be installed to comply with the applicable federal, state, or local plumbing codes.
3. Installation instructions must be read in their entirety before starting installation of a Combi.
4. Install the Combi according to the policies and procedures outlined in this manual.

### DANGER

Improper installation, adjustment, alteration, service, or maintenance of a Combi, or installation of a damaged Combi can result in DEATH, INJURY, EQUIPMENT DAMAGE, and void the warranty.

**NEVER** install damaged Combis.

**ALWAYS** have qualified Cleveland Range authorized personnel install and service Combis.

5. Inspect the Combi for shipping damage.
  - a. Check carton and packing for shipping damage.
  - b. Note any damage on the shipping paperwork as soon as the carton arrives.
  - c. Unpack the Combi and check for shipping damage.
  - d. If the Combi is damaged or damage is suspected:
    - 1) Inform your dealer at once.
    - 2) Inform Cleveland Range in writing within 3 days.
    - 3) Submit a Damage Claim to the Shipper.

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## . INSTALLATION OF THE COMBI – General Instructions

General Instructions:

1. Select the Combi's operating location.
2. Complete the water, drain, and electric lines before positioning and leveling the Combi.
3. Position and level the Combi.
4. Connect the utility lines after positioning and leveling the Combi.
5. Call Cleveland Range at 216-481-4900 for the Free Start-Up Program's Performance Checkout.
6. After Setup and Performance Checkout, the Combi should provide years of reliable operation.

### DANGER

**Improper lifting can result in DEATH, INJURY, AND EQUIPMENT DAMAGE.  
Use enough workers with training and experience lifting heavy equipment to place  
Combis on supporting surfaces, and lift and handle Combis and accessories.**

### DANGER

**Operating an out of level Combi can cause DEATH, INJURY, and EQUIPMENT DAMAGE.  
Combis must be level both front-to-back and side-to-side in all installations.  
NEVER operate an out of level Combi.  
If a Combi is suspected to be out of level, shut it down at once and call you qualified  
Cleveland Range authorized service agency at once.**

### WARNING

All clearance requirements above, below, and around the Combi are the same for non-combustible locations as for combustible locations.  
Failure to maintain required clearances and additional distances as needed can result INJURY and EQUIPMENT DAMAGE.  
Consult manufacturers' literature, and sales and service agencies as needed.

---

## C. SPECIAL INSTRUCTIONS FOR CASTER EQUIPPED COMBI STANDS AND COMBIS

1. Read all instructions before beginning installation.
2. Level the floor if needed.
3. **NOTE:** Combis on caster-equipped stands have less adjustment for level than adjustable foot equipped stands.
4. The front wheels of caster-equipped stands and Combis have locks. Check the caster locks for function and position before installation.
5. Follow the separate instructions included with the Stand, Stacking Kit, or Caster Kit.
6. Make sure the Stand, Stacking Kit, or Caster Kit matches the Combi(s).
7. Use only genuine Cleveland Range Stands, Stacking Kits, Caster Kits, and replacement parts.
8. Use of Stands, Stacking Kits, Caster Kits, and replacement parts other than genuine Cleveland Range Stands, Stacking Kits, and Caster Kits and replacement parts can result in injury and / or catastrophic equipment failure, and voids the Warranty.
9. The appliance must be secured to building structure, to prevent any strain on the utility connections, and to help reduce the risk of electric shock.
10. The strain relief (restraining device) must be installed to limit the movement of the appliance without depending on the connector and the quick-disconnect device or its associated piping (gas, water, or electric). See separate instructions for attachment location and other details.
11. Connect the strain relief (restraining device) BEFORE starting the Combi
12. If the strain relief (restraining device) must be disconnected, it must be reconnected after the Combi has been returned to its originally installed position BEFORE restarting the Combi.
13. Prepare the installation location as described in the Combi Installation Manual.
14. For GAS (OGB, OGS) Combis: The installation of the gas supply shall be made with a connector that complies with the Standard for *Connectors for Movable Gas Appliances*, ANSI Z21.69 / CSA 6.16, and a quick disconnect device that complies with the Standard for *Quick Disconnect Devices for Use With Gas Fuel*, ANSI Z21.41 / CSA 6.9.
15. The appliance shall be installed using flexible conduit.
16. Mechanically secure the flexible conduit to the Combi's electrical access hole.





## COMBI OVEN-STEAMER



Featuring the  
**"Advanced Closed  
System +3"**

**GAS Fired – with Steam Generator****Cooking Modes:**

- Hot Air      ■ Retherm      ■ "Delta T" slow cooking
- Steam      ■ "Cook & Hold"      ■ "Crisp & Tasty"
- Combi

**Cleveland Standard Features:**

- "Advanced closed system" with "Crisp & Tasty" de-moisturizing feature
- High efficiency, power burner heating system for hot air and steam generator saves energy and provides fast heat up times
- Fully insulated steam generator and cooking compartment for maximum energy savings
- Polished cooking compartment with coved corners for easy cleaning
- Six (6) 26" x 20" wire shelves
- Hinged fan guard and hinged removable pan racks
- Two (2) speed auto reversing convection fan for even heat distribution
- Space saving, easy to close "Disappearing Door"
- Door latch with safety vent position and wear-free door switch
- Vented, double glass door with integrated door stop
- Trolley with self draining condensate drip pan
- Easy to change, press-fit door seal
- Oven light with shock resistant safety glass
- Multipoint core temperature probe
- Easy to use electronic controls for all operational functions
- Self diagnostic system with full text message display
- Easy to understand menu icons with bright graphics display
- User friendly selector dial
- Exclusive "Smart Key" for selecting option settings
- Digital controls for temperature, time and core probe settings
- Eight (8) "Press & Go" one step, recipe start buttons
- Cook book library for up to 250 stored recipe programs, each recipe capable of 20 steps
- RS 232 connection for controlling one unit with a PC (personal computer)
- Memory module automatically saves unit settings and recipes
- Manual program override feature for operational settings
- Smooth action hand shower for compartment cleaning

**Gas Fired Steam Generator**

- Quiet, high efficiency, power burner heating system
- Built-in automatic rinse system
- Automatic fill and water level control
- Automatic generator drain

**MODEL:** ☐ OGB-20.20

**CAPACITY:** Twenty (20) – 18" by 26" full size sheet pans or  
Forty (40) – 12" by 20" by 2 1/2" steam table pans

ITEM NUMBER \_\_\_\_\_

JOB NAME / NUMBER \_\_\_\_\_

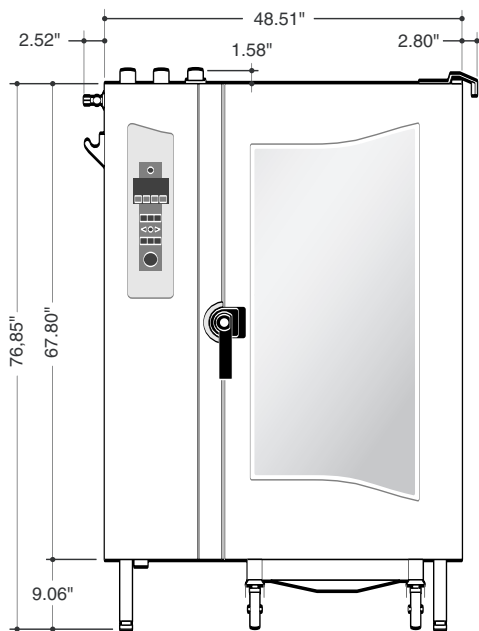
**Short Form Specifications**

Shall be Cleveland Model: OGB-20.20 Combination Convection Oven / Steamer with simple to operate electronic programmable controls for Hot Air, Convection Steam, and Combination cooking modes, "Cook & Hold" and "Delta T" slow-cooking capabilities, "Advanced Closed System" with "Crisp & Tasty" de-moisturizing feature. Multiple cooking stage programs, stored recipe library, multipoint core temperature probe, "Press & Go", one-step recipe start buttons, "Smart Key" for selecting option settings, Two (2) speed auto reversing convection fan. Quiet, high efficiency power burner heating system; steam generator with automatic drain. "Disappearing Door". Capacity for twenty (20) 18" x 26" full size sheet pans, or forty (40) 12" x 20" x 2 1/2" pans.

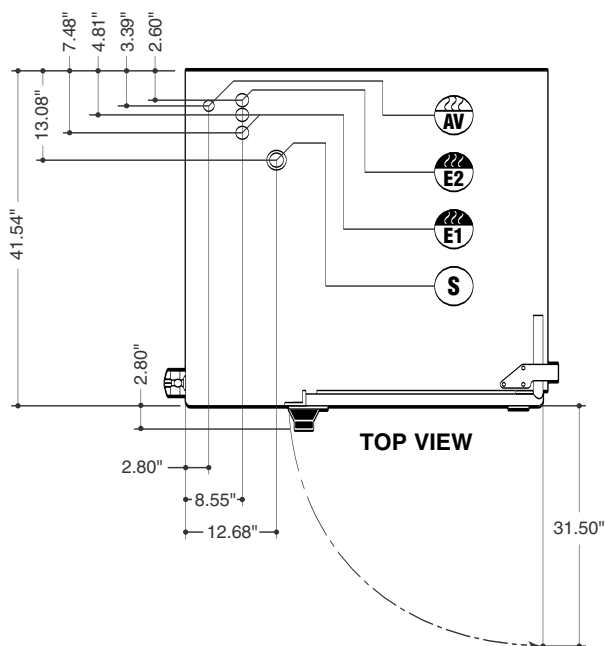
**Options and Accessories**

- ☐ ConvoClean automatic compartment washing system
- ☐ PC-HACCP software for establishing "HACCP controls" and automatic documentation of the cooking process
- ☐ Universal pan-rack system to hold full size sheet pans without the use of wire shelves
- ☐ Lockable cover over operating controls for prison installations
- ☐ USB or RS 485 connection for networking and controlling up to 32 units with a personal computer
- ☐ Propane gas option
- ☐ Flue diverter
- ☐ Pan rack with trolley
- ☐ Plate rack with trolley for banquet operations
- ☐ Thermal cover for plate or pan rack
- ☐ ConvoClean compartment cleaning solution
- ☐ ConvoCare concentrate for compartment rinse cycle
- ☐ "Dissolve" generator descaling solution
- ☐ Chicken Grill Rack
- ☐ 12" x 20" Wire Baskets for frying products
- ☐ Additional 26" x 20" Wire Shelves
- ☐ Pre-heat bridge

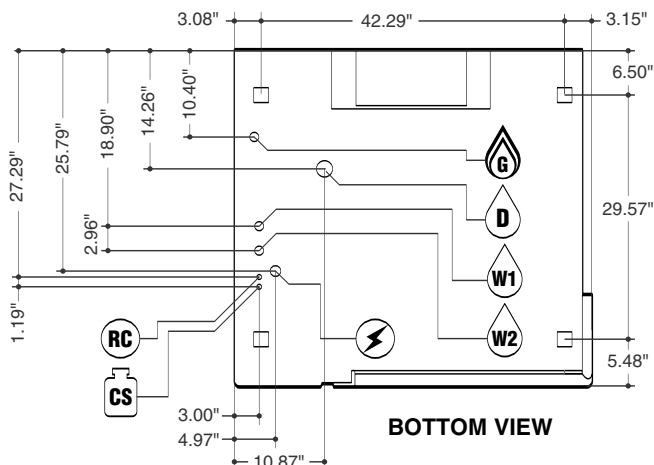
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FRONT VIEW



TOP VIEW



BOTTOM VIEW

#### NOTES:

Cleveland Range reserves right of design improvement or modification, as warranted.  
Many regional, state and local codes exist and it is the responsibility of the owner and installer to comply with the codes.  
Cleveland Range equipment is built to comply with applicable standards for manufacturers.

#### The "Advanced Closed System" offers the following advantages:

- Saves energy
- Automatic moisture level adjustment
- Low heat and steam emission to the kitchen
- Automatically regulated steam injection
- Enables immediate change into the steam mode
- "Crisp & Tasty" demoisturizing function

**Model:** OGB-20.20

**Pan Capacity** [Unit (trolley) has 20 slide rails at 2.64" (67mm) apart]:

- |                                                            |                                                                 |
|------------------------------------------------------------|-----------------------------------------------------------------|
| 20 (20" x 26") full size wire racks                        | 20 (18" x 26") full size sheet pans - <b>on wire racks</b>      |
| 40 (13" x 18") half size sheet pans - <b>on wire racks</b> | 40 (12" x 20" x 2 1/2") steam table pans                        |
| 40 (12" x 20" x 1") steam table pans                       | 40 (12" x 20") frying baskets - ( <b>no wire racks needed</b> ) |

**For Banquet Operations:** Optional Plate Rack holds 122 plates

**Unit Dimensions:** Width - 53.83", Depth - 44.34", Height - 78.43"

**Shipping Dimensions:** Width - 60", Depth - 50", Height - 86"  
(including packaging)

**Shipping Weight:** 970 Lbs (including trolley)

**Required Clearances:** Rear - 2", Left Side - 4", Right Side - 2 1/2"

- Allow for sufficient distance if a "high heat source" (i.e. Broiler) is located next to the unit.
- Allow for sufficient clearance on left side for service access (contact the factory service department for recommendations).
- Installation must comply with all local fire and health codes.

**Agency Approvals:** UL - Gas, UL - Sanitation (NSF Standards)



**Electrical Requirements:** 120 volt, 22.5 amps, 60 Hz, single phase  
Do not connect to a G.F.I. outlet



**Gas Connection:** 3/4" NPT  
**Gas Type:** Natural Gas (Propane optional)  
**Gas Flow Pressure:** Natural Gas - Min. 5.5" WC / Max. 14" WC  
Propane Gas - Min. 11" WC / Max. 14" WC  
**Total Connected Load:** 265,500 BTU (239,000 BTU Propane)  
**Steam Generator:** 132,700 BTU (119,000 BTU Propane)  
**Hot Air:** 265,500 BTU (239,000 BTU Propane)

**Water Connections:** Cold Water (drinking water quality)  
**Flow Pressure:** 30 - 60 PSI  
**Water Inlets:** 3/4" GHT-F (Female Garden Hose Connection)



Treated Water for Steam Generator



Untreated Water for Condenser and Hand Shower



**Drain Connection:** 2" Tube

**Venting:** Exhaust Hood required



Gas Exhaust for Hot Air Heating



Gas Exhaust for Steam Generator



Air Vent



**\*Connection for Cleaning Solution**



**\*Connection for Rinse Cycle**



**Low Pressure Safety Valve**

\*Available as an option



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- Hot Air      ■ Retherm      ■ "Delta T" slow cooking
- Steam      ■ "Cook & Hold"      ■ "Crisp & Tasty"
- Combi

**Cleveland Standard Features:**

- "Advanced closed system" with "Crisp & Tasty" de-moisturizing feature
- High efficiency, power burner heating system
- Fully insulated cooking compartment for maximum energy savings
- Polished cooking compartment with coved corners for easy cleaning
- Six (6) 26" x 20" wire shelves
- Hinged fan guard and hinged removable pan racks
- Two (2) speed auto reversing convection fan for even heat distribution
- Space saving, easy to close **"Disappearing Door"**
- Door latch with safety vent position and wear-free door switch
- Vented, double glass door with integrated door stop
- Trolley with self draining condensate drip pan
- Easy to change, press-fit door seal
- Oven light with shock resistant safety glass
- Multipoint core temperature probe
- Easy to use electronic controls for all operational functions
- Self diagnostic system with full text message display
- Easy to understand menu icons with bright graphics display
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- Cook book library for up to 250 stored recipe programs, each recipe capable of 20 steps
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- Manual program override feature for operational settings
- Smooth action hand shower for compartment cleaning
- Injection system for steam

**Options and Accessories**

- ☐ ConvoClean automatic compartment washing system
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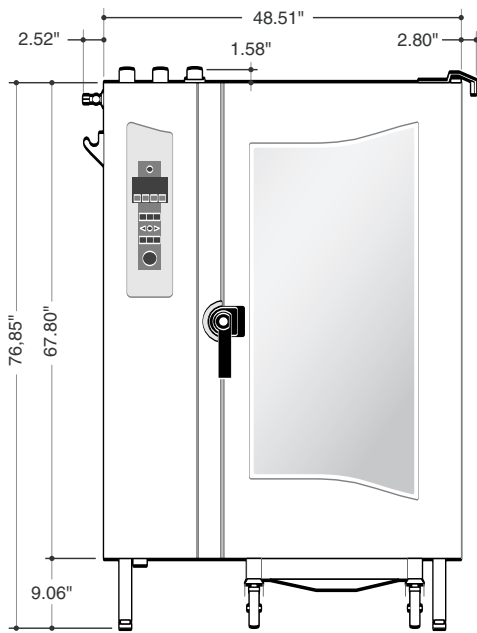
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**Short Form Specifications**

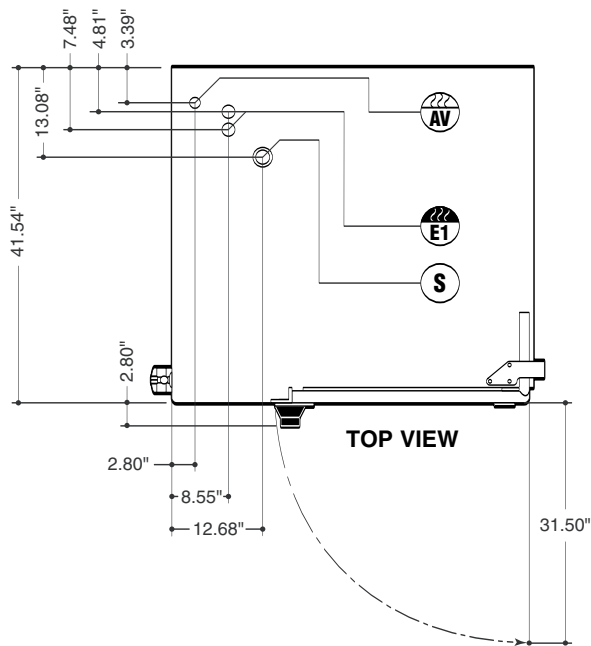
Shall be Cleveland Model: OGS-20.20 Combination Convection Oven / Steamer with simple to operate electronic programmable controls for Hot Air, Convection Steam, and Combination cooking modes, **"Cook & Hold"** and **"Delta T"** slow-cooking capabilities, **"Advanced Closed System"** with **"Crisp & Tasty"** de-moisturizing feature. Multiple cooking stage programs, stored recipe library, multipoint core temperature probe, **"Press & Go"**, one-step recipe start buttons, **"Smart Key"** for selecting option settings, two (2) speed auto reversing convection fan. Quiet, high efficiency power burner heating system; boilerless. **"Disappearing Door"**. Capacity for twenty (20) 18" x 26" full size sheet pans, or forty (40) 12" x 20" x 2 1/2" pans.

- ☐ USB or RS 485 connection for networking and controlling up to 32 units with a personal computer
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- ☐ Flue diverter
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- ☐ Plate rack with trolley for banquet operations
- ☐ Thermal cover for plate or pan rack
- ☐ ConvoClean compartment cleaning solution
- ☐ ConvoCare concentrate for compartment rinse cycle
- ☐ "Dissolve" generator descaling solution
- ☐ Chicken Grill Rack
- ☐ 12" x 20" Wire Baskets for frying products
- ☐ Additional 26" x 20" Wire Shelves
- ☐ Pre-heat bridge

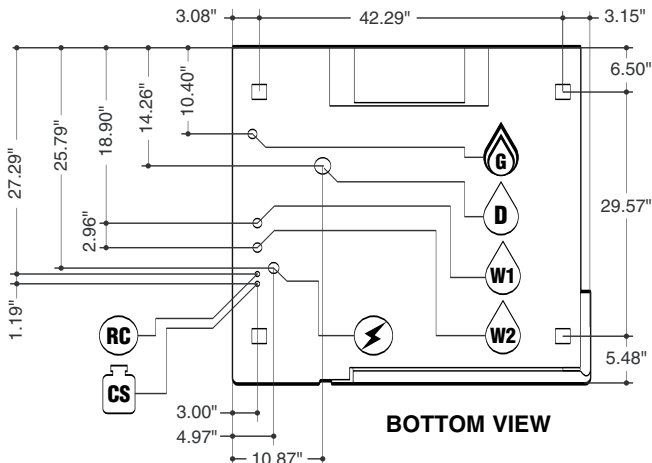
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- Automatically regulated steam injection
- Enables immediate change into the steam mode
- "Crisp & Tasty" demoisturizing function

**Model:** OGS-20.20

**Pan Capacity** [Unit (trolley) has 20 slide rails at 2.64" (67mm) apart]:

20 (20" x 26") full size wire racks      20 (18" x 26") full size sheet pans - **on wire racks**  
40 (13" x 18") half size sheet pans - **on wire racks**      40 (12" x 20" x 2 1/2") steam table pans  
40 (12" x 20" x 1") steam table pans      40 (12" x 20") frying baskets - (**no wire racks needed**)

**For Banquet Operations:** Optional Plate Rack holds 122 plates

**Unit Dimensions:** Width - 53.83", Depth - 44.34", Height - 78.43"

**Shipping Dimensions:** Width - 60", Depth - 50", Height - 86"  
(including packaging)

**Shipping Weight:** 970 Lbs (including trolley)

**Required Clearances:** Rear - 2", Left Side - 4", Right Side - 2 1/2"

- Allow for sufficient distance if a "high heat source" (i.e. Broiler) is located next to the unit.
- Allow for sufficient clearance on left side for service access (contact the factory service department for recommendations).
- Installation must comply with all local fire and health codes.

**Agency Approvals:** UL - Gas, UL - Sanitation (NSF Standards)



**Electrical Requirements:** 120 volt, 22.5 amps, 60 Hz, single phase  
Do not connect to a G.F.I. outlet



**Gas Connection:** 3/4" NPT  
**Gas Type:** Natural Gas (Propane optional)  
**Gas Flow Pressure:** Natural Gas - Min. 5.5" WC / Max. 14" WC  
Propane Gas - Min. 11" WC / Max. 14" WC  
**Total Connected Load:** 265,500 BTU (239,000 BTU Propane)  
**Hot Air:** 265,500 BTU (239,000 BTU Propane)

**Water Connections:** Cold Water (drinking water quality)  
**Flow Pressure:** 30 - 60 PSI  
**Water Inlets:** 3/4" GHT-F (Female Garden Hose Connection)



Treated Water for Steam Production



Untreated Water for Condenser and Hand Shower



**Drain Connection:** 2" Tube

**Venting:** Exhaust Hood required



Gas Exhaust for Hot Air Heating



Air Vent



**\*Connection for Cleaning Solution**



**\*Connection for Rinse Cycle**



**Low Pressure Safety Valve**

\*Available as an option

## CONTROL PANEL BASIC OPERATION

### A. QUICK START GUIDE

**ALWAYS PRE-HEAT THE OVEN CHAMBER!**

1. Switch on with key (1).
2. Select cooking mode with keys (2-5).
3. Press key (6) to start.

**OR**

1. Press key (18) and rotate Selector Dial (23) to set oven temperature.
2. Press key (19) and rotate Selector Dial (23) to set cooking time.

**OR**

1. Press key (20) and rotate Selector Dial (23) to set core temperature.

**ALL**

1. Press key (6) to start the Combi.
2. To change the settings while cooking: press keys (18) OR (19) OR (20) and adjust the settings with the Selector Dial (23).
3. When the buzzer sounds press key (6) or open the door.

NOTES: See "CONTROL PANEL DETAIL VIEW" in Chapter 4, Section B for detailed descriptions of control panel functions.



**Figure 4-1a  
Control Panel**

## B. CONTROL PANEL DETAIL VIEW

**Note:** Item numbers correspond to numbers on the control panels in Figure 4-1b

### 1. ON/OFF

When the Combi is turned ON:

- Self-diagnosis is performed.
- Oven light turns on.
- Steam generator fills and heats (OEB and OGB models).

## Cooking Modes

### 2. Steam

- Oven temperature is continuously variable between 86°F and 248°F.

### 3. Combi Hot Air and Steam

- Oven temperature is continuously variable between 212°F and 482°F.

### 4. Hot Air

- Oven temperature is continuously variable between 86°F and 482°F.

### 5. Retherm

- Oven temperature is continuously variable between 248°F and 320°F.

### 6. Start/Stop

- Start cooking modes and recipes.
- Stop the cooking activity.
- Escape or Exit Smart Key functions

## Programming / Help

### 7. Cookbook

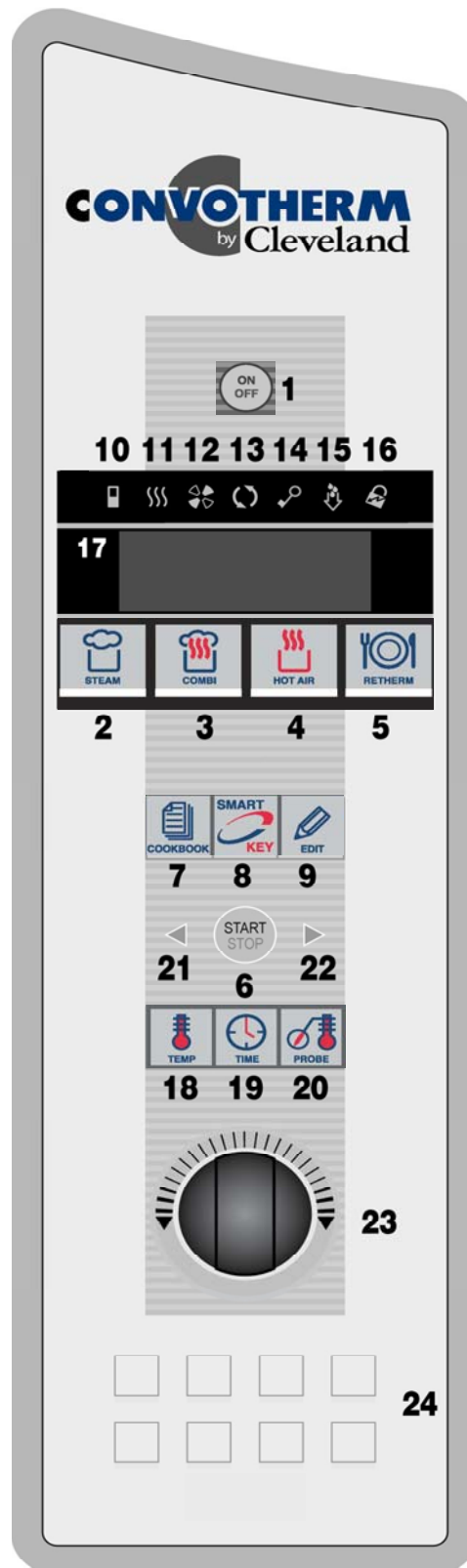
- Call up, exit cookbook.
- View a list of stored recipes in the display.

### 8. Smart Key

- Set Extra Functions.
- Set-Up the Combi.
- Enter Sub-Menus.

### 9. Edit

- Create, change, copy, and delete recipes.



**Figure 4-1b**  
**Control Panel**



## **Function Indicators**

- Light up when function or activity is engaged:

### **10. Reduced Power**

### **11. Burner or Electric Heating ON**

### **12. Reduced Fan Speed**

### **13. Cooking Mode Engaged**

### **14. Button Lock**

### **15. Crisp & Tasty Engaged**

### **16. Program Protection**

### **17. Display**

- **Display in normal mode:**
  - Date.
  - Time.
  - Oven Temperature.
  - Cooking Time
  - Core Probe Temperature.
- **Display in programming mode:**
  - Clear text.
  - Memory.
  - Symbols.

## **Settings**

### **18. Oven Temperature**

- Set the nominal oven temperature.
- View the actual or nominal oven temperature.

### **19. Cooking Time**

- Set the cooking time from 1 minute to 9 hours, 59 minutes using the Selector Dial.
- Set Continuous Mode
  1. At 9:59 or 0:01, release the Selector Dial.
  2. Turn the Selector Dial again to the left or right.
- See the actual or nominal cooking time.
- See elapsed cooking time when using Core Temperature mode.

### **20. Core Temperature**

- Set the nominal core temperature.
- See the actual or nominal core temperature.
- See the actual core temperature during cooking time mode.

### **21 & 22. Scroll Left and Scroll Right**

- Page / Scroll one step forward or back in programming mode.

### **23. Selector Dial**

- Set: Oven temperature, cooking time, core temperature, recipe name, recipe number.
- Select Smart Key functions, editing functions and recipes in the cookbook.

### **24. Press & Go Keys**


- Start saved recipes with one key.
- LED below key lights up when corresponding recipe is started.

## **Notes:**

- **Magnetic door switch**  
If the oven door is opened during operation, the magnetic door switch automatically interrupts the recipe. The timer stops. After closing the oven door, the Combi automatically continues the recipe. If the oven door is opened when the buzzer sounds at the end of a recipe, it automatically switches off.
- Operate controls with hands only!

## AT THE END OF THE DAY OR SHIFT

### A. Cleaning the Oven Chamber

 <b>CAUTION</b>
<b>Clean the oven chamber at least once per day or more frequently as needed</b> <b>Failure to clean the Combi properly and regularly can cause equipment damage.</b> <b>Damage caused by improper cleaning will invalidate the Warranty!</b>

#### 1. Cleaning – General

- a. Regular cleaning of the Combi after use, inside and out, helps guarantee many years of satisfaction from your Combi.
- b. Clean and maintain the Combi ONLY when the Combi is cold.
- c. Use the hand shower only inside the oven chamber.
- d. Clean the outside the Combi by hand.
- e. Never use the hand shower, hose, pressure washer or similar device on the outside of the Combi.
- f. NEVER spray anything on or into the air intakes or outlets of the Combi.
- g. Do NOT use hoses, pressure washers, high-pressure cleaners, or water jets to clean inside the Combi oven chamber.
- h. Do NOT spray water into a hot oven chamber.
- i. Use only genuine Convotherm by Cleveland and Cleveland Range cleaning and descaling products. Follow the instructions and heed and obey the warnings on the labels. Other products can cause injury, present health hazards, and damage the Combi.
- j. Never use irritant, acidic, highly alkaline cleaners, high-alcohol, chlorine, chlorinated, or abrasive cleaning agents, scrapers, or abrasive materials to clean the Combi.
- k. Poor water quality can cause discoloration inside the oven chamber. Remove these discolorations with CONVOCare. Spray CONVOCare on the affected surfaces in a COLD oven chamber, wait 10 minutes, wipe off with a soft cloth or sponge, and begin cleaning as usual.
- l. Damage caused as a result of improper cleaning voids the warranty.

#### 2. Semi-Automatic and Automatic Cleaning - General

- a. If the oven chamber is very heavily soiled, additional manual cleaning may be necessary.
- b. Depending on the level of soiling of the oven chamber, the engaging frames and grills may be left in the oven during the automatic cleaning process.
- c. Do NOT interrupt the semi-automatic or automatic cleaning process.



## WARNING

When working with cleaning agents, nozzle rinsing fluid and spray bottles: Wear suitable clothing, protective gloves and protective goggles to help protect from splashes and spills. Failure to do so can result in chemical burns on skin and in eyes.

## WARNING

**Read, understand, and heed and obey all instructions and safety information found on cleaning agent labels, Material Safety Data Sheets, and related documents and sources. Failure to do so can result in death, injury, and equipment damage.**

### 3. Manual Cleaning of the Oven Chamber

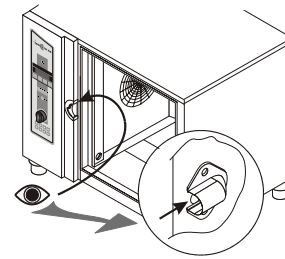
- a. Clean the Combi daily to prevent discoloration and corrosion of the stainless steel.
  - 1) **Avoid scratching the oven chamber or engaging frame.**
  - 2) Scratches can collect soil and / or allow corrosion to begin.
  - 3) Do NOT use harsh or abrasive cleaning agents, scouring pads, or scrapers.
- b. Clean the fan guard and the fan area behind the fan guard at the same time.
  - 1) Release the quick-action locks on the oven racks and fan guard.
  - 2) Pivot the oven racks and fan guard out into the oven chamber.
  - 3) After cleaning, push the oven racks and fan guard closed and fix them in place with the quick-action locks.

## CAUTION

**Do NOT use U-Shaped racks that are bent or otherwise damaged in any way. Pans and accessories placed in damaged racks can tip and spill, causing burns, injuries and/or equipment damage**

- 4) Make sure that the U-Shaped racks do not become bent; otherwise grills, racks, containers and accessories will no longer be safely supported. If U-Shaped racks become bent then remove the Combi from service and contact your qualified Cleveland Range authorized service representative at once.
- c. Clean the interior of the of the double glass doors daily.
  - 1) Release the quick-action locks on the door glass.
  - 2) Clean the glass with a non-abrasive cleaner and a soft cloth.
  - 3) Do not use harsh or abrasive cleaning agents, scouring pads, or scrapers because they will damage the glass.
- d. Regular cleaning of the hygienic plug-in gasket (door gasket) increases service life.
  - 1) Wait for the gasket to cool.
  - 2) Clean the gasket with mild, scent free dish detergent and a soft cloth.
  - 3) Do not use harsh or abrasive agents, scouring pads or scrapers because they will damage the gasket.
  - 4) Air dry the gasket.

- e. Clean the Bypass Measuring Aperture. (Opening in the oven chamber on the left-hand side, slightly below the door latch. See diagram.)
- 1) Spray with CONVOClean.
  - 2) Rinse clean with the hand shower.
- f. Remove and clean the drain cover.
- 1) Clean food residue and drippings from the tray and drain in the oven chamber.
  - 2) Spray on original CONVOClean oven chamber cleaner and allow it to take effect.
  - 3) Rinse thoroughly with the hand shower.
- g. Clean the drain and make sure that it is not blocked.
- h. Clean the demohisturizing tray (trough shaped area under the drain cover).



Bypass



Drain Cover and Drain

- i. Clean the door drip tray, appliance drip trays and accessory drip trays.

**NOTES:**

- If a white deposit forms inside the oven chamber, the water treatment system is not correctly set, or the addition of a water treatment system is required. To remove this deposit, use vinegar and a soft cloth.
- Ask your qualified Cleveland Range authorized service representative about adding or setting a water treatment system.



## B. Semi-Automatic Cleaning of the Oven Chamber

**NOTE:** Do NOT press the Start/Stop key while using the Semi-automatic Cleaning process. This stops the cleaning process.



### WARNING

The Semi-Automatic Cleaning process is designed to be started when the oven chamber temperature is at or below 158°F. Death, injury, and equipment damage can result from starting the Semi-Automatic Cleaning process when the oven chamber is above 158°F.

1. Before starting the Semi-Automatic Cleaning process, make sure the oven chamber is below 158°F by stopping all processes and pressing the Temperature key twice to view the actual temperature.
  - a. If the oven chamber is above 158°F then open the Combi door and wait 15 minutes.
  - b. Check the oven temperature again.
    - 1) If the oven temperature is at or below 158°F then go to Step 2.
    - 2) If the oven temperature is still above 158°F then wait 15 more minutes and check the oven chamber temperature. Repeat this step as needed until the oven chamber temperature is at or below 158°F and then go to Step 2.
2. See separate instruction sheet P/N 260AYM, "One-Hand Sprayer with Telescoping Wand," for safety information, detailed instructions for using the sprayer, P/N 111598, and other information.
3. Always wear appropriate protective clothing and equipment when using this Sprayer, including protective gloves and goggles.
4. Close and latch the Combi door.
5. If the Combi is OFF, turn it ON.
6. Press the Smart Key. Various options appear in the display.
7. Use the Selector Dial to select "Cleaning"
8. Confirm by pressing the Smart Key.
9. Confirm "Yes" with the Smart Key. The semi-automatic cleaning process starts.
10. Semi-automatic cleaning uses cooking modes to assist the cleaning process. The display shows the nominal values for the cooking modes.
  - a. The first step is Hot Air mode at 158°F for 10 minutes, followed by a Signal Tone.
11. After the first Signal Tone, open the oven door, and follow instruction sheet in P/N 260AYM to spray the oven chamber, drain, grills, plates etc. with original Convotherm by Cleveland CONVOClean.
12. Close and latch the Combi door and allow the CONVOClean to take effect. The Semi-Automatic Cleaning mode continues to run.
  - a. The second step is Steam mode at 86°F for 10 minutes, followed by a Signal Tone.
13. After the second Signal Tone, clean behind the fan guard and the fan area.
  - a. Release the quick-action locks on the oven racks and fan guard.
  - b. Swing the oven racks and fan guard into the oven chamber.
  - c. After cleaning, swing the oven racks and fan guard closed and fix it in place with the quick-action locks.
14. Close and latch the Combi door. The Semi-Automatic Cleaning mode continues automatically.

- a. The third step is Steam mode at 86°F for 1 minute. No action is needed.
  - b. The fourth step is Steam at 212°F for 10 minutes, followed by a Signal Tone.
- 15. Turn OFF the Combi when the Signal Tone sounds.
- 16. Use the hand shower to rinse thoroughly the oven chamber, accessories, and behind the fan guard.
- 17. In the case of severe staining or soiling, repeat the cleaning process.
- 18. After use or after cleaning, leave the Combi door open.



### C. CONVOClean Automatic Cleaning System (optional):

#### NOTES:


- Do NOT interrupt the automatic cleaning process. Interrupting and restarting the Automatic Cleaning System with the ON/OFF key may start a 6 minute forced rinsing of the oven chamber to remove any CONVOClean and CONVOCare residue when the ON/OFF key is turned back ON. The Signal Tone sounds at the end of the forced rinsing cycle and the Combi is ON.
- Do not open the Combi door during the automatic cleaning process, unless the instruction "Open the door" and "close the door," appears in the display.
- Pre-clean manually to save water and CONVOClean by selecting a lower cleaning setting.
- If the security questions are not answered within 5 seconds, the Combi resets itself to the query level and will not start.
- If the message "No cleaner pressure" appears, check that there is enough CONVOClean and/or CONVOCare in the correct containers. Refill them if necessary (red hose for CONVOClean, and blue or white hose for CONVOCare).

#### CAUTION

**Always make sure the cleaning agent containers are correctly connected to the Combi**

**CONVOClean => RED**

**CONVOCare => BLUE or WHITE**

- A. See P/N 260AZA, "Instructions for CONVOClean System Start-up Kit," for hose attachment, solution mixing, and other information.
- B. The CONVOClean Automatic Cleaning Process
1. The oven chamber **must be cold** before starting this process. If the oven chamber is still hot, the error message, "oven temp too hi / please wait" appears in the display. If this error message appears, open the Combi door, wait 15 minutes and then try to start the automatic cleaning process. Repeat as needed.
  2. Before starting, remove large pieces food or cooking residue from the oven chamber to help prevent the drain from becoming blocked.
  3. Check the level of Convotherm by Cleveland CONVOClean and CONVOCare.
    - a. The containers **must** be full.
    - b. The suction pipes **must** be located in the fluid.
    - c. The hoses must be properly attached to the Combi.
  4. Press the Smart Key. Various options appear in the display.
  5. Use the Selector Dial to select "CONVOClean system" .
  6. Confirm by pressing the Smart Key.
  7. PRESS the Temperature key and select the cleaning level (1-4) with the Selector Dial. Approximate run times are listed to help plan use of the CONVOClean system. Times may vary by +/- 15 minutes.

1	"Light Soiling"	55 minutes.
2	"Medium Soiling"	1 hour and 30 minutes.

3	"Strong Soiling"	2 hours.
4	'Strong Soiling – Shining+"	2 hours and 45 minutes.

8. Press the Smart Key.
9. "Food inside oven?" appears in the display.
10. If the oven is empty, then answer "No."
11. Confirm by pressing the Smart Key.
12. "Start auto-cleaning?" appears in the display.
13. Answer "Yes."
14. Confirm by pressing the Smart Key.
15. The CONVOClean system starts.
16. The instruction "open the door" appears in the display to check the function of the magnetic door switch.
17. Open the Combi door.
18. The instruction "close the door," appears in the display to check the function of the magnetic door switch.
19. Close the door.
20. The self test "water supply open?" appears in the display. If the water supply is on (open), then the self test question disappears from the display.
  - a. If "water supply open?" does not disappear from the display, or "not enough water" appears in the display, then check the water supply.
  - b. The CONVOClean system resumes running after the water supply is restored.
21. "Cleaning in progress" appears in the display and the CONVOClean process runs.
22. The Signal Tone sounds at the end of the CONVOClean cycle and "end of cleaning" appears in the display.
23. Press the Start/Stop key to stop the Signal Tone and end the CONVOClean process.
24. The Combi is ON and ready to use.
25. After use or after cleaning, leave the Combi door open.

# DESCALE STEAM GENERATOR

## A. GENERAL INFORMATION

1. Steam generators should be descaled at least once a month, depending on scale buildup. If you have serious steam generator scale buildup, a water treatment system should be installed for the steamer. If this is not possible, the frequency of descaling should be increased.
2. Cleveland Range, recommends the use of ***DISSOLVE®* Descaler Solution, Cleveland Range Part Number 106174**. No other system of steamer descaling should be used.
3. **NOTE:** Part No. 106174 is the Part No. for a case (6 1-gallon containers) of *DISSOLVE®* descaler.
4. THESE INSTRUCTIONS ARE FOR USE WITH *DISSOLVE®* DESCALER SOLUTION Cleveland Range Part Number 106174 ONLY.
5. **Health Hazard Data, Effects of Overexposure** – This product may cause a burning sensation to eyes or skin.
6. **Emergency and First Aid Procedures** - In case of eye contact, immediately flush eyes with plenty of water. If irritation persists, seek medical attention. In case of skin contact: wash with soap and water. If inhaled, remove to fresh air. If burning persists, call a physician. If swallowed, drink 1 or 2 glasses of water and call a physician.
7. **Spill or Leak Procedures** – Rinse with plenty of water to dilute. Sodium carbonate or calcium carbonate may be used to soak up liquid. Spent material is considered non-hazardous and may be disposed of in a sewer system with water flush.

## WARNING

The liquid solution in Cleveland Range Descaler Solution Part No. 106174, “***DISSOLVE®* Descaler Solution,**” can be harmful if not handled properly.

Follow these basic safety rules for handling and using this product to help prevent death or injury:

- Wear protective clothing when mixing or applying chemical cleaners.
- Wear rubber gloves, and OSHA approved eye protection when descaling to help avoid injury.
- Avoid breathing fumes. If liquid comes in contact with skin, wash with soap and water.
- If chemical contacts eyes, flush with water. If irritation persists, seek medical attention
- If chemical is swallowed or ingested, drink 1 or 2 glasses of water and call a physician.

Failure to do so can result in death or injury.

## CAUTION

Use ONLY the *DISSOLVE®* Descaler method using Part No. 106174 to descale the Combi.

Read, understand, and follow both the descaling procedure instructions and warnings, and the instructions and warnings on the *DISSOLVE®* label and MSDS.

Injury, equipment damage, and property damage can result from using other descaling systems and/or failing to follow the descaling procedure and *DISSOLVE®* instructions and warnings.



## DANGER

**Do NOT heat the Combi during descaling.  
Death, injury, equipment and property damage can result.**



## WARNING

**This procedure is slightly different depending on the model being descaled. This entire procedure should be read and fully understand as it applies to the model being descaled, before beginning the actual descaling operation.**

### B. GENERAL SAFETY FOR DESCALING

1. Always wear suitable protective clothing including appropriate gloves, and eye protection.
2. Read, understand, heed and obey and obey and obey, and follow all directions on the descaler label, MSDS, and related documents
3. Never operate the Combi when descaler has been applied or while descaling.
4. Descale only when the Combi is cold.
5. Immediately wipe up any leaked or spilled descaling fluid.

### C. COMBI ATMOSPHERIC STEAM GENERATOR DESCALING PROCEDURE

**(For *DISSOLVE*® Descaler Solution Part No. 106174)**

**This procedure takes approximately 3 hours to complete.**


**Do NOT heat the Combi during descaling.**

1. Turn ON the Combi at the Control Power Service Disconnect switch located below the hand shower.
2. Turn ON the Combi with the ON/OFF key.
3. Open the door to the cooking compartment.
4. Run a manual steam generator rinse cycle.  
To Empty and Rinse the Steam Generator:
  - a. Press the Smart Key.
  - b. Select "Manual Steam Generator Rinse" with the Selector Dial.
  - c. Confirm "Yes" with the Smart Key.
  - d. Steam generator rinses and begins to refill to operating level.
4. Remove the cap from the descale port located at the top of the Combi (See Figure 6-1).
5. **While the steam generator is filling with water, use a funnel (NOT INCLUDED) to add 3/4 gallon of *DISSOLVE*® descaler solution into the descaling port of 20.20 Combis, and 1/2 gallon for all other models**



**Figure 6-1  
Descaling Port  
Located at Right Rear of the Combi**



- While adding liquid to the steam generator through the descaler inlets, pour slowly to avoid overflow.
  - Wipe up any spills at once to avoid etching.
6. After the automatic fill cycle has ended, turn OFF the Combi with the ON/OFF key, and at the Control Power Service Disconnect switch located below the hand shower. See Figure 6-2.
  7. Add cold tap water through the descale port until descaling solution enters the cooking compartment through the steam port or until the descaling port overflows (water required varies depending on the Model).
    - Wipe up any spills and overflows.
  8. Let the Descaler work for 1 hour.
  9. Turn the Combi ON at the Control Power Service Disconnect switch located below the hand shower. See Figure 6-2.
  10. Turn ON the Combi with the ON/OFF key.
  11. Run a manual steam generator rinse cycle (Step 4).
  12. After the automatic fill cycle has ended, turn OFF the Combi with ON/OFF key, and at the Control Power Service Disconnect switch located below the hand shower. See Figure 6-2.
  13. Add water through the descale port until water enters the cooking compartment through the steam port or until the descaling port overflows (water required varies depending on the Model) to rinse descaler from the area above the normal water fill level.
  14. Replace the descale port cap.
  15. Turn the Combi ON at the Control Power Service Disconnect switch located below the hand shower. See Figure 6-2.
  16. Turn ON the Combi with the ON/OFF key.
  17. After the Automatic Fill ends, run a manual steam generator rinse cycle (See Step 4).
  18. Run Combi mode for 30 minutes at 212° F with Crisp & Tasty function.
  19. Close the cooking compartment door.
    - a. Press Combi key.
    - b. Press Temperature key.
    - c. Set temperature with Selector Dial to 212° F.
    - d. Press Time key.
    - e. Set time with the Selector Dial for 30 minutes.
    - f. Press Smart Key Various options appear in the display.
    - g. Select "Crisp & Tasty" with the Selector Dial.
    - h. Select the Crisp & Tasty level to "high demoisurizing – continuous" with the Selector Dial.
    - i. Confirm "Yes" with Smart Key.
    - j. The Crisp & Tasty icon  appears in the display.
    - k. Press the Start/Stop key to start.
    - l. Signal Tone sounds and steaming stops after 30 minutes.
    - m. Press the Start/Stop key to end the Signal Tone.
  20. Run a manual steam generator rinse cycle. (See Step 4) This is the final rinse. The Combi is now ready for normal operation.

# 2020 GAS GENERATOR W CLEANING

Washer Arm C2611068

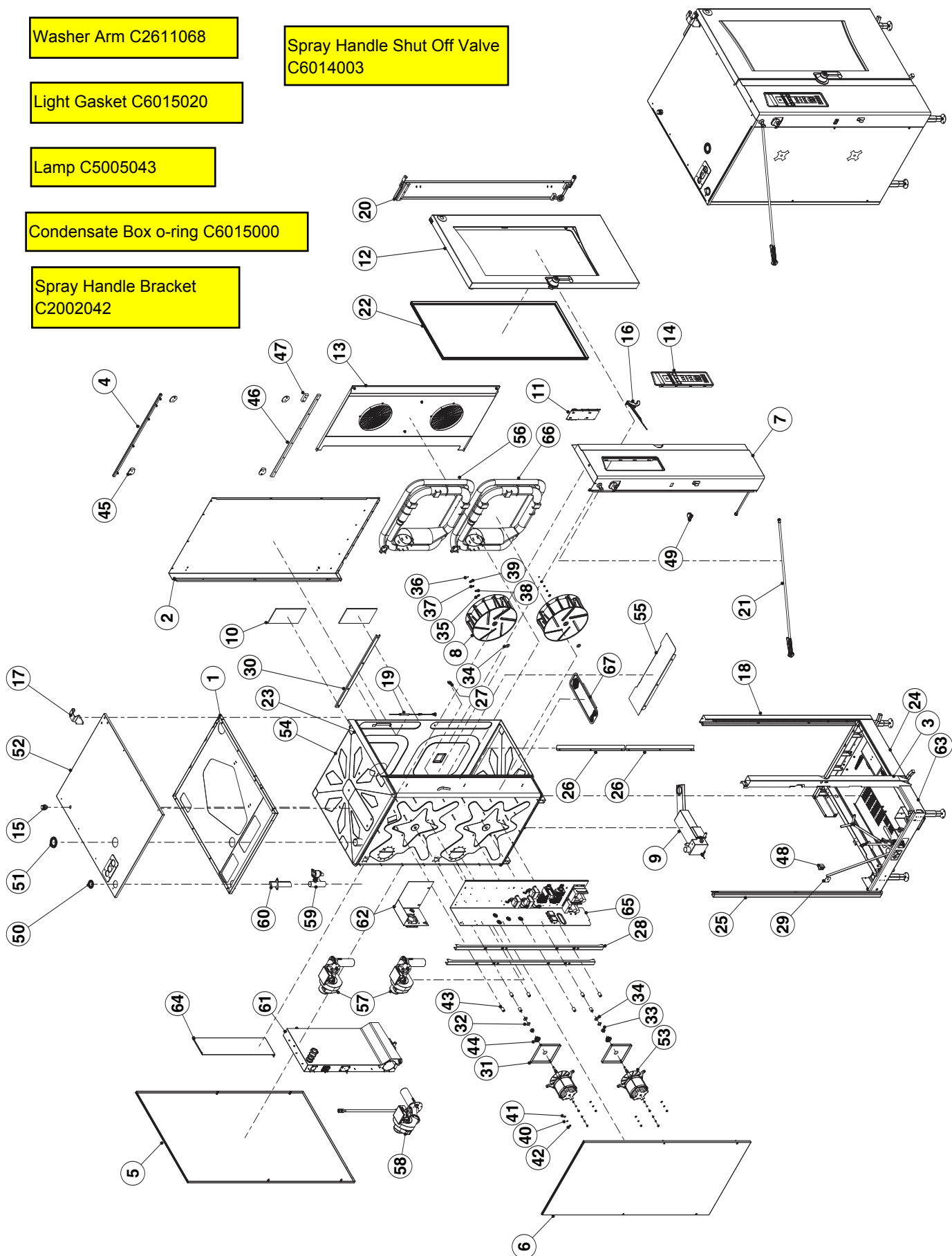
Spray Handle Shut Off Valve  
C6014003

Light Gasket C6015020

Lamp C5005043

Condensate Box o-ring C6015000

Spray Handle Bracket  
C2002042



## 2020 GAS GENERATOR W CLEANING

ITEM	QTY	PART NO.	DESCRIPTION
1	1	C2114828	ASSEMBLY/WELDMENT, TOP, INTERMEDIATE, 12.20/20.20
2	1	C2115487	ASSEMBLY, PANEL, RIGHT SIDE, 20.20
3	1	C2114721	WELDMENT, REINFORCEMENT, DOOR LATCH, 20.10/20.20
4	1	C2114690	ASSEMBLY, SLIDE BAR, DISAPPEARING DOOR, X.20
5	1	C2114747	ASSEMBLY, PANEL, REAR, ELECTRIC & GAS INJECTOR, 20.20
6	1	C2114787	ASSEMBLY, PANEL, LEFT SIDE, 20.20
7	1	C2115447	ASSEMBLY, CORNER, FRONT LEFT, 20.20
8	2	C6010003	WHEEL, BLOWER, 405mm OD X 150mm WIDE, TYPE 304 SST, 20.20 COMBI
9	1	C2012107	ASSEMBLY, CONDENSER, FLOOR UNIT,
10	2	C2614841	CAVITY LIGHT,
11	1	C26142661	ASSEMBLY, CONTROLLER
12	1	C2514356	ASSEMBLY, DOOR, 20.20,
13	1	C2214147	ASSEMBLY, INTAKE PLATE STEAM GENERATOR 20.20
14	1	C2114296	ASSY, CONTROL PANEL, STEAM GEN, WITH PICTO
15	1	109641	PORT ASSY, DESCALER
16	1	C2216070	ASSEMBLED, BLOCK
17	1	C2614750	ASSEMBLY, GUIDE CLIP, VST, FLOOR MODEL,
18	1	C2115493	ASSEMBLY, CORNER, FRONT, RIGHT, 20.20
19	1	C26142631	ASSEMBLY, CORE TEMPERATURE SENSOR, 20.20,
20	1	C26148301	FINAL ASSEMBLY, DISAPPEARING DOOR, X.20,
21	1	C22160803	ASSEMBLY, HAND SHOWER
22	1	C7011007	DOOR SEAL, 20.20
23	1	C2114732	FACEPLATE, UPPER X.20
24	1	C2114730	FACEPLATE, LOWER, 12.20/20.20
25	1	C2114636	CORNER, WELDED, REAR LEFT 20.10/20.20
26	2	C2216467	PLATE, AIR GUIDE, FLOW
27	1	C2016009	COVER, BYPASS,
28	2	C2614735	MOTOR STIFFENER, 20.10/20.20
29	1	C2114798	BRACKET, HIGH LIMIT, STEAM GENERATOR,
30	1	C2216797	STIFFENER, INNER CAVITY, RIGHT SIDE 20.20
31	2	C2114140	MOTOR MOUNTING PLATE
32	2	C6015210	SHIM, WEARING MOTOR SHAFT SEAL
33	2	C6015206	BUSHING, LABYRINTH
34	4	C6015021	SEALING RING, MOTOR SHAFT, VITON, COMBI
35	2	111544	WASHER, BELLEVILLE, M10, SMOOTH, TYPE 301 SST, 10.21mm ID X 24mm OD X 1.85mm THICK
36	2	111543	RING, RETAINING, EXTERNAL, 1/4", STAINLESS STEEL, WALDES #5100-25H
37	2	111542	WASHER, BELLEVILLE, M8, SERRATED BOTH SIDES, SST, 8.4mm ID X 13mm OD X 0.8mm THICK
38	2	111541	NUT, HEX, LEFT-HAND, M8 X 1.25 (DIN 934L), STAINLESS STEEL
39	2	111540	NUT, HEX, M10 X 1.5 (DIN 934), STAINLESS STEEL
40	8	C8006060	SCHNORR LOCK WASHER
41	8	C8005050	WASHER, 8.4 A2 DIN 125
42	8	C8004057	NUT, HEX, M8 A4
43	8	C6015213	SPACER, MOTOR 1.299 (FAN DISTANCE 2.008in)
44	2	C6015050	SPRING, MOTOR SHAFT SEAL
45	4	C6012011	DOORSTOPPER VA VST
46	1	C2017000	SAFETY RAIL, VST, X.20
47	1	C6012009	GUIDE STRIP, LOWER VST
48	1	C5001041	SAFETY TEMPERATURE LIMITER, 340°C
49	1	19993	SWITCH, ROCKER, DPDT, ON/OFF 15A, 125V
50	1	C6005048	DIAPHRAGM GROMMET ø 60 mm (DG 48) P2
51	1	C6005427	DIAPHRAGM GROMMET ø 83 (DG60) FOR VAC. REG. VALVE
52	1	C2115467	ASSEMBLY, PANEL, TOP, GAS GEN, 20.20
53	2	C50180221	MOTOR W/STUD, ALL VOLTAGES, 3-PHASE, 4 POLE, 0.9KW, GAS COMBI
54	1	C2215106	INNER HOUSING, GAS, GEN, 20.20, REI, KTM
55	1	C2214139	WELDMENT, AIR GUIDE, FAN SPACE, 20.20, GAS
56	1	C2010016	WELDMENT, HEAT EXCHANGER 10.20/12.20/20.20
57	2	C2614863	BURNER INSERT, HOT AIR, 110V, 10.20/12.20/20.20, NAT
58	1	C2314903	ASSY, BURNER INSERT, GEN, GAS, 10.20/12.20/20.10/20.20, NAT
59	1	C21142872	ASSY, AIR OUTLET 20.20 GEN.
60	1	C2114292	AIR OUTLET CONECTING PIECE 20.20 GEN. 6.20/10.10/20.20 INJ.
61	1	C2314883	GEN, GAS, PRE-MOUNTED, 10.20/20.10/20.20
62	1	C5115949	ASSEMBLY, EXTENSION, MOUNTING PLATE, GAS, 20.20,
63	1	C21145492	BASE W/COVER, RAILS, ETC, W/CLEAN
64	1	C2314244	SUSPENSION, STEAM GEN, 20.10/20.20
65	1	300504	ASSEMBLY, COMPONENT PANEL, OGB 20.20
66	1	C2010090	WELDMENT, HEAT EXCHANGER, LOWER, 20.20
67	1	C2216796	ASSEMBLY, COVER, DEHUMIDIFYING GUTTER

# 2020 GAS INJ W CLEANING

Washer Arm C2611068

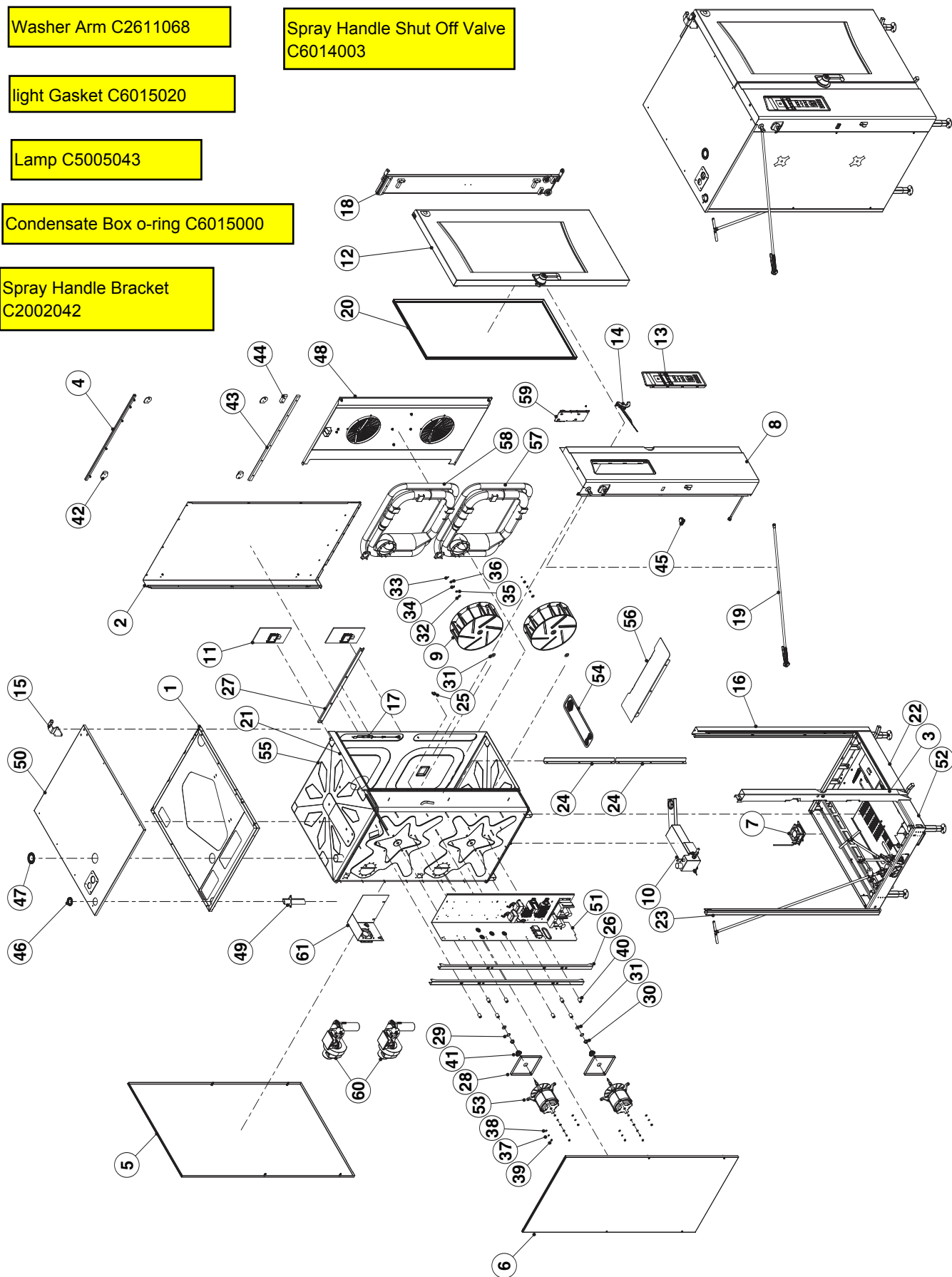
Spray Handle Shut Off Valve  
C6014003

light Gasket C6015020

Lamp C5005043

Condensate Box o-ring C6015000

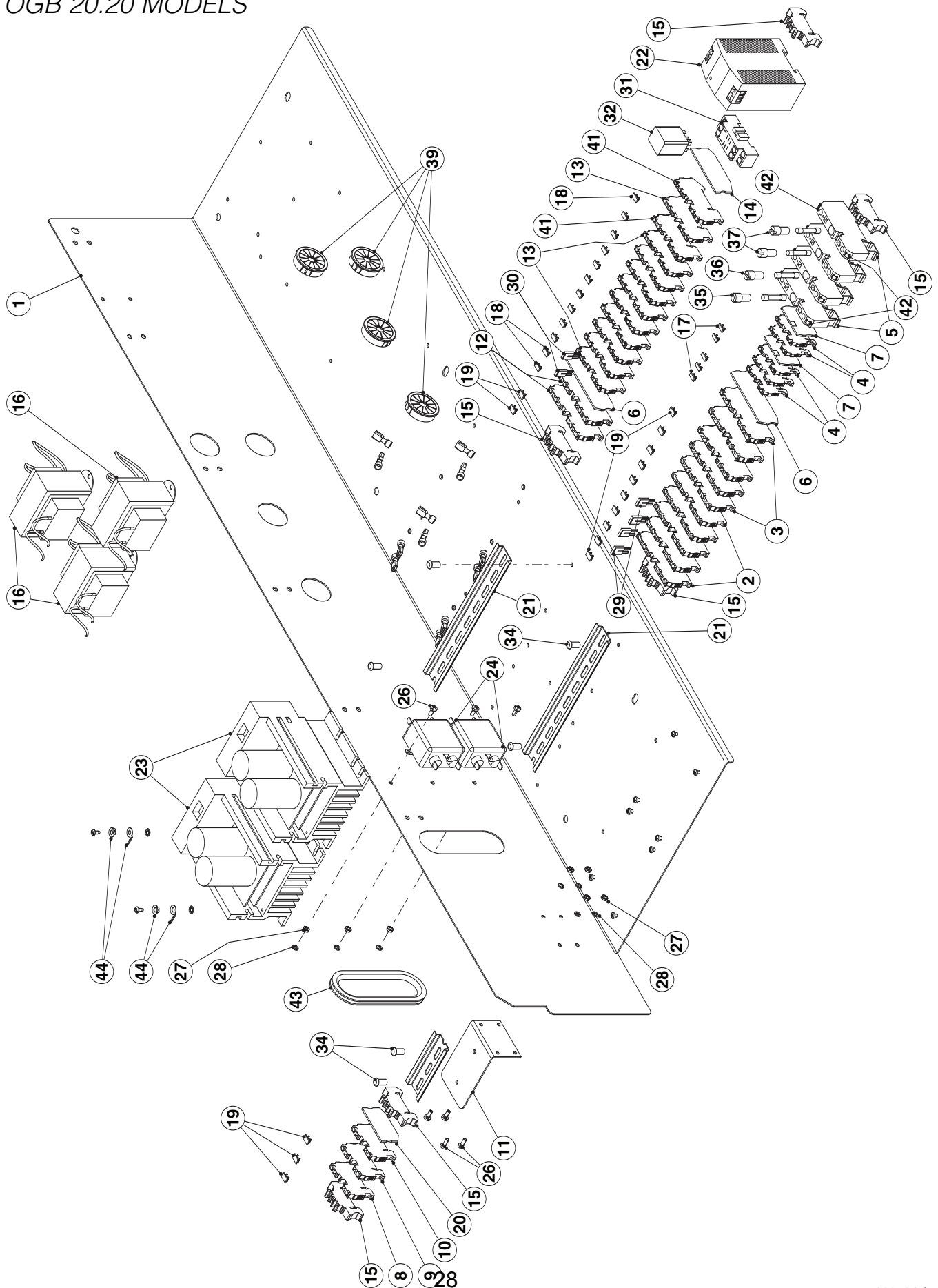
Spray Handle Bracket  
C2002042



## 2020 GAS INJ W CLEANING

ITEM	QTY	PART NO.	DESCRIPTION
1	1	C2114828	ASSEMBLY/WELDMENT, TOP, INTERMEDIATE, 12.20/20.20
2	1	C2115487	ASSEMBLY, PANEL, RIGHT SIDE, 20.20
3	1	C2114721	WELDMENT, REINFORCEMENT, DOOR LATCH, 20.10/20.20
4	1	C2114690	ASSEMBLY, SLIDE BAR, DISAPPEARING DOOR, X.20
5	1	C2114747	ASSEMBLY, PANEL, REAR, ELECTRIC & GAS INJECTOR, 20.20
6	1	C2114787	ASSEMBLY, PANEL, LEFT SIDE, 20.20
7	1	C2216090	FAN, AIR INLET BOX ASSEMBLY
8	1	C2115447	ASSEMBLY, CORNER, FRONT LEFT, 20.20
9	2	C6010003	WHEEL, BLOWER, 405mm OD X 150mm WIDE, TYPE 304 SST, 20.20 COMBI
10	1	C2012107	ASSEMBLY, CONDENSER, FLOOR UNIT
11	2	C2614841	CAVITY LIGHT
12	1	C2514356	ASSEMBLY, DOOR, 20.20
13	1	C2114296-3	ASSY, CONTROL PANEL, SPRITZER, WITH PICTO
14	1	C2216070	ASSEMBLED, BLOCK
15	1	C2614750	ASSEMBLY, GUIDE CLIP, VST, FLOOR MODEL
16	1	C2115493	ASSEMBLY, CORNER, FRONT, RIGHT, 20.20
17	1	C26142631	ASSEMBLY, CORE TEMPERATURE SENSOR, 20.20
18	1	C26148301	FINAL ASSEMBLY, DISAPPEARING DOOR, X.20
19	1	C22160803	ASSEMBLY, HAND SHOWER
20	1	C7011007	DOOR SEAL, 20.20
21	1	C2114732	FACEPLATE, UPPER X.20
22	1	C2114730	FACEPLATE, LOWER, 12.20/20.20
23	1	C2114636	CORNER, WELDED, REAR LEFT 20.10/20.20
24	2	C2216467	PLATE, AIR GUIDE, FLOW
25	1	C2016009	COVER, BYPASS
26	2	C2614735	MOTOR STIFFENER, 20.10/20.20
27	1	C2216797	STIFFENER, INNER CAVITY, RIGHT SIDE 20.20
28	2	C2114140	MOTOR MOUNTING PLATE
29	2	C6015210	SHIM, WEARING MOTOR SHAFT SEAL
30	2	C6015206	BUSHING, LABYRINTH
31	4	C6015021	SEALING RING, MOTOR SHAFT, VITON, COMBI
32	2	111544	WASHER, BELLEVILLE, M10, SMOOTH, TYPE 301 SST, 10.21mm ID X 24mm OD X 1.85mm THICK
33	2	111543	RING, RETAINING, EXTERNAL, 1/4", STAINLESS STEEL, WALDES #5100-25H
34	2	111542	WASHER, BELLEVILLE, M8, SERRATED BOTH SIDES, SST, 8.4mm ID X 13mm OD X 0.8mm THICK
35	2	111541	NUT, HEX, LEFT-HAND, M8 X 1.25 (DIN 934L), STAINLESS STEEL
36	2	111540	NUT, HEX, M10 X 1.5 (DIN 934), STAINLESS STEEL
37	8	C8006060	SCHNORR LOCK WASHER
38	8	C8005050	WASHER, 8.4 A2 DIN 125
39	8	C8004057	NUT, HEX, M8 A4
40	8	C6015213	SPACER, MOTOR 1.299 (FAN DISTANCE 2.008in)
41	2	C6015050	SPRING, MOTOR SHAFT SEAL
42	4	C6012011	DOORSTOPPER VA VST
43	1	C2017000	SAFETY RAIL, VST, X.20
44	1	C6012009	GUIDE STRIP, LOWER VST
45	1	19993	SWITCH, ROCKER, DPDT, ON/OFF 15A, 125V
46	1	C6005048	DIAPHRAGM GROMMET ø 60 mm (DG 48)
47	1	C6005427	DIAPHRAGM GROMMET ø 83 (DG60) FOR VAC. REG. VALVE
48	1	C2214157	ASSEMBLY, INTAKE PLATE IN 20.20
49	1	C2114292	AIR OUTLET CONECTING PIECE 20.20 GEN. 6.20/10.10/20.20 INJ.
50	1	C2115457	ASSEMBLY, TOP PANEL, GAS, INJECTOR, 20.20
51	1	300505	ASSEMBLY, COMPONENT PANEL, OGS 20.20
52	1	C21145392	ASSY, OUTER BASE, GAS, 20.20
53	2	C50180221	MOTOR W/STUD, ALL VOLTAGES, 3-PHASE, 4 POLE, 0.9KW, GAS COMBI
54	1	C2216796	ASSEMBLY, COVER, DEHUMIDIFYING GUTTER
55	1	C2215105	INNER HOUSING, GAS, INJ, 20.20, REI, KTM
56	1	C2214139	WELDMENT, AIR GUIDE, FAN SPACE, 20.20, GAS
57	1	C2010090	WELDMENT, HEAT EXCHANGER, LOWER, 20.20
58	1	C2010016	WELDMENT, HEAT EXCHANGER 10.20/12.20/20.20
59	1	C26142661	ASSEMBLY, CONTROLLER
60	2	C2614863	BURNER INSERT, HOT AIR, 110V, 10.20/12.20/20.20, NAT
61	1	C5115949	ASSEMBLY, EXTENSION, MOUNTING PLATE, GAS, 20.20

# **COMPONENT PANEL ASSEMBLY, GAS** OGB 20.20 MODELS



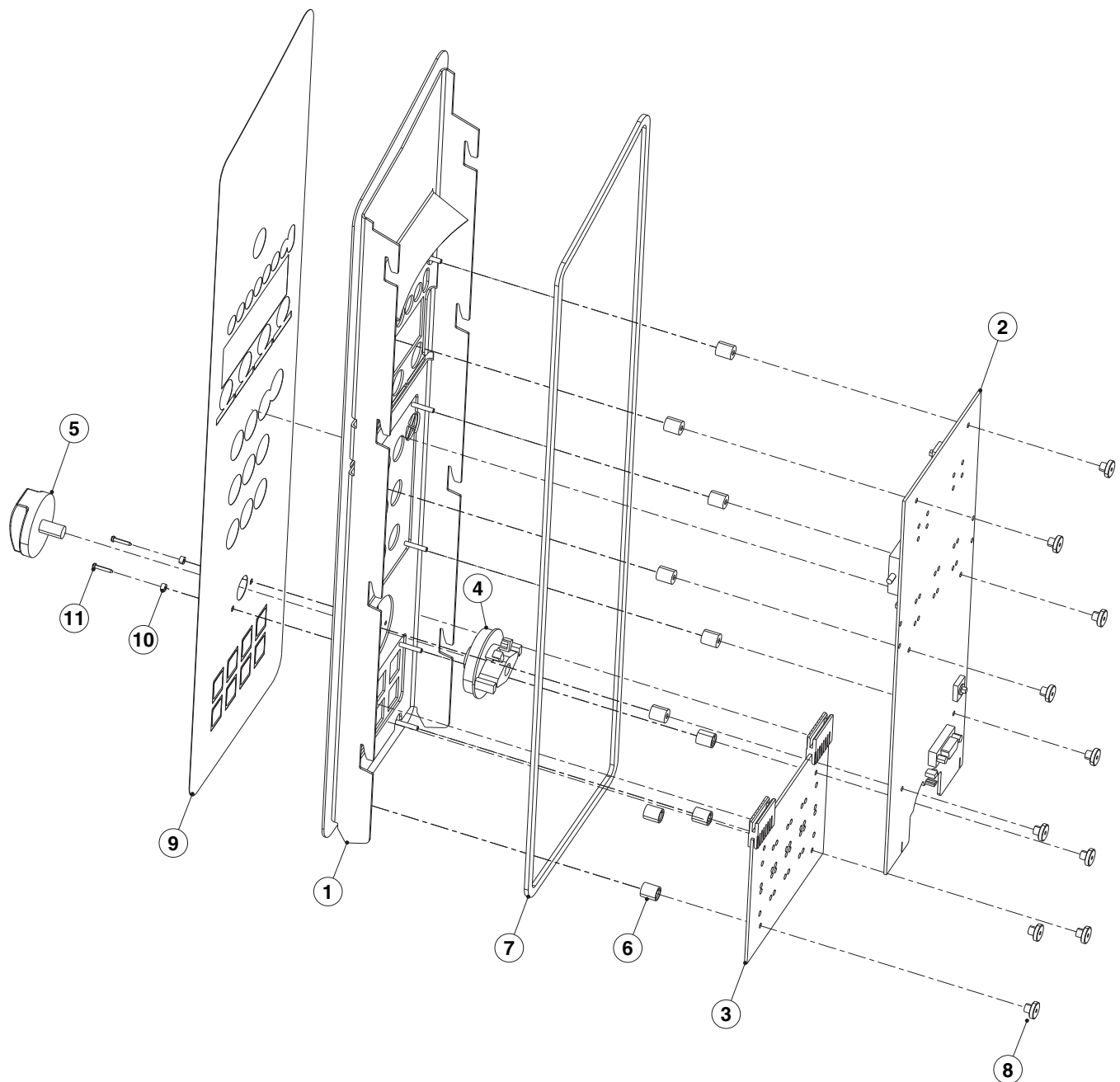
# COMPONENT PANEL ASSEMBLY, GAS

## OGB 20.20 MODELS

ITEM	QTY	PART NO.	DESCRIPTION
1	1	C5115405	PLATE, ELECTRICAL MOUNTING 20.20
2	5	C4014012	TERMINAL BLOCK, SPRING-LOADED, FOUR-WIRE, BLUE
3	5	C4014006	TERMINAL BLOCK, CONDUCTOR, SPRING-LOADED
4	5	C4014030	TERMINAL BLOCK, SPRING LOADED, 1.5MM2
5	4	C4014037	DINRAIL MOUNTED FUSEHOLDER (6.3X32)
6	2	C4014011	COVER, FOUR-WIRE
7	2	C4014031	COVER 2.5 MM2
8	1	C4014024	TERMINAL, FEED THROUGH, 4 MM2
9	1	C4014023	TERMINAL, FEED THROUGH,4MM2, BLUE
10	1	C4014016	TERMINAL, GROUNDED, SPRING LOADED, 2.5 MM2
11	1	C5116110	BRACKET, TERMINAL BLOCK, COMPONENT PANEL
12	2	C4014013	TERMINAL BLOCK, SPRING- LOADED, FOUR-WIRE
13	10	C4014010	TERMINAL, SPRING LOADED, FOUR WIRE, 2.5 MM2
14	1	C4014008	COVER FOUR-WIRE 2.5 MM2
15	6	C4014000	SNAP-ON END BRACKET
16	3	300419	TRANSFORMER, 24V
17	5	C4014033	LABEL BLANK, TERMINAL BLOCK, ZB4
18	12	C4014032	SERRATED COVER STRIP,PLAIN ZB5
19	15	C4014044	LABEL, BLANK, TERMINAL BLOCK, ZB6
20	1	C4014020	COVER 4 MM2
21	2	111601	DIN RAIL 8.375"
22	1	300350	POWER SUPPLY (12V)
23	2	300462	AC MOTOR DRIVE, 4 AMP
24	2	300472	FILTER, LINE, 20A
26	7	C8001024	SCREW, FILISTER HD, M4x10 DIN 7985
27	7	111605	M4 NUT
28	7	111606	M4 LOCK WASHER
29	4	C4014001	JUMPER, 2 PIN
30	2	C4014002	JUMPER 2-PIN
31	1	300473	RELAY SOCKET
32	1	03524	RELAY, DPDT, 120V, 50/60 Hz, AC
34	6	106123	SCREW, 10-32 X 1/2, TORX/ PAN HD, THRD FORMING, ZN
35	1	300416	FUSE MDA-2
36	1	300418	FUSE MDA-1
37	2	300471	FUSE, 20 AMP, MDA
38	1	111603	DIN RAIL 3.25"
39	4	111751	BUSHING, UNIVERSAL, 1.5DIA HOLE,HEYCO#2213,SNAP-IN UL
41	2	C4014009	TERMINAL BLOCK, SPRING LOADED, 1.5 MM2, BLUE
42	8	C4014039	LABEL BLANK, TERMINAL BLOCK, ZBF6
43	1	C700106611500	EDGE GUARD 11.500" LONG
44	4	20323	RING TO MALE TAB TERMINAL
49	8	106126	SCREW, 8-32 X 1/2, TORX/SLT.PAN HD
50	6	106127	SCREW, 6-32 X 1/2, TORX/PAN HD
51	6	300231	TERM., FULL INSUL, FEMALE, 0.250 TAB
52	6	20370	TERM.,FULL INSUL, MALE, 0.250 TAB

# ASSEMBLY, CONTROL PANEL, WITH PICTO

ALL MODELS

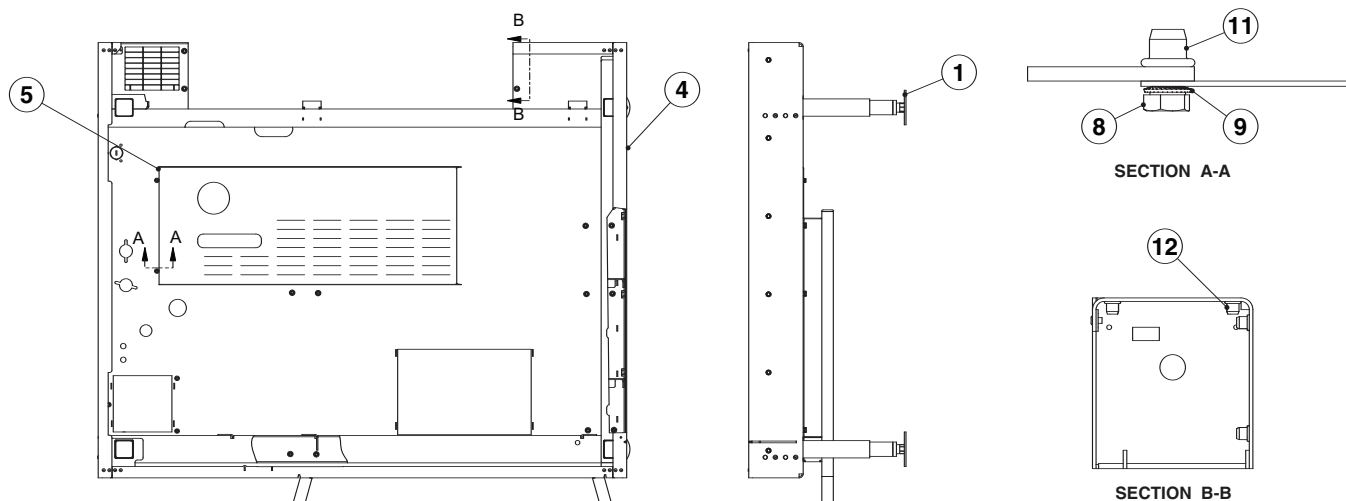


ITEM	QTY	PART NO.	DESCRIPTION
1	1	C2114297	WELDMENT, CONTROL PANEL
2	1	C5019101	CONTROLLER, 5010 OPERATING MODULE
3	1	C5019105	CONTROLLER, 5010 PICTOMODULE PICTO
4	1	C5009313	LATCH ROCKER
5	1	C5009314	KNOB, SELECTOR, COMBI
6	10	C8009030	SPACER, CONTROL PANEL
7	1	C7011010	GASKET, FRONT PLATE
8	10	C6005254	NUT, KNURLED
9	1	111588	LABEL, CONTROL PANEL, STEAM GEN, WITH PICTO
	1	111590	LABEL, CONTROL PANEL, SPRITZER, WITH PICTO
10	2	C6005270	SPACER, CONTROL KNOB STOP
11	2	C8007013	SLOTTED PAN-HEAD TAPPING SCREW 2.2 X 13
12	1	300533	CABLE, CONNECTING, CONTROL (NOT SHOWN)

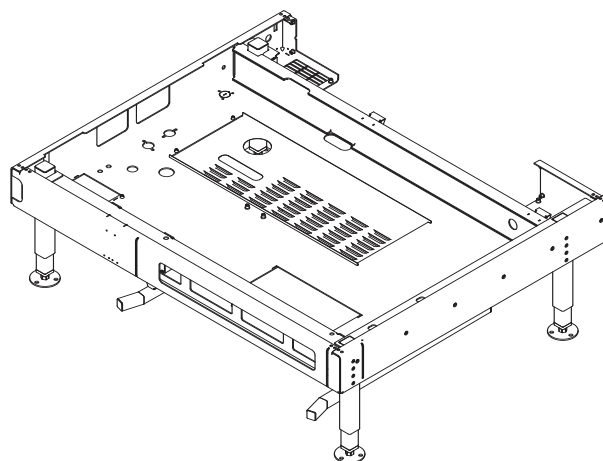


# ASSEMBLY, OUTER BASE

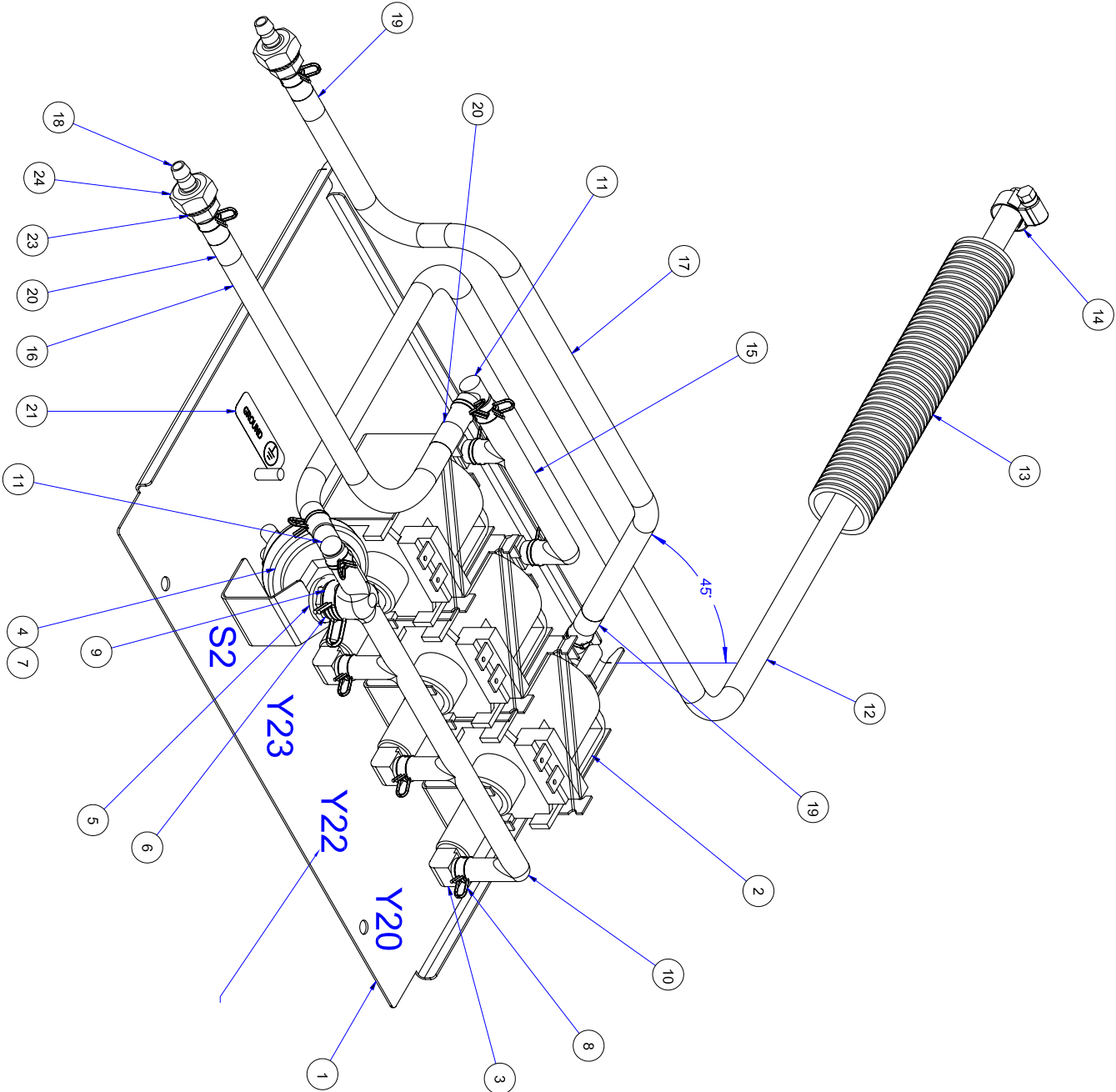
OGB 20.20 MODELS



Pressure Switch C5009055  
Agent Pump 300352

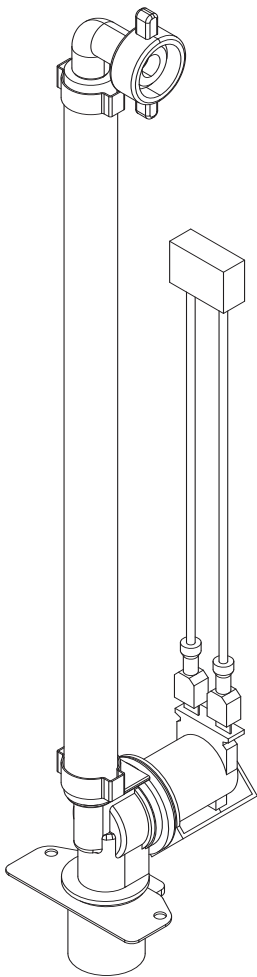
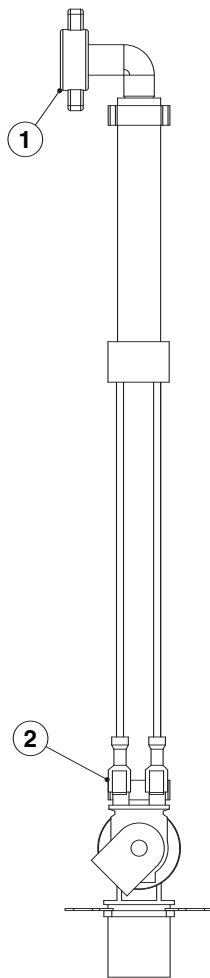
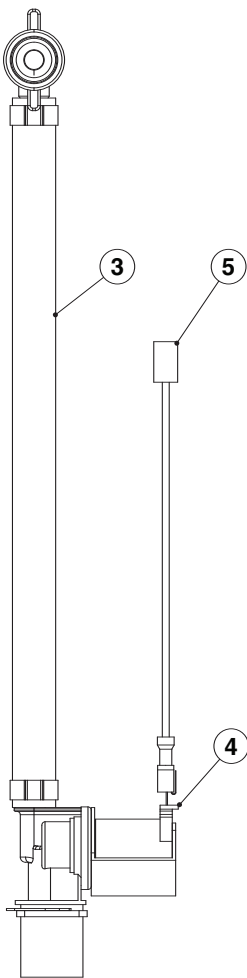


ITEM	QTY	PART NO.	DESCRIPTION
1	4	100413	FOOT ASS'Y, ADJUSTABLE (FOR 1.250 SQ. TUBING), ANCHORABLE TIEDOWN
2	1	C2115476	WELDMENT, GUIDE RAIL, RIGHT, 12.20/20.20
3	1	C2115477	WELDMENT, GUIDE RAIL, LEFT, 12.20/20.20
4	1	C2115393	WELDMENT, BASE, GAS GENERATOR, 12.20/20.20
5	1	C2114627	COVER, BOTTOM, ACCESS, CONDENSER
6	10	C8006057	SCHNORR LOCK WASHER
7	10	C8003043	HEXAGON BOLT M6x16
8	2	C8003035	HEXAGON BOLT M5X10
9	2	C8006058	SCHNORR LOCK WASHER
10	2	111519	PLUG, 1" SQUARE, RIBBED, BLACK POLYETHYLENE, FITS ID 0.844" - 0.924"
11	7	C8008094	BLIND RIVET NUT M5 A2 HEXAGON
12	22	C8008089	BLIND RIVET NUT M6 A2 HEXAGON



1	1	C2114823	WELDMENT, PUMP HOUSING, 110V P3
2	3	300352	PUMP OSCILLATING PISTON, 110-120VAC, 60Hz P3
3	6	105787	FITTING, HOSE BARB, 90°, 1/4 H X 1/8 (NPT(M))
4	1	C5009055	SWITCH, PRESSURE, AUTO CLEANING SYSTEM, P3
5	1	C6005016	GASKET, FLAT, 18.8mm OD X 10.3mm ID X 2mm THICK
6	1	C6015229	BUSHING, THREADED, PRESSURE SWITCH P3
7	AIR	111588	THREAD SEALANT, (LOCTITE 577)
8	12	C6009058	CLAMP, HOSE, SPRING, DOUBLE WIRE, 9.1 - 9.6 mm (0.358 - 0.378 in)
9	1	C6019010	CLAMP, HOSE, SPRING, DOUBLE WIRE, 14.1 - 14.8 mm (0.555 - 0.583 in)
10	1	C6014000	MANIFOLD, DISCHARGE, CLEANING PUMPS, EPDM
11	2	C6005414	FITTING, HOSE, 90 DEGREE ELBOW, 6mm BARB X 6mm BARB, PLASTIC (POM)
12	1	C701230265000	HOSE, EPDM, 6mm ID X 10mm OD, 65.000' LONG
13	1	C700204433500	HOSE, PROTECTION, 28mm OD X 23mm ID, CUT 33-1/2' LONG
14	1	106526	CLAMP, HOSE, WORM DRIVE, 3/8 TO 5/8x5/16in, SST
15	1	C6014001	MANIFOLD, SUCTION, CLEANING PUMPS, EPDM
16	1	C701230239500	HOSE, EPDM, 6mm ID X 10mm OD, 39.500' LONG
17	1	C701230245500	HOSE, EPDM, 6mm ID X 10mm OD, 45.500' LONG
18	2	C6015247	FITTING, BULKHEAD, HOSE, 6mm ID
19	2	C6019111	LABEL, BLUE, CONVOCARE, CLEANER HOSE
20	2	C6019109	LABEL, RED, CONVOCLEAN, CLEANER HOSE
21	1	14897	LABEL, GROUND
22	1	C5215890	HARNES, WIRE, CLEANING, 20/20
23	2	C6006063	WASHER, BELLEVILLE, M10, SEPRATED BOTH SIDES, SST, 10.5mm ID X 16mm OD X 1mm THICK
24	2	111540	NUT, HEX, M10 X 1.5 (DIN 934), STAINLESS STEEL
25	1	14672	NUT, HEX, NYLOCK, 10-32, 2P (FOR GROUND WIRE)
26	3	078180-1	O-RING
ITEM	QTY	PART NO.	DESCRIPTION

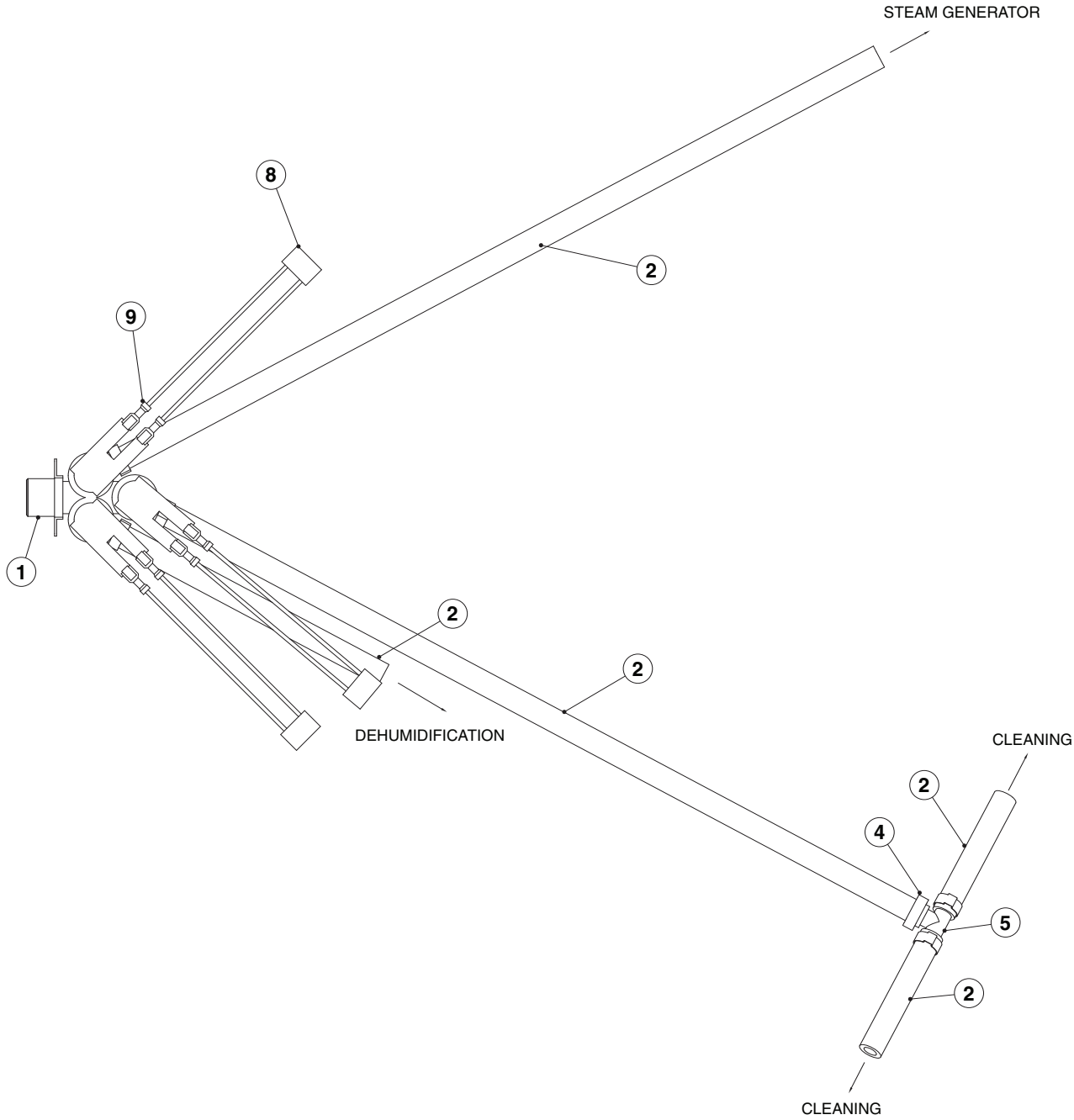
**ASSEMBLY, WATER HOSE SYSTEM, CONDENSER**  
*ALL MODELS*



ITEM	QTY	PART NO.	DESCRIPTION
1	1	C6015215	ELBOW, HOSE CONNECTION, 3/8" WITH SEAL
2	2	111647	CLAMP, OETIKER, S/S, 19/32"
3	1	11149811000	HOSE, SILICONE, 3/8" ID X 11.000
4	1	300455	VALVE ASSEMBLY, 1 WAY, 120 VAC
5	1	300407	FILTER, ELECTRICAL
6	2	300509	TERMINAL, 18-22 AWG PIGGY BACK

**ASSEMBLY, WATER VALVE**

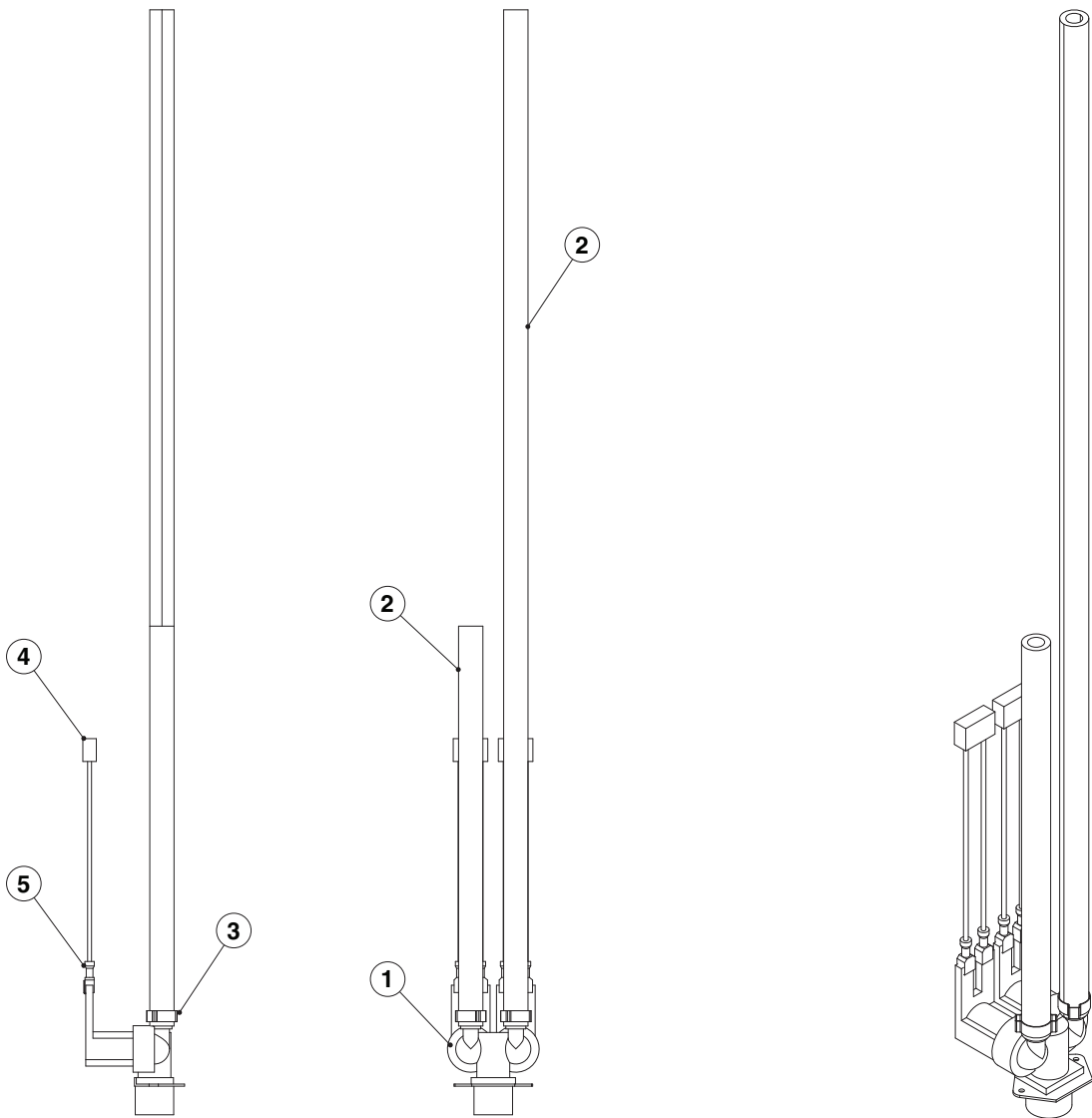
ALL 20.20 MODELS



ITEM	QTY	PART NO.	DESCRIPTION
1	1	300453	VALVE ASSEMBLY, 3WAY 240VAC
1	1	300363	VALVE ASSEMBLY, 3WAY 120 VAC
2	5	111498	HOSE, SILICONE, 3/8" ID (SPECIFY LENGTH)
4	6	111647	CLAMP, OETIKER, S/S, 19/32"
5	1	111646	TEE, BRASS, 3/8" BRASS
8	3	300407	FILTER, ELECTRICAL
9	6	300509	TERMINAL, 18-22 AWG PIGGY BACK

**ASSEMBLY, WATER VALVE**

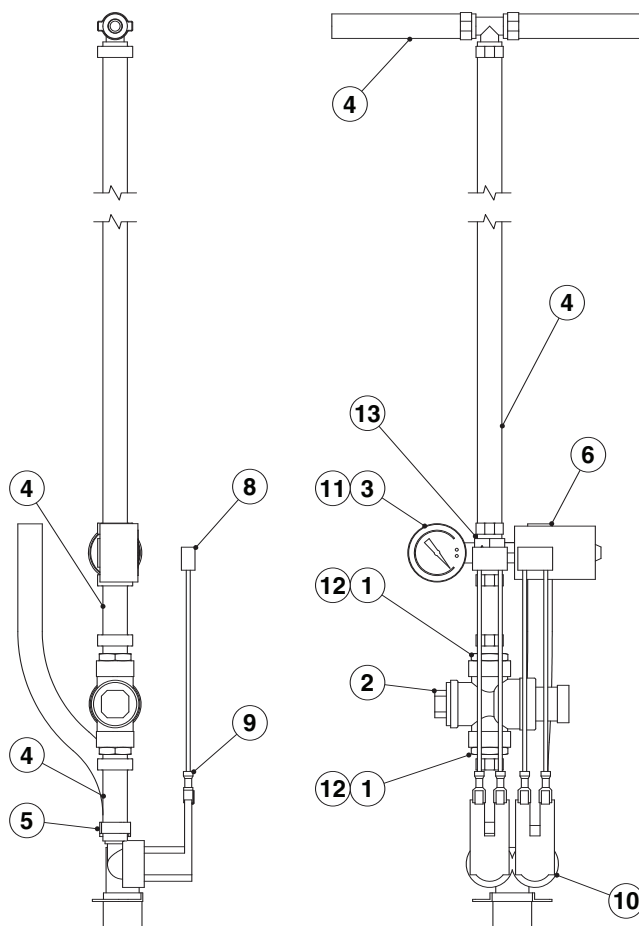
*OGB 20.20 MODELS*



ITEM	QTY	PART NO.	DESCRIPTION
1	1	300456	VALVE ASSY. 2 WAY 120VAC
2	2	111498	HOSE, SILICONE, 3/8" ID (SPECIFY LENGTH)
3	2	111647	CLAMP, OETIKER, S/S, 19/32"
4	2	300407	FILTER, ELECTRICAL
5	4	300509	TERMINAL, 18-22 AWG PIGGY BACK

# ASSEMBLY, WATER VALVE

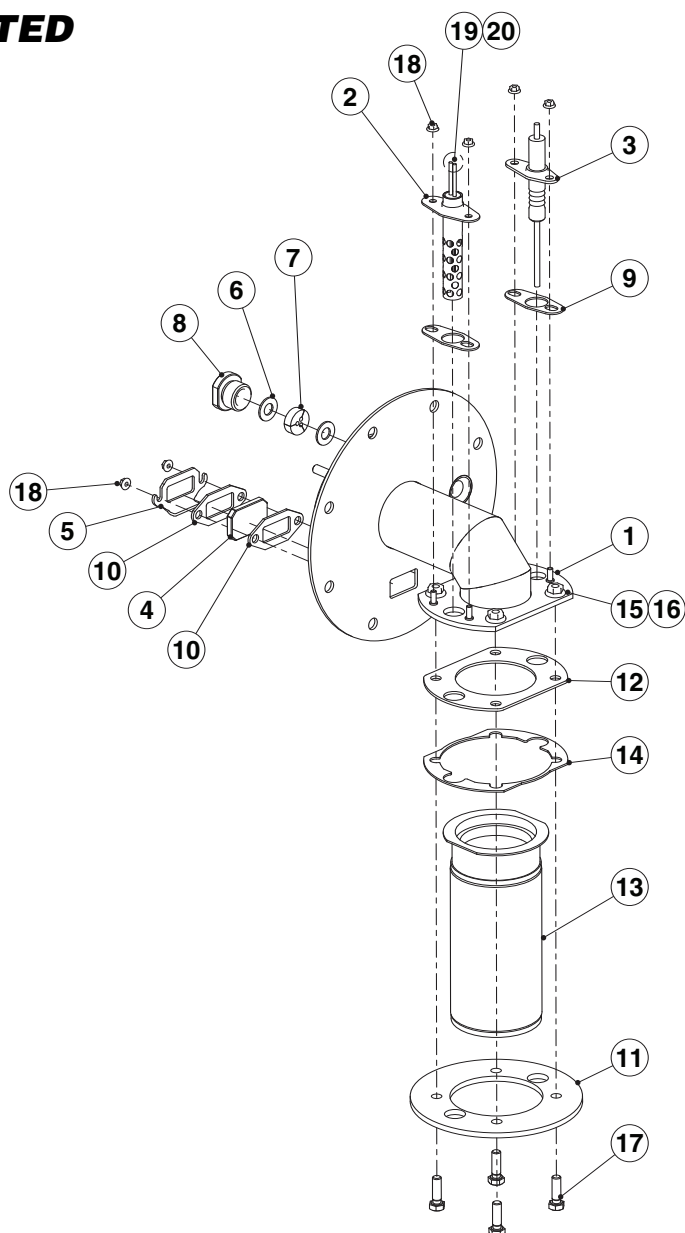
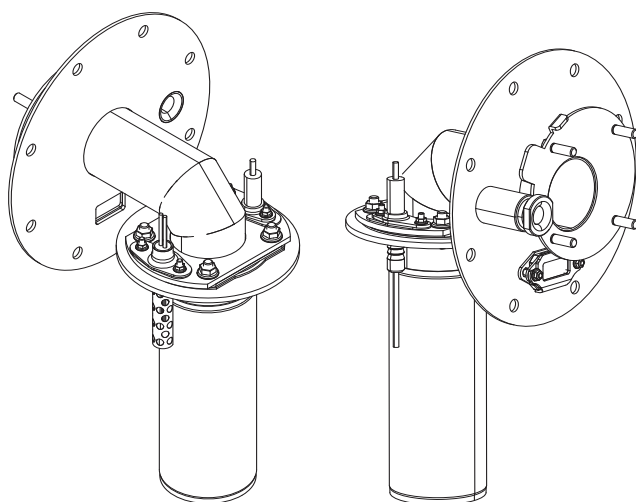
OGS 20.20 MODELS



ITEM	QTY	PART NO.	DESCRIPTION
1	2	C6015401	BARB, 1/2 R X 3/8 HOSE
2	1	C5001085	PRESSURE REGULATING VALVE ODGAS
3	1	C6006140	GAUGE, 60 PSI BOTTOM MOUNT
4	6	111498	HOSE, SILICONE, 3/8" ID (SPECIFY LENGTH)
5	9	111647	CLAMP, OETIKER, S/S, 19/32"
6	1	C5009063	PUSH BUTTON SWITCH, INJ, (CHANGE-OVER CONTACT)
8	2	300407	FILTER, ELECTRICAL
9	4	300509	TERMINAL, 18-22 AWG PIGGY BACK
10	1	300456	VALVE ASSY. 2 WAY 120VAC
11	A/R	00945	TAPE, TEFLON, 1/2"
12	A/R	111651	SEALANT, LOCTITE, WHITE, DRI-SEAL, 513
13	1	C6015234	CROSS, 3/8 HOSE BARB
16	1	111646	TEE, BRASS, 3/8" BRASS

# **BURNER INSERT, HL, PRE-MOUNTED**

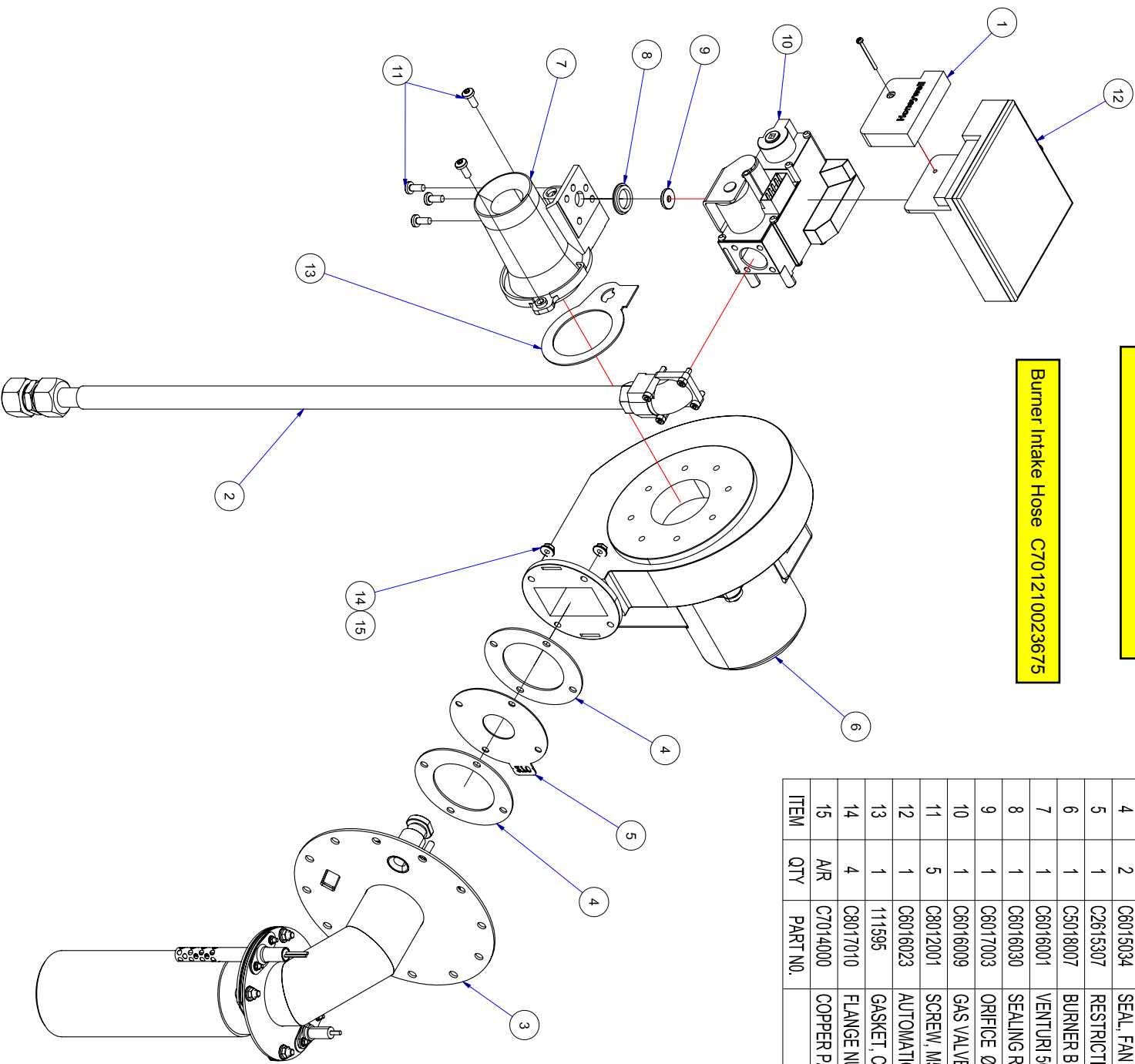
ALL GAS MODELS



ITEM	QTY	PART NO.	DESCRIPTION
1	1	C2010050	BURNER INSERT HL, 6.10/6.20, WELDMENT
	1	C2010052	BURNER INSERT, HL, 10.10/20.10, WELDMENT
2	1	C4018001	AUTO-IGNITION ELECTRODE
3	1	C4018000	MONITORING ELECTRODE
4	1	C3015004	INSPECTION GLASS, BURNER
5	1	C2614845	COVER, INSPECTION GLASS, BURNER
6	2	C6015240	WASHER, CABLE BUSHING, BURNER INSERT
7	1	C6015041	SEAL, CABLE BUSHING BURNER INSERT
8	1	C6015238	SCREW CONNECTION, CABLE BUSHING, BURNER INSERT
9	2	C2614849	LINING PLATE, ELECTRODE, GAS
11	1	C2614842	CLAMPING FLANGE, BURNER, HL, ø 50
10	2	C6015039	SEAL, INSPECTION GLASS, BURNER
12	1	C6015032	SEAL, BURNER ø 50 MM
13	1	C2010014	BURNER, ø 50 x150, 20 KW
14	1	C2615367	FLANGE, BURNER
15	A/R	C7014000	COPPER PASTE
16	4	C8017010	FLANGE NUT
17	4	C8003095	HEXAGON BOLT, M5x16, HUD 20.20
18	6	C8017008	NUT, LOCKING, SERRATED
19	1	300484	TERM, PUSHON, .110, 22-16AWG SEMI INSUL. (NOT SHOWN)
20	1	20351	TERM, SLIPON FULL INSUL .032X.25 TAB 22-18AWG (NOT SHOWN)

Burner insert 20.20 L.P.  
C2614863-1

Burner Intake Hose C701210023675



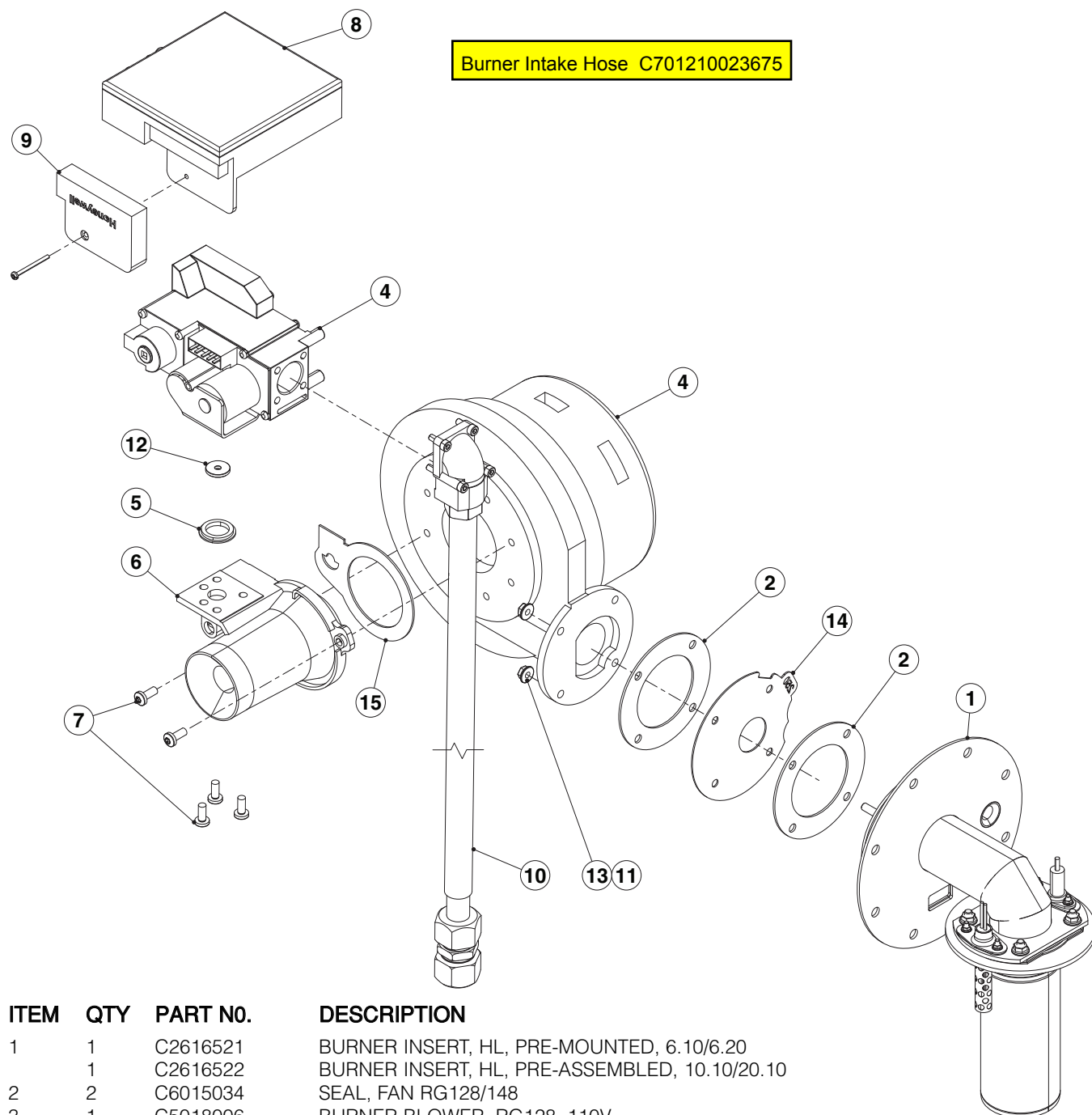
1	1	C6016025	COVER, AUTOMATIC FIRING DEVICE
2	1	C2616516	GAS HOSE, 580 LG, PREASSEMBLED
3	1	C2616523	ASSEMBLY, BURNER INSERT, HOT AIR, 10.20/12.20/20.20
4	2	C6015034	SEAL, FAN RG128/148 P3
5	1	C2615307	RESTRICTION FLANGE RG148 0270
6	1	C5018007	BURNER BLOWER RG148 110V
7	1	C6016001	VENTURI 56 KW P3
8	1	C6016030	SEALING RING, GAS SCREEN, P3
9	1	C6017003	ORIFICE Ø440 P3
10	1	C6016009	GAS VALVE, HONEYWELL, 110V, P3
11	5	C8012001	SCREW, M5x12, FILLISTER HD, TORX
12	1	C6016023	AUTOMATIC FIRING DEVICE, 110V, AUTO-IGNITION, P3
13	1	111595	GASKET, CORK, BURNER VENTURI, COMBI
14	4	C8017010	FLANGE NUT, M5, A4, P3
15	A/R	C7014000	COPPER PASTE
ITEM	QTY	PART NO.	DESCRIPTION



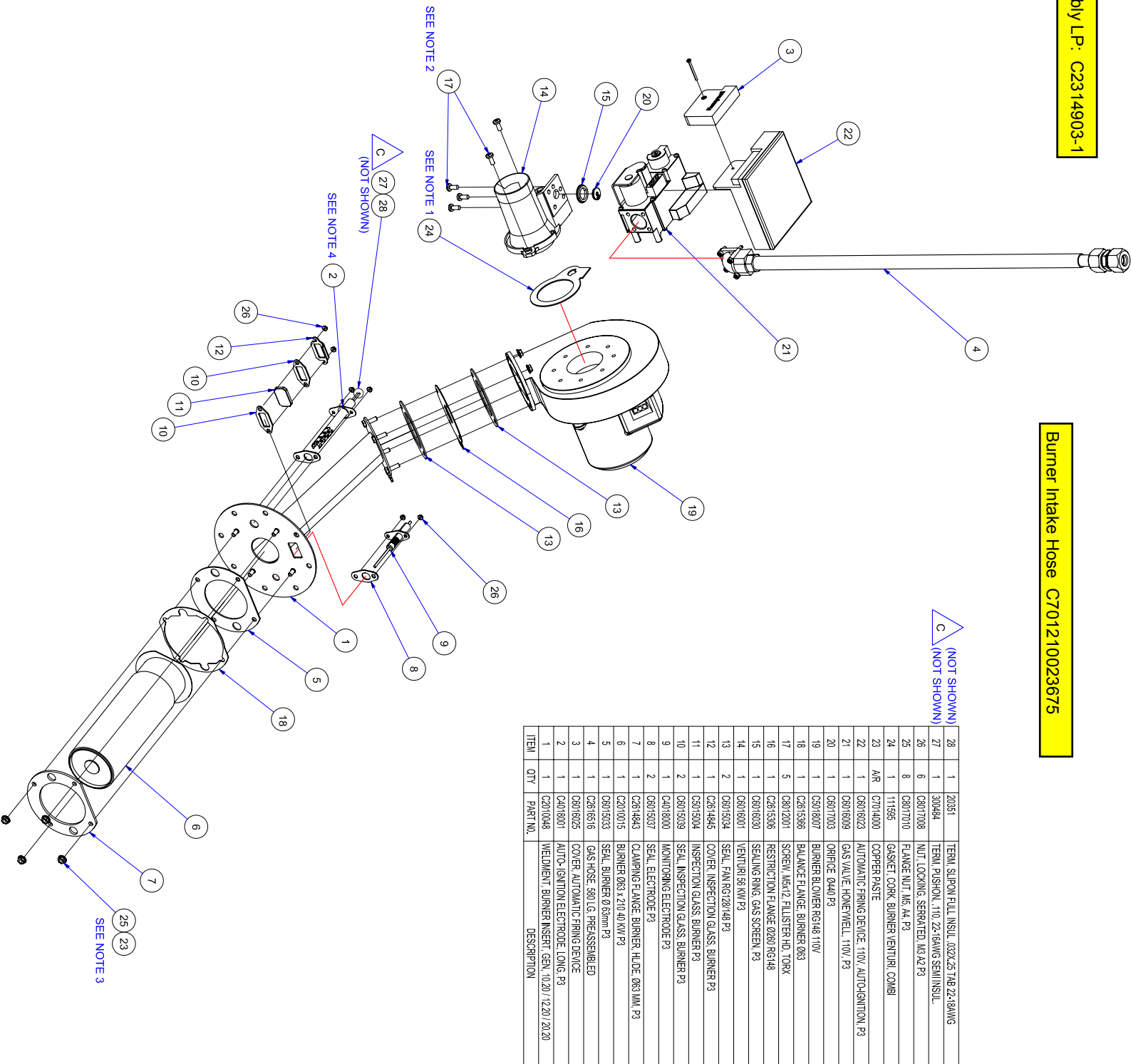


# ASSEMBLY, BURNER INSERT, AIR, LP & NAT GAS

## ALL GAS MODELS

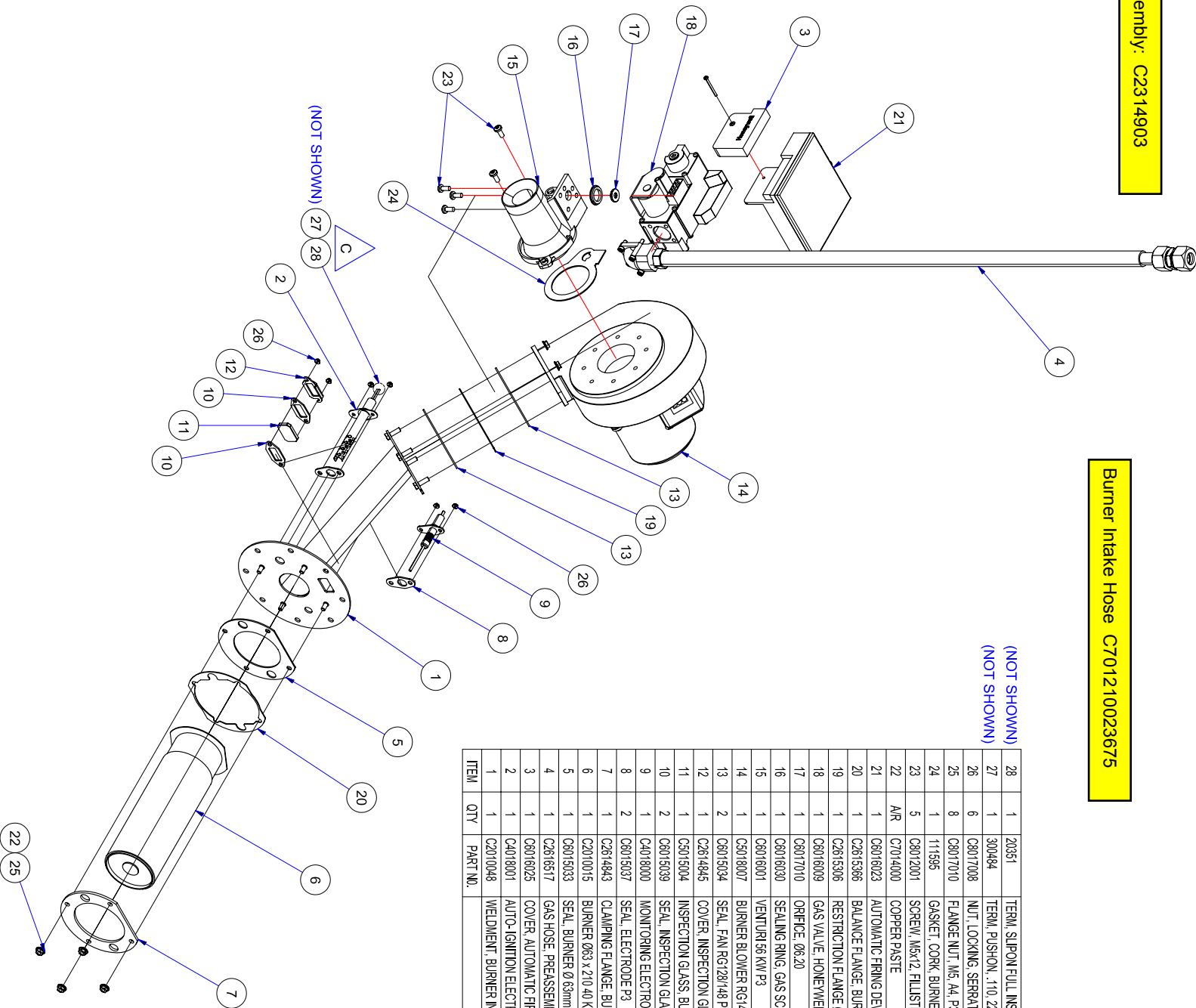


ITEM	QTY	PART NO.	DESCRIPTION
1	1	C2616521	BURNER INSERT, HL, PRE-MOUNTED, 6.10/6.20
	1	C2616522	BURNER INSERT, HL, PRE-ASSEMBLED, 10.10/20.10
2	2	C6015034	SEAL, FAN RG128/148
3	1	C5018006	BURNER BLOWER, RG128, 110V
4	1	C6016009	GAS VALVE, HONEYWELL, 110V
5	1	C6016030	SEALING RING, GAS SCREEN
6	1	C6016000	VENTURI 40 KW
7	5	C8012001	SCREW, M5x12, FILLISTER HD, TORX
8	1	C6016023	AUTOMATIC FIRING DEVICE, 110V, AUTO-IGNITION
9	1	C6016025	COVER, AUTOMATIC FIRING DEVICE
10	1	C2616516	GAS HOSE, 580mm LG, PREASSEMBLED, 6.20
	1	C2616517	GAS HOSE, 780mm LG, PREASSEMBLED, 10.10/20.10
11	A/R	C7014000	COPPER PASTE
12	1	C6017001	ORIFICE $\varnothing$ 400, LP GAS
	1	C6017009	ORIFICE, $\varnothing$ 0565 NAT GAS
13	4	C8017010	FLANGE NUT
14	1	C2615355	FLANGE, RESTRICTION $\varnothing$ 250
15	1	111595	GASKET, CORK, BURNER VENTURI, COMBI



Complete Assembly: C2314903

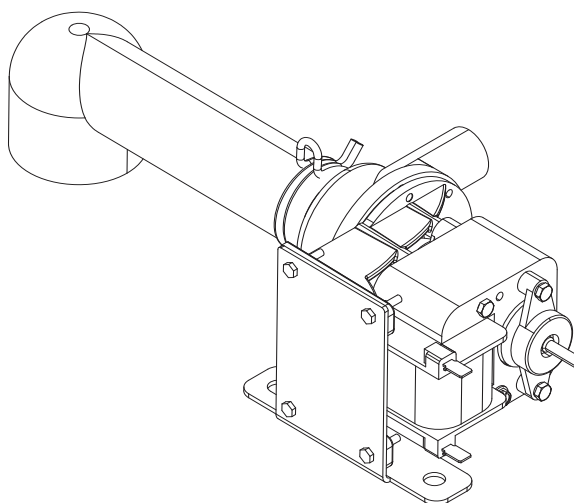
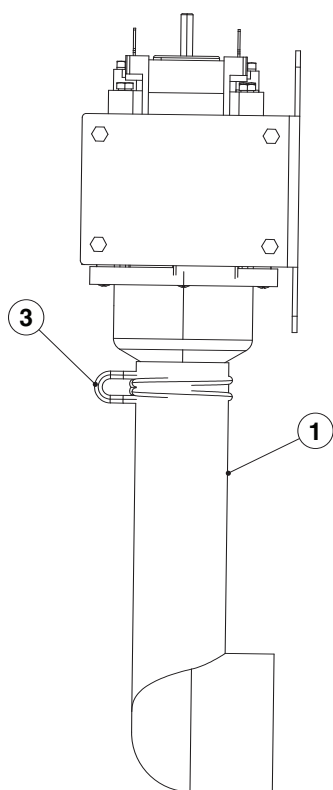
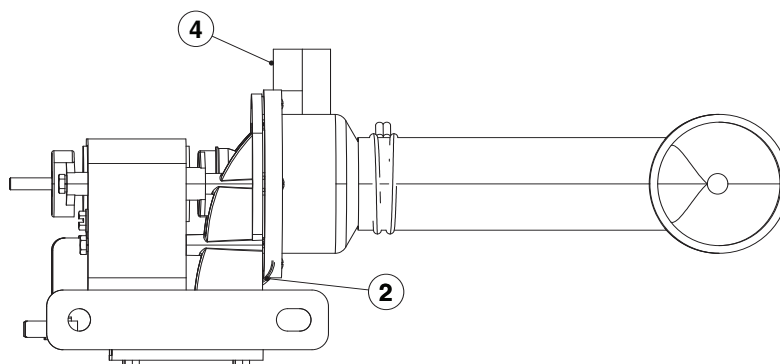
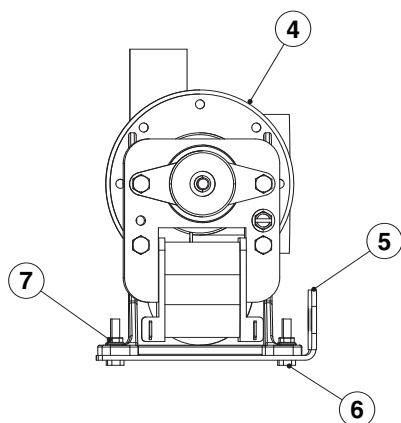
Burner Intake Hose C701210023675



(NOT SHOWN)		28	1	20351	TERM. SLIPON FULL INSUL. .032X.25 TAB 22-16AWG
(NOT SHOWN)		27	1	300494	TERM. PUSHON .110. 22-16AWG SEMI INSUL.
		26	6	C6017008	NUT, LOCKING, SERATED, M3 M2 P3
		25	8	C6017010	FLANGE NUT, M5, A4, P3
		24	1	111595	GASKET, CORK, BURNER VENTURI, COMBI
		23	5	C6012001	SCREW, M5x12, FILISTER HD, TORX
		22	AIR	C7014000	COPPER PASTE
		21	1	C6016023	AUTOMATIC FRING DEVICE, 110V, AUTOIGNITION, P3
		20	1	C2615366	BALANCE FLANGE, BURNER 063
		19	1	C2615306	RESTRICTION FLANGE 0260 RG148
		18	1	C6016009	GAS VALVE, HONEYWELL, 110V, P3
		17	1	C6017010	ORIFICE, 06.20
		16	1	C6016030	SEALING RING, GAS SCREEN, P3
		15	1	C6016001	VENTURI 56 KW P3
		14	1	C3018007	BURNER BLOWER RG148 110V
		13	2	C6015034	SEAL, FAN RG128/148 P3
		12	1	C2614845	COVER, INSPECTION GLASS, BURNER P3
		11	1	C6015004	INSPECTION GLASS, BURNER P3
		10	2	C6015039	SEAL, INSPECTION GLASS, BURNER P3
		9	1	C4016000	MONITORING ELECTRODE P3
		8	2	C6015037	SEAL, ELECTRODE P3
		7	1	C2614843	CLAMPING FLANGE, BURNER, H.L.D.E. 063 MM, P3
		6	1	C2010015	BURNER 063 x 210 40 KW P3
		5	1	C6015033	SEAL, BURNER Ø 63mm P3
		4	1	C2616617	GAS HOSE, PREASSEMBLED, 760mm LONG
		3	1	C6016025	COVER, AUTOMATIC FRING DEVICE
		2	1	C4018001	AUTO-IGNITION ELECTRODE, LONG, P3
		1	1	C2010048	WELDMENT, BURNER INSERT, GEN. 10.20 / 12.20 / 20.20
ITEM	QTY	PART NO.	DESCRIPTION		

# **PUMP, STEAM GENERATOR, GAS, 110V**

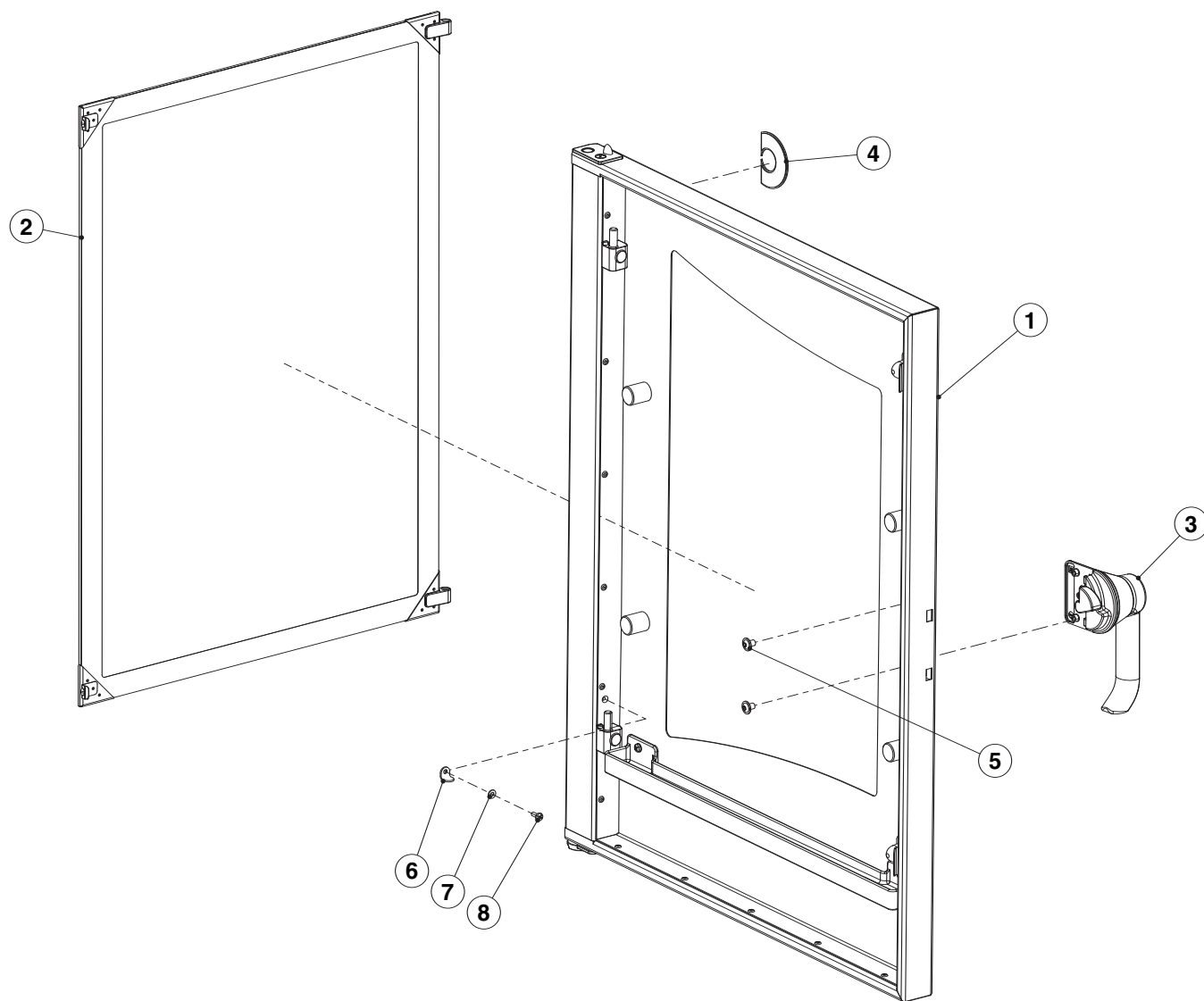
ALL GAS MODELS



ITEM	QTY	PART NO.	DESCRIPTION
1	1	<b>C6015101</b>	DRAIN ELBOW FOR STEAM GENERATOR
2	1	C6005299	SUPPORT BUSHING, STEAM GENERATOR - PUMP
3	1	C8009057	WIRE CLAMP D: 36, BLACK
4	1	300506	DRAIN PUMP WITH 110 V MOTOR
5	1	111630	BRACKET, PUMP, GAS GEN
6	4	111633	SCREW, HEX HD, M3 x 16, SST, FULLY THREADED
7	4	C8017008	NUT, LOCKING, SERRATED

# DOOR COMPLETE

20.20 MODELS



Complete Door C2514356

Cross Gasket C7001077

Spring clip C6015248

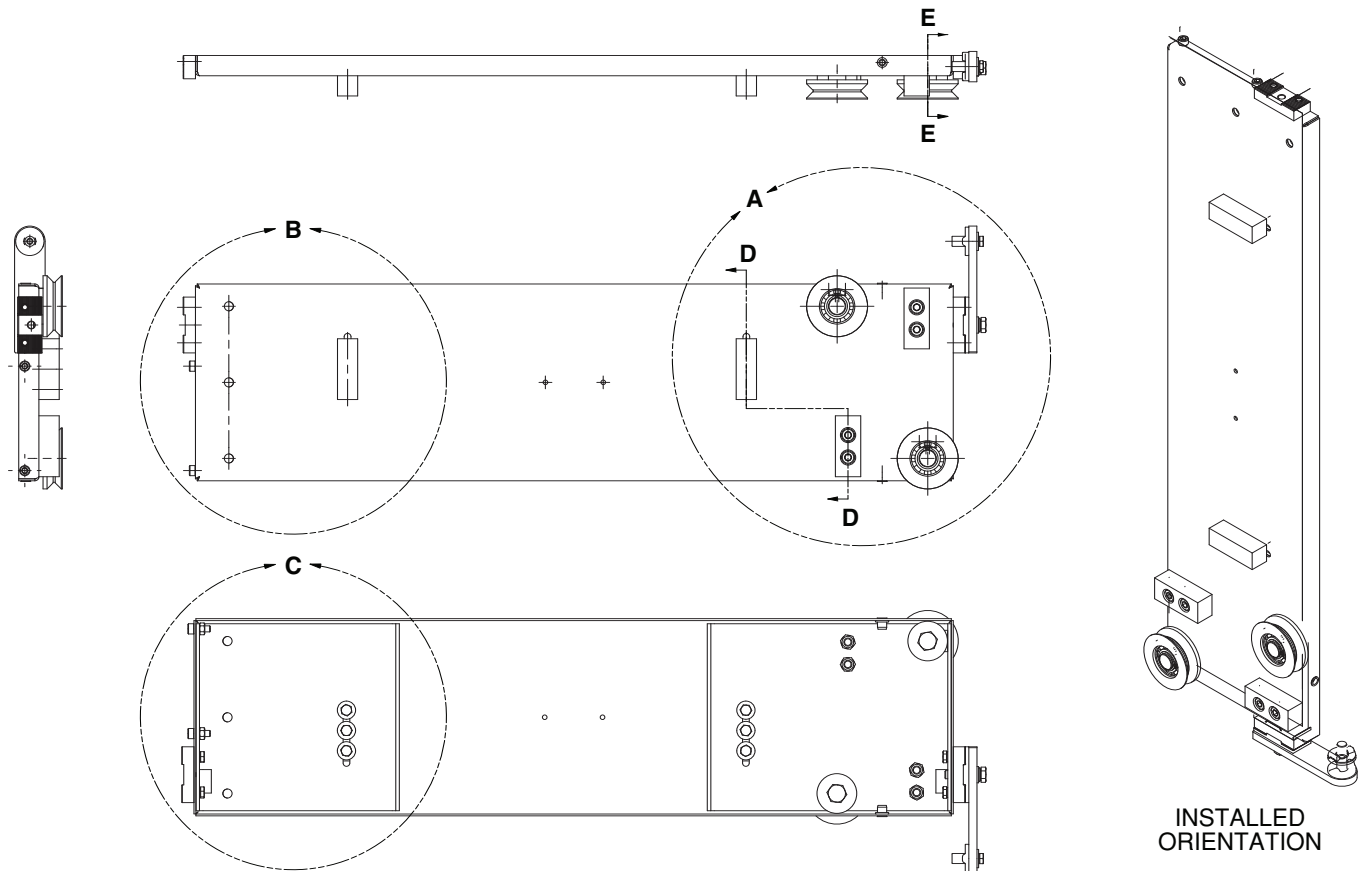
ITEM	QTY	PART NO.	DESCRIPTION
1	1	C2514363	ASSEMBLY, OUTER DOOR, 20.20
2	1	C2514394	ASSEMBLY, INNER DOOR, 20.20
3	1	C6012000	DOOR HANDLE, LOCKING
4	1	C6009016	PLASTIC LETTER "C" RED
5	2	C8015000	MLF SCREW M6X8
6	1	C2514430	UNHINGING SAFEGUARD, DOOR
7	1	C8001024	SCREW, FILISTER HD, M4x10 DIN 7985
8	1	C8005021	WASHER, 4.3, DIN 125
9	A/R	C7004012	LOCTITE 243 (NOT SHOWN)
10	A/R	C7003087	GREASE FRONT DOORS OD

# SLIDING PLATE, COMPLETE

Page 1 of 2

ALL 6.20, 10.10 MODELS & 20.20 MODELS

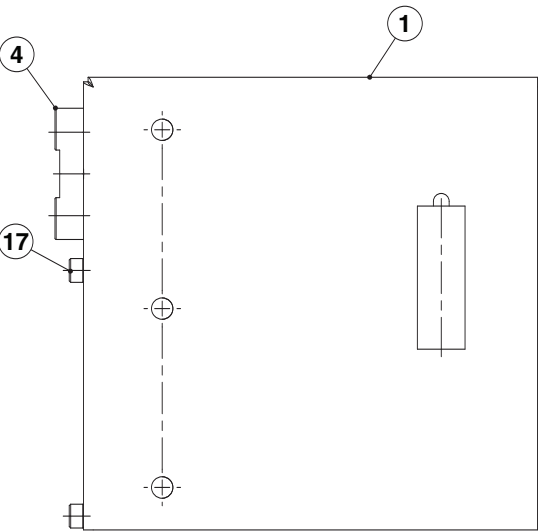
Siding Plate 20.20 C2614804



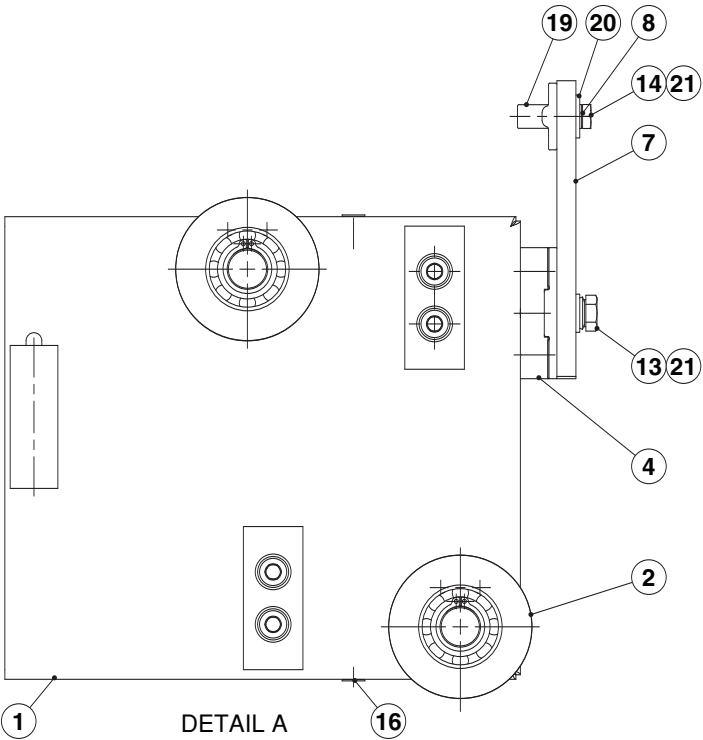
ITEM	QTY	PART NO.	DESCRIPTION
1	1	C2614806	CARRIAGE PLATE, WELDED, 6.20
		C2614807	CARRIAGE PLATE, WELDED, 10.10 & 10.20
		C2614809	CARRIAGE PLATE, WELDED, 20.10 & 20.20
2	2	C6012002	ASSEMBLED, GUIDE ROLLER RST CPL
3	2	C6012005	DISC $\varnothing$ 39 x 6 RST
4	2	C2014008	LOCKING BLOCK, CARRIAGE PLATE
5	2	C6015226	LOCKING BLOCK RST
6	2	C6012006	DOOR STOP, RST
7	1	C2013004	HINGE, LOWER, WELDMENT, DOOR
8	11	C8006057	SCHNORR LOCK WASHER
9	2	C8006063	SCHNORR-LOCK WASHER
10	5	C8006060	SCHNORR LOCK WASHER
11	4	C8004057	NUT, HEX
12	1	C8005050	WASHER, 8.4 A2 DIN 125
13	1	C8003058	HEXAGON BOLT, M8 X 35
14	11	C8003043	HEXAGON BOLT M6x16
15	4	C8013002	FILLISTER HEAD SCREW DIN 912 - M8X25
16	2	C8008095	BLIND RIVET NUT M6 ROUND
17	2	C8001073	HEXAGON SOCKET SCREW M6x16
18	2	C8004040	HEXAGON NUT
19	1	C2014004	LOCKING PLATE, CARRIAGE, LOWER PART
20	7	C8005041	WASHER 6.4 A2 DIN 9021
21	A/R	C7004014	LOCTITE 638
22	2	C8003066	BOLT, HEX HD, M10x30, 6.20, 10.10 & 10.20
		C8013000	BOLT, HEX HD, M10x25, 20.10 & 20.20

# SLIDING PLATE, COMPLETE

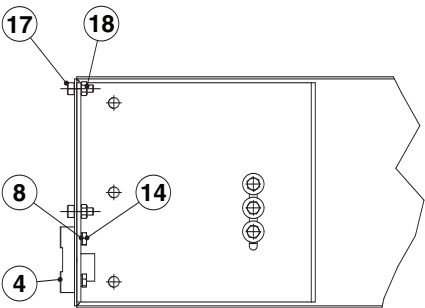
ALL 6.20, 10.10 MODELS & 20.20 MODELS



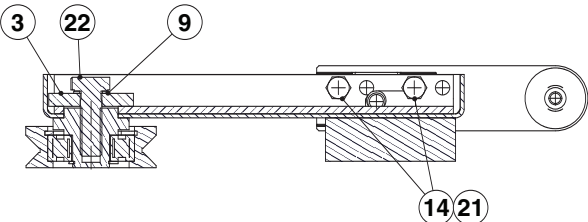
DETAIL B



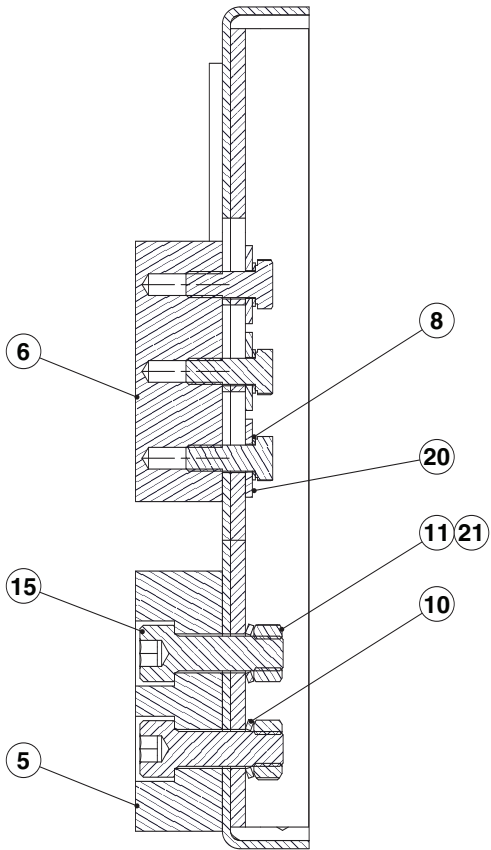
DETAIL A



DETAIL C



SECTION E-E

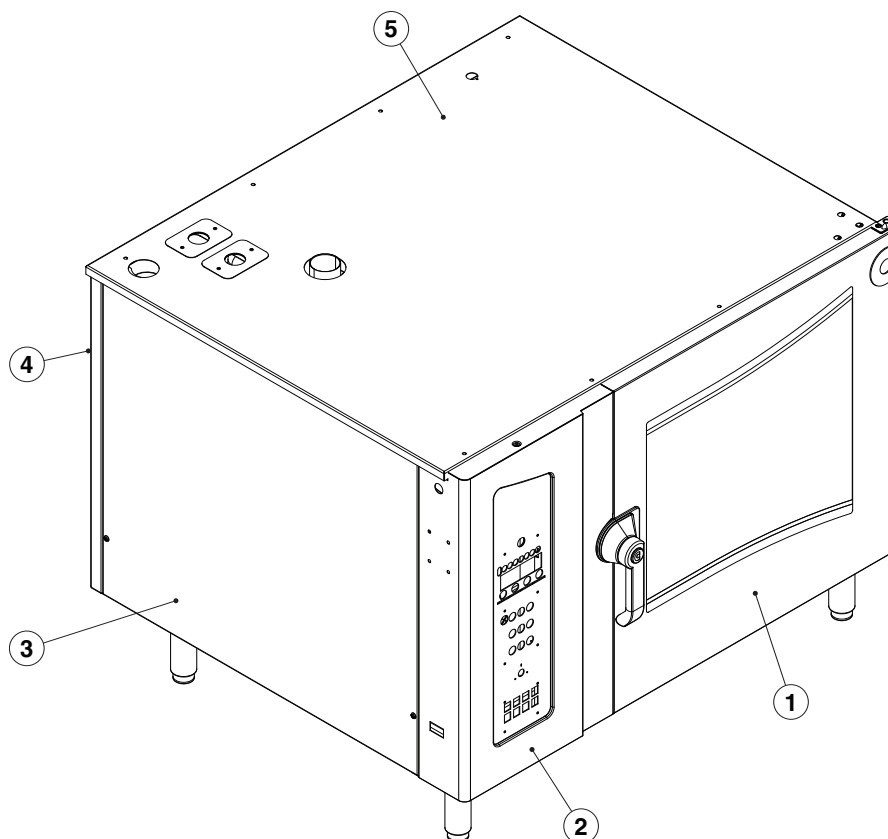


SECTION D-D



## EXTERIOR SHEETING

ALL 20.20 MODELS



ITEM	QTY	PART NO.	DESCRIPTION
1	1	C2514356	DOOR, 20.20, COMPLETE
2	1	C2114657	WELDMENT, CORNER, FRONT LEFT, 20.20
3	1	C2114787	PANEL ASSY, LEFT, OGB 20.20, OGS 20.20, OEB 20.20, OES 20.20
4	1	C2114767	PANEL ASSY, REAR, OGB 20.20
-	1	C2114747	PANEL ASSY, REAR, OGS 20.20, OEB 20.20, OES 20.20
5	1	C2115467	PANEL, TOP, OGB 20.20
-	1	C2115457	PANEL, TOP, OGS 20.20
-	1	C2114704	PANEL, TOP, OEB 20.20
-	1	111665	PANEL, TOP, OES 20.20

## CLEVELAND RANGE OGB 20.20 SEQUENCE OF OPERATIONS

*When using these instructions refer to the OGB 6.20 wiring schematic.*

- 1 When 120 VAC is applied to the combi, it is sent to the Power Control Switch (S1).
- 2 When the Power Control Switch (S1) is closed
  - a The red light in the switch is energized.
  - b 120 VAC is sent through the line filter (Z1) then through the 20 amp fuse (F10.1) to terminal L1 on the Motor Drive (U10.1)
  - c 120 VAC is sent through the line filter (Z2) then through the 20 amp fuse (F10.2) to terminal L1 on the Motor Drive (U10.2)
  - d 120vac is sent through the 2 amp fuse (F1.1) to
    - To terminals 1 and 2 of connector X1 on the Upper Hot Air Power Burner Control (U20)
    - To terminals 1 and 2 of connector X1 on the Steam Power Burner Control (U21)
    - To terminals 1 and 2 of connector X1 on the Lower Hot Air Power Burner Control (U22)
    - The 12 VDC Power Supply (G1)
      - ◇ 12 VDC is sent to terminals 1 and 2 of connector X28 on the Gas Board (A20)
      - ◇ 12 VDC is sent to terminal 3 and 4 of connector X10 on the Control Board (A10)
    - To terminal 1 of connector X12 on the Control Board (A10)
  - e With 12 VAC to the Control Board (A10) The Operation Board (A11) is energized
    - An alarm will sound for one second
    - All the LED's and the display will energize one at a time.
    - "STARTING" will be displayed for 3 seconds
    - "Please wait" will be displayed
    - The international model number will be displayed
    - The time and date will be displayed and this will continue until the on/off switch is depressed.
- 3 When the ON/OFF is depressed with the combi in the steam mode
  - a After a date change (the first time the combi is turned on) the display will ask "Generator Flush?". If no answer is given in 10 seconds or a yes is indicated the flush will begin.
    - 120 VAC is sent from terminal 1 of connector X13 on the Control Board (A10) to the Generator Pump (M4).
    - As the water level drops below the probes the fill solenoid (Y3) will energize. This rocking of the water will help flush scale from the generator.

- If the condensate box is heated to 140 degrees F at the B3probe, 120 VAC is sent from terminal 5 of connector X12 to the condenser valve (Y1) until the temperature drops.
- b The display will show the set temperature and set time when the flush is done or a negative reply is made to the “Generator Flush?”.
- c The Control Board (A10) will check the water level by looking for a ground at terminals 1 and 2 on connector X15. These are connected to the high and low probes (B1) in the steam generator.
  - If the ground is not found 120 VAC is sent from terminal 7 on connector X12 on the Control Board (A10) to the fill solenoid (Y3)
  - The fill solenoid opens and the generator is filled until both probes are grounded.
    - ◊ If the top probe becomes ungrounded for more that 5 seconds the fill solenoid (Y3) will energize.
    - ◊ If the bottom probe becomes ungrounded the combi will fill immediately and the combi will not heat
- d When terminal 2 on connector X15 is grounded, the Control Board (A10) sends 120 VAC to
  - The primary of the Hot Air 24v Transformer (T1)
    - ◊ 24 VAC is sent from the secondary of the transformer to the Hot air Burner Control (N20)
  - The primary of the Steam 24v Transformer (T2)
    - ◊ 24 VAC is sent from the secondary of the transformer to the Steam Burner Control (N21)
  - Terminal 1 on connector X20 of the Gas Control Board (A20)
  - Terminal 12 on connector X1 of the Upper Hot Air Control Module (N20)
  - Terminal 12 on connector X1 of the Steam Control Module (N22)
  - Terminal 12 on connector X1 of the Lower Hot Air Control Module (N22)
- e If the Steam Generator temperature is less than 190 dgreees the Control board transmits and receives a signal from terminals 5,6,7 and 8 on connector X10 to terminals 3,4,5 and 6 of connector X28 on the Gas Board (A20)
  - The Gas Board (A20) begins the steam generator heat circuit
    - ◊ A signal is sent from terminal 8 of connector X24 to terminal 4 of connector X2 on the Steam Power Burner and Fan Control (U21) selecting the set speed of the combustion blower.
      - (a) When this speed is attained the signal is sent from terminal 2 of connector X2 on the Steam Power Burner and Fan Control (U21) to terminal 9 of connector X24 on the Gas Board (A20)
    - ◊ A request for heat is sent from terminal 3 of connector X21 on the Gas Board (A20) to terminal 10 on connector X1 on the Steam Burner Control Module (N21)
      - (a) 120 VAC is sent from terminal 8 of connector X1 of the Steam Burner Control Module through the high limit (B7.2) to terminal 7 of connector X1 of the Steam Burner Control Module

- (b) 24 VAC is sent from terminal 2 of connector X2 on the Steam Burner Control Module (N21) to the hot surface igniter (R20).
- (c) The gas valve is energized allowing gas and air into the burner chamber to be ignited by the hot surface igniter.
- (d) The Steam Burner Control Module (N21) senses between 0.5 and 4.0 micro-amps DC from the flame sensor (P1) at terminal 3 of connector X2 (within 4 seconds) and sends a signal from terminal 2 of connector X1 to terminal 11 of connector X25 on the Gas Board (A20)
- The steam generator heat circuit continues until 190 degrees F is detected from the Steam Generator probe (B4) at terminals 1 and 2 of connector X17 on the Control Board (A10)
- 4 With the combi in the steam mode with time on the timer, the door closed and the start switch is depressed
  - a The front display will include a lighted bar under the steam symbol
    - When the heat circuit is energized the heat symbol will be energized
    - The cooking mode symbol will be energized.
    - The time display will invert and begin to count down.
  - b The fan circuit is energized by the Control Board (A10) transmitting and receiving a signal from terminals 5,6,7 and 8 on connector X10 to terminals 3,4,5 and 6 of connector X28 on the Gas Board (A20)
    - The Gas board (A20) Transmits a signal from terminal 3 of connector X26 to terminal 3 of connector X12 the Upper Motor Drive (U10.1)
      - ◇ 240 VAC 3 phase is sent from the Motor board to the Oven Fan motor (M1)
      - ◇ Every 120 seconds the rotation of the motor reverses.
    - **NOTE:** If the temperature is less than 212 degrees F than fan will be pulsed on for 2 seconds every 60 seconds after the cabinet set temp (B6) and the bypass probe (B5) are satisfied.
    - The Gas board (A20) Transmits a signal from terminal 7 of connector X26 to terminal 3 of connector X12 the Lower Motor Drive (U10.1)
      - ◇ 240 VAC 3 phase is sent from the Motor board to the Oven Fan motor (M1)
      - ◇ Every 120 seconds the rotation of the motor reverses.
      - ◇ **NOTE:** If the temperature is less than 212 degrees F than fan will be pulsed on for 2 seconds every 60 seconds after the cabinet set temp (B6) and the bypass probe (B5) are satisfied.
  - c The steam generator heat circuit is energized after the signal is received from the motor board that the blower motor is turning
    - A signal is sent from terminal 8 of connector X24 on the Gas Board (A20) to terminal 4 of connector X2 on the Steam Power Burner and Fan Control (U21) selecting the set speed of the combustion blower.
      - ◇ When this speed is attained the signal is sent from terminal 2 of connector X2 on the Steam Power Burner and Fan Control (U21) to terminal 9 of connector X24 on the Gas Board (A20)

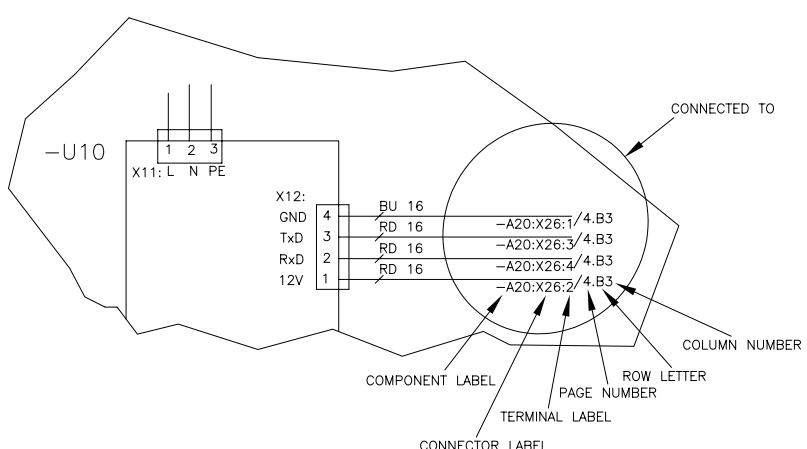
- A request for heat is sent from terminal 3 of connector X21 on the Gas Board (A20) to terminal 10 on connector X1 on the Steam Burner Control Module (N21)
    - ◇ 24 VAC is sent from terminal 2 of connector X2 on the Steam Burner Control Module (N21) to the hot surface igniter (R20).
    - ◇ The gas valve is energized allowing gas and air into the burner chamber to be ignited by the hot surface igniter.
    - ◇ The Steam Burner Control Module (N21) senses at least 1.5 micro amps DC from the flame sensor (P1) at terminal 3 of connector X2 and sends a signal from terminal 2 of connector X1 to terminal 11 of connector X25 on the Gas Board (A20).
  - The heat circuit continues until both the cabinet set temperature and the bypass probe (B5) are satisfied
    - ◇ **NOTE:** If the set temperature is above 212 degrees F the hot air circuit will be energized (after the bypass probe is satisfied) until the compartment setting is reached. The steam circuit always takes precedence.
  - d When the condensate box is heated to 140 degrees F at the B3 probe, 120 VAC is sent from terminal 5 of connector X12 to the condenser valve (Y1) until the temperature drops.
  - e When the timer counts to 0 or the core temp probe (B10) reaches the set amount the cycle send and the steam generator reverts to the standby temperature of 190 degrees F.
  - f
- 5 With the combi in the Hot Air mode with time on the timer, the door closed and the start switch is depressed
- a The front display will include a lighted bar under the Hot Air symbol
    - When the heat circuit is energized the heat symbol will be energized
    - The cooking mode symbol will be energized.
    - The time display will invert and begin to count down.
  - b The fan circuit is energized by the Control Board (A10) transmitting and receiving a signal from terminals 5,6,7 and 8 on connector X10 to terminals 3,4,5 and 6 of connector X28 on the Gas Board (A20)
    - The Gas board (A20) Transmits a signal from terminal 3 of connector X26 to terminal 3 of connector X12 the Upper Motor Drive (U10.1)
      - ◇ 240 VAC 3 phase is sent from the Motor board to the Oven Fan motor (M1)
      - ◇ Every 120 seconds the rotation of the motor reverses.
    - **NOTE:** If the temperature is less than 212 degrees F than fan will be pulsed on for 2 seconds every 60 seconds after the cabinet set temp (B6) and the bypass probe (B5) are satisfied.
    - The Gas board (A20) Transmits a signal from terminal 7 of connector X26 to terminal 3 of connector X12 the Lower Motor Drive (U10.1)
      - ◇ 240 VAC 3 phase is sent from the Motor board to the Oven Fan motor (M1)

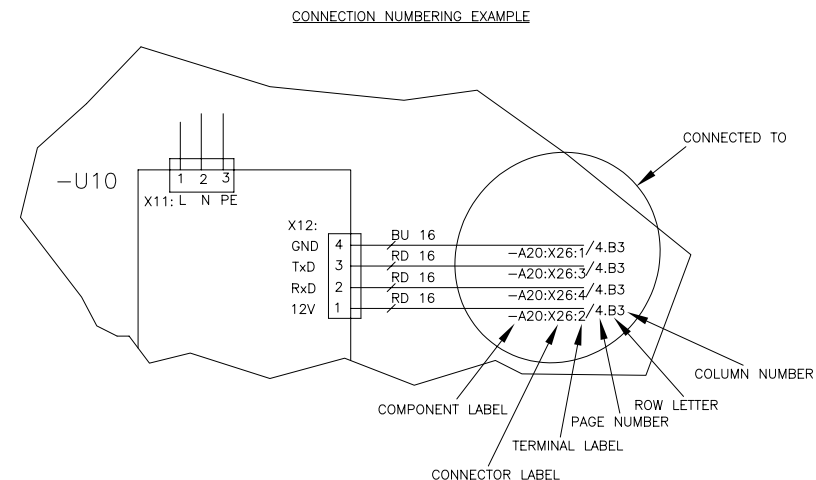
- ◇ Every 120 seconds the rotation of the motor reverses.
  - ◇ **NOTE:** If the temperature is less than 212 degrees F than fan will be pulsed on for 2 seconds every 60 seconds after the cabinet set temp (B6) and the bypass probe (B5) are satisfied.
- c Hot air heat circuit is energized
  - A signal is sent from terminal 2 of connector X24 on the Gas Board (A20) to terminal 4 of connector X2 on the Upper Hot Air Power Burner and Fan Control (U20) selecting the set speed of the combustion blower.
    - ◇ When this speed is attained the signal is sent from terminal 2 of connector X2 on the Upper Hot Air Power Burner and Fan Control (U20) to terminal 3 of connector X24 on the Gas Board (A20)
  - A request for heat is sent from terminal 3 of connector X20 on the Gas Board (A20) to terminal 10 on connector X1 on the Upper Hot Air Control Module (N20)
    - ◇ 24 VAC is sent from terminal 2 of connector X2 on the Upper Hot Air Control Module (N20) to the hot surface igniter (R20).
    - ◇ The gas valve is energized allowing gas and air into the burner chamber to be ignited by the hot surface igniter.
    - ◇ The Upper Hot Air Burner Control Module (N20) senses at least 1.5 micro amps DC from the Flame sensor (P1) at terminal 3 of connector X2 and sends a signal from terminal 2 of connector X1 to terminal 10 of connector X25 on the Gas Board (A20)
- d When the Upper Burner Assembly has proven flame, the Lower Hot Air heat circuit is energized
  - A signal is sent from terminal 8 of connector X24 on the Gas Board (A20) to terminal 4 of connector X2 on the Lower Hot Air Power Burner and Fan Control (U21) selecting the set speed of the combustion blower.
    - ◇ When this speed is attained the signal is sent from terminal 2 of connector X2 on the Hot Air Power Burner and Fan Control (U21) to terminal 8 of connector X24 on the Gas Board (A20)
  - A request for heat is sent from terminal 3 of connector X22 on the Gas Board (A20) to terminal 10 on connector X1 on the Hot Air Control Module (N22)
    - ◇ 24 VAC is sent from terminal 2 of connector X2 on the Hot Air Control Module (N20) to the hot surface igniter (R20).
    - ◇ The gas valve is energized allowing gas and air into the burner chamber to be ignited by the hot surface igniter.
    - ◇ The Hot Air Burner Control Module (N20) senses at least 1.5 micro amps DC from the Flame sensor (P1) at terminal 3 of connector X2 and sends a signal from terminal 2 of connector X1 to terminal 10 of connector X25 on the Gas Board (A20)
- e The heat circuit will remain energized until the cabinet set temperature is reached
- f When the condensate box is heated to 140 degrees F at the B3 probe, 120 VAC is sent from terminal 5 of connector X12 to the condenser valve (Y1) until the temperature drops.
- g If the “Crisp and Tasty” mode is selected

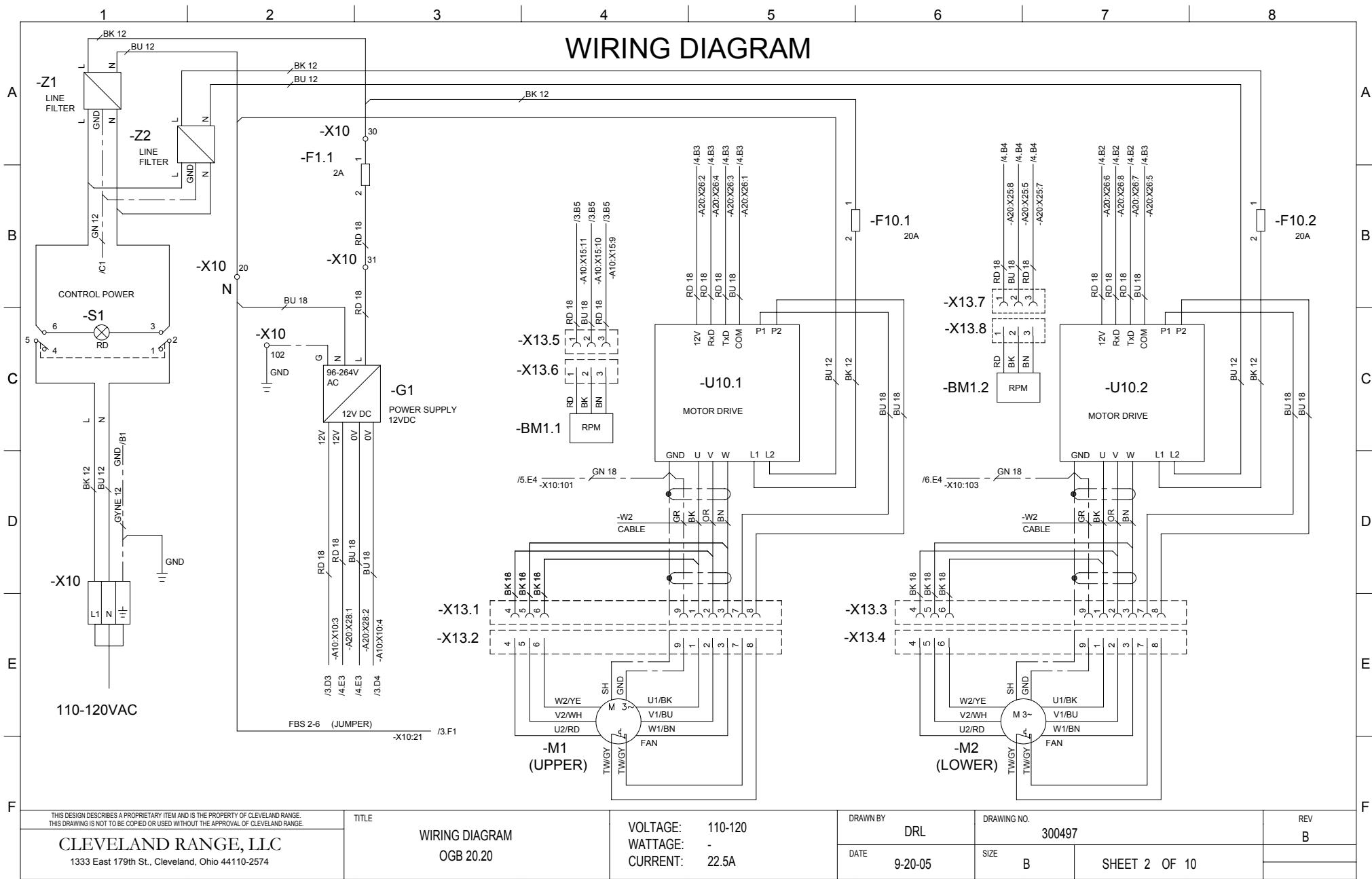
- 120 VAC is sent from terminal 6 of connector X12 on the Control Board (A10) to the Dehumidification Valve (Y2) to pull the humidity out of the cabinet down the drain.
  - ◇ In the light and medium modes (one and two drops in the display) the Y2 valve will be energized until the bypass probe (B5) is satisfied.
  - ◇ In the full mode (3 drops in the display) the Y2 valve will be energized continuously.
- h When the timer counts to 0 or the core temp probe (B10) reaches the set amount the cycle ends and the steam generator reverts to the standby temperature of 190 degree F.
  -
- i The heat circuit will remain energized until the cabinet set temperature is reached
- j When the condensate box is heated to 140 degrees F at the B3 probe, 120 VAC is sent from terminal 5 of connector X12 to the condenser valve (Y1) until the temperature drops.
- k If the “Crisp and Tasty” mode is selected
  - 120 VAC is sent from terminal 6 of connector X12 on the Control Board (A10) to the Dehumidification Valve (Y2) to pull the humidity out of the cabinet down the drain.
    - ◇ In the light and medium modes (one and two drops in the display) the Y2 valve will be energized until the bypass probe (B5) is satisfied.
    - ◇ In the full mode (3 drops in the display) the Y2 valve will be energized continuously.
- l When the timer counts to 0 or the core temp probe (B10) reaches the set amount the cycle ends and the steam generator reverts to the standby temperature of 190 degree F.
- 6 With the combi in the Combi mode with time on the timer, the door closed and the start switch is depressed
  - a The front display will include a lighted bar under the Combi symbol
    - When the heat circuit is energized the heat symbol will be energized
    - The cooking mode symbol will be energized.
    - The time display will invert and begin to count down.
  - b The fan circuit is energized by the Control Board (A10) transmitting and receiving a signal from terminals 5,6,7 and 8 on connector X10 to terminals 3,4,5 and 6 of connector X28 on the Gas Board (A20)
    - The Gas board (A20) Transmits a signal from terminal 4 of connector X26 to terminal 2 of connector X12 the Motor Drive (U10)
      - ◇ 240 VAC 3 phase is sent from the Motor board to the Oven Fan motor (M1)
      - ◇ Every 120 seconds the rotation of the motor reverses.
      - ◇ **NOTE:** If the temperature is less than 212 degrees F than fan will be pulsed on for 2 seconds every 60 seconds after the cabinet set temp (B6) and the bypass probe (B5) are satisfied.
- 7 With the combi in the Rethermalization mode with time on the timer, the door closed and the start switch is depressed
  - a The front display will include a lighted bar under the Retherm symbol

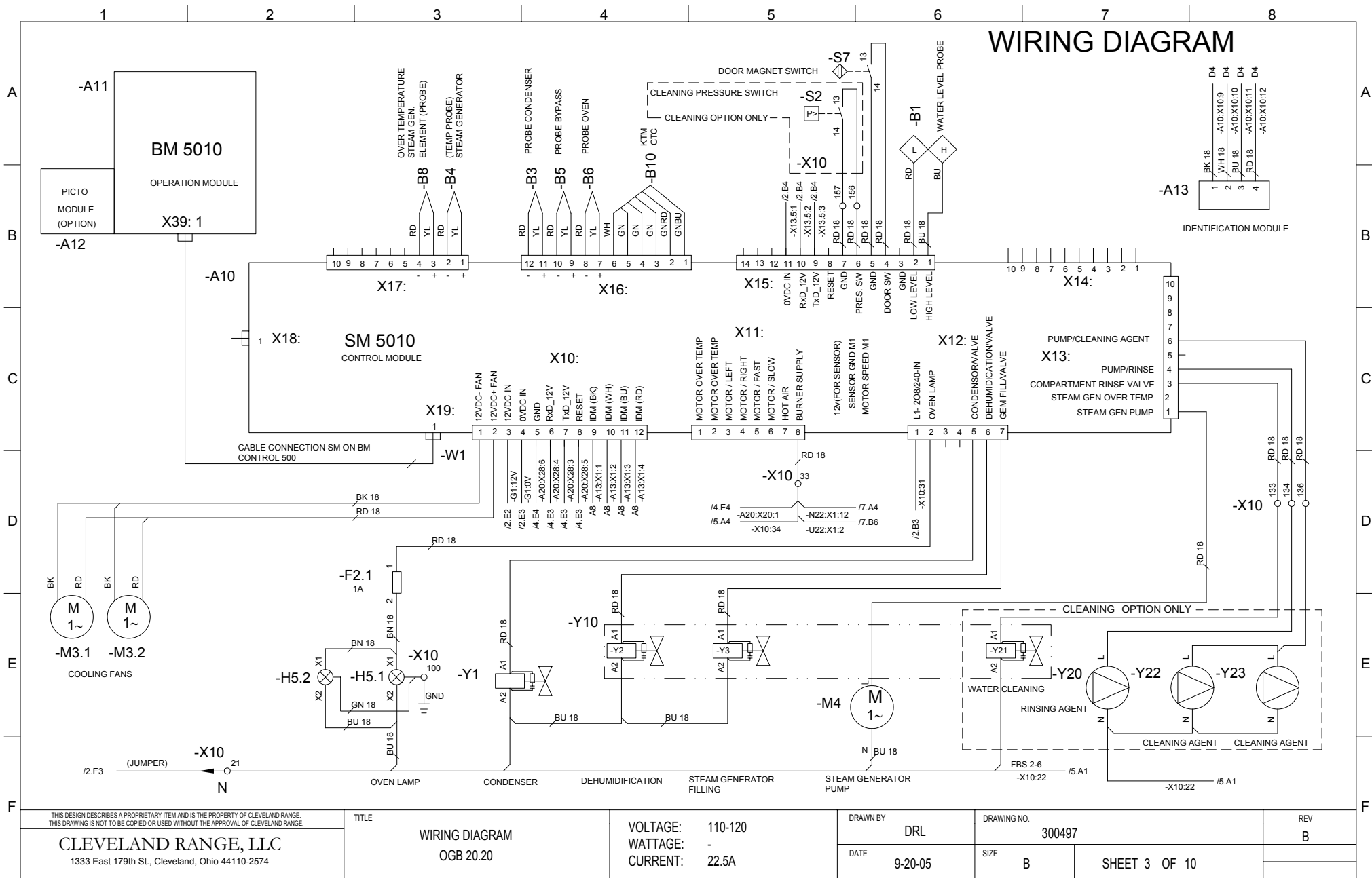
- When the heat circuit is energized the heat symbol will be energized
  - The cooking mode symbol will be energized.
  - The time display will invert and begin to count down.
- b The fan circuit is energized by the Control Board (A10) transmitting and receiving a signal from terminals 5,6,7 and 8 on connector X10 to terminals 3,4,5 and 6 of connector X28 on the Gas Board (A20)
- The Gas board (A20) Transmits a signal from terminal 4 of connector X26 to terminal 2 of connector X12 the Motor Drive (U10)
    - ◇ 220 VAC 3 phase is sent from the Motor board to the Oven Fan motor (M1)
    - ◇ Every 120 seconds the rotation of the motor reverses.
    - ◇ **NOTE:** If the temperature is less than 212 degrees F than fan will be pulsed on for 2 seconds every 60 seconds after the cabinet set temp (B6) and the bypass probe (B5) are satisfied.

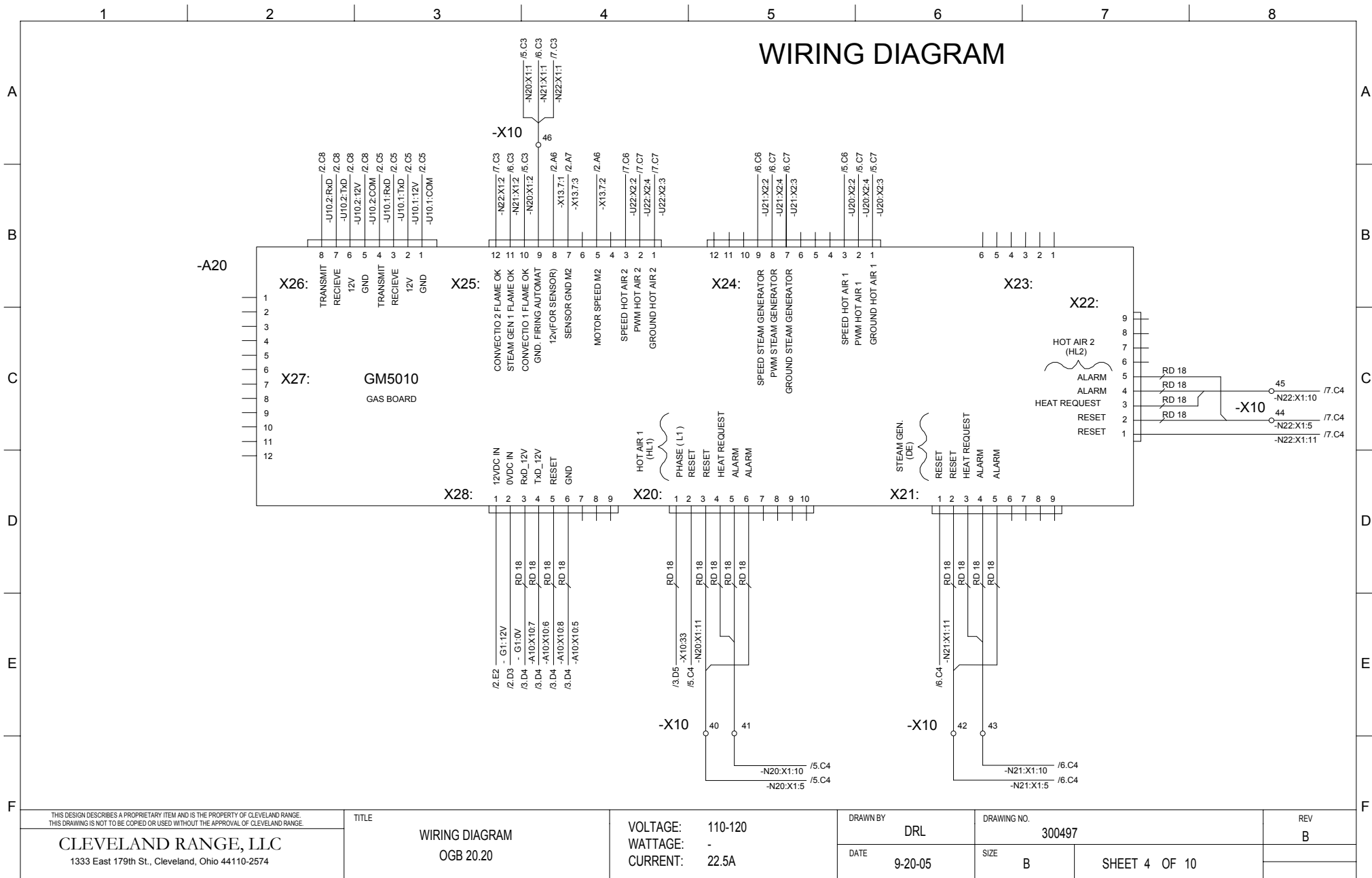


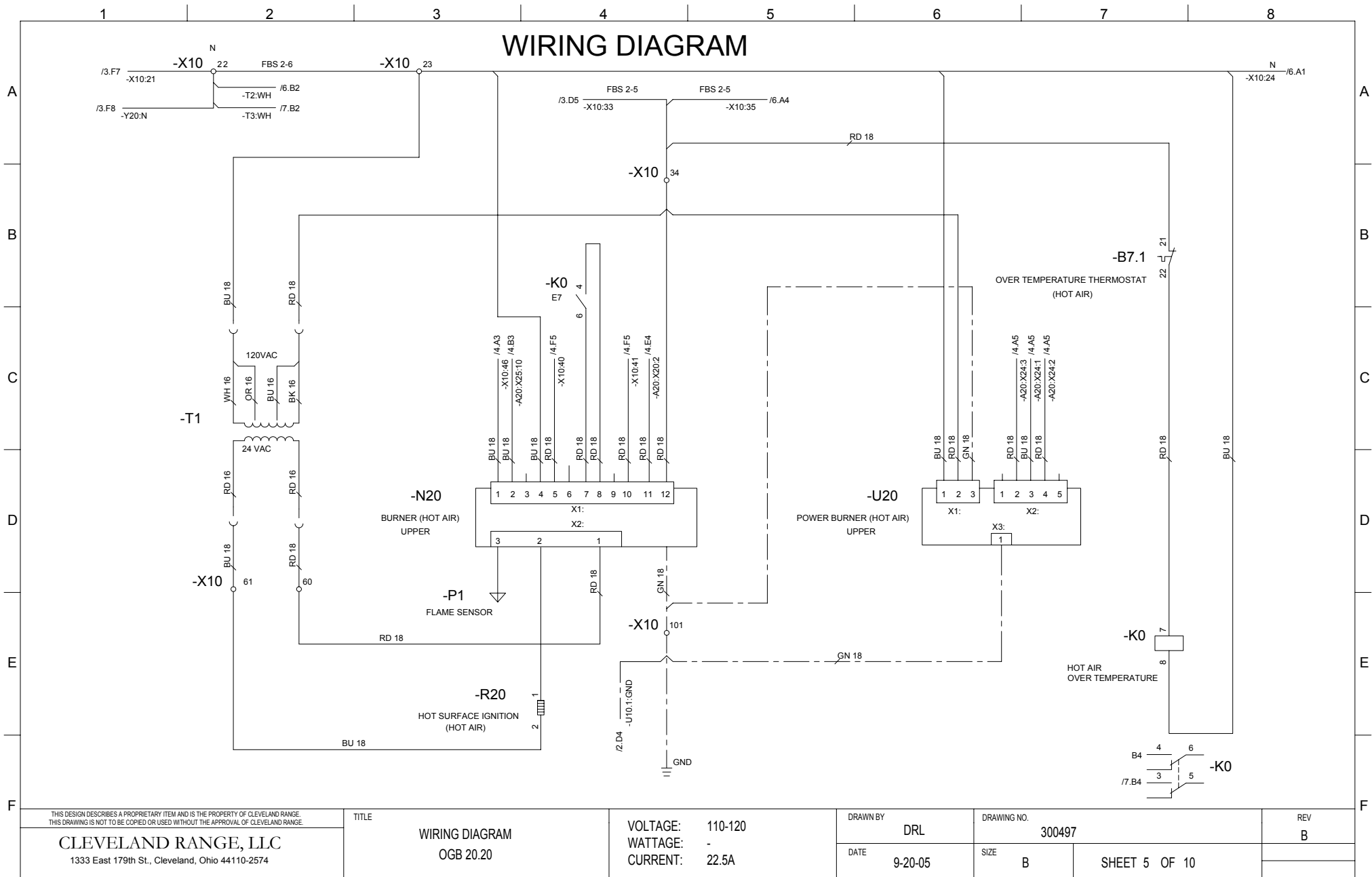
	1	2	3	4	5	6	7	8	
	PARTS LIST								
A	LABEL	DESCRIPTION	PART NO.	LOCATION	LABEL	DESCRIPTION	PART NO.	LOCATION	A
	-A10	CONTROL BOARD (SM 5010)	C5019100	3	-U20	POWER BURNER ASSY, HOT AIR	-	5.D6	
	-A11	OPERATION BOARD (BM 5010)	C5019101	3		FAN, BURNER, 120VAC	C5018007		
	-A12	PICTO BOARD (OPTION)	C5019105	3.B1	-U21	POWER BURNER ASSY, GEN.	-	6.D6	
	-A13	I.D. MODULE	C5019102	3.B8		FAN, BURNER, 120VAC	C5018007		
	-A20	GAS BOARD (GM5010)	C5019103	4	-U22	POWER BURNER ASSY, HOT AIR.	-	7.D6	
	-B1	WATER LEVEL PROBE	C5019003	3.A6		FAN, BURNER, 120VAC	C5018007		
	-B3	CONDENSOR PROBE	C5016007	3.B4	-W1	CABLE, 9 PIN COM.	300533	3.C3	
	-B4	STEAM GEN PROBE	C5016007	3.B3	-Y1	VALVE, CONDENSER, 120VAC	300455	3.E4	
	-B5	BYPASS PROBE	C5016007	3.B4		NOISE FILTER (RC)	300407	3.E4	
B	-B6	OVEN PROBE	C5016006	3.B4	-Y10	VALVE ASSY, 2 WAY, 120VAC	300456	3.E	B
	-B7.1	OVEN HI-TEMP THERMOSTAT	C5001041	5.B7		-Y2 VALVE, DEHUMID.	-	3.E	
	-B7.2	GEN. HI-TEMP THERMOSTAT	1089952	6.B4		-Y3 VALVE, GEN. FILL	-	3.E	
	-B8	GEN. HI-TEMP PROBE	C5016003	3.B3		NOISE FILTER (RC)	-	3.E	
	-B10	CORE TEMP. PROBE (KTM CTC)	C5013001	3.B4		VALVE ASSY, 3 WAY, 120VAC(CLEANING OPTION)	300363	3	
	-F1.1	FUSE, 3A	KE52936-6	2.B3		-Y2 VALVE, DEHUMID.	-	3	
	-F2.1	FUSE, 1A	300418	3.E3		-Y3 VALVE, GEN. FILL	-	3	
	-F10.1, -F10.2	FUSE, 20A	300471	2.B5, 2.B8		-Y21 VALVE, CLEAN/RINSE	-	3	
	-G1	POWER SUPPLY, 12VDC	300350	2.C3		NOISE FILTER (RC)	-		
	-H5.1,-H5.2	OVEN LAMP	C5005043	3.E3, 3.E2	-Y20	PUMP, RINSING AGENT, 120VAC(CLEANING OPTION)	300352	3.E7	
-K0	RELAY, 120VAC	03524	5.E7	-Y22	PUMP, CLEANING AGENT, 120VAC(CLEANING OPTION)	300352	3.E8		
	SOCKET	300473		-Y23	PUMP, CLEANING AGENT, 120VAC(CLEANING OPTION)	300352	3.E8		
-M1, M2	MOTOR, CONVECTION	C50180221	2.E4, 2.E6	-Z1,-Z2	LINE FILTER, 20A	300472	2.A1, 2.A2		
-M3.1,-M3.2	COOLING FAN	C5018023	3.E1						
-M4	PUMP, GEN.	300506	3.E6						
-N20	BURNER ASSY, HOT AIR	-	5.D3						
	VALVE, GAS, 120VAC	C6016009							
	CONTROL, BURNER, 120VAC	C6016023							
-N21	BURNER ASSY, GEN.	-	6.D3					D	
	VALVE, GAS, 120VAC	C6016009							
	CONTROL, BURNER, 120VAC	C6016023							
-N22	BURNER ASSY, HOT AIR	-	7.D3						
	VALVE, GAS, 120VAC	C6016009							
	CONTROL, BURNER, 120VAC	C6016023							
-P1,-P2,-P3	FLAME SENSOR	C4018000	5.D3, 6.D3, 7.D3						
-R20,-R21,-R22	IGNITOR, HOT SURFACE	C4018001	5.E4, 6.E3, 7.E3						
-S1	SWITCH, CONTROL POWER	19993	2.A1						
-S2	PRESSURE SWITCH	C5009055	3.A5						E
-S7	DOOR SWITCH	C5003075	3.A6						
-T1	TRANSFORMER, 120V/24V	300419	5.C2						
-T2	TRANSFORMER, 120V/24V	300419	6.C2						
-T3	TRANSFORMER, 120V/24V	300419	7.C2						
-U10.1, -U10.2	AC DRIVE	300462	2.C5, 2.C7						
				CONNECTION NUMBERING EXAMPLE					
									



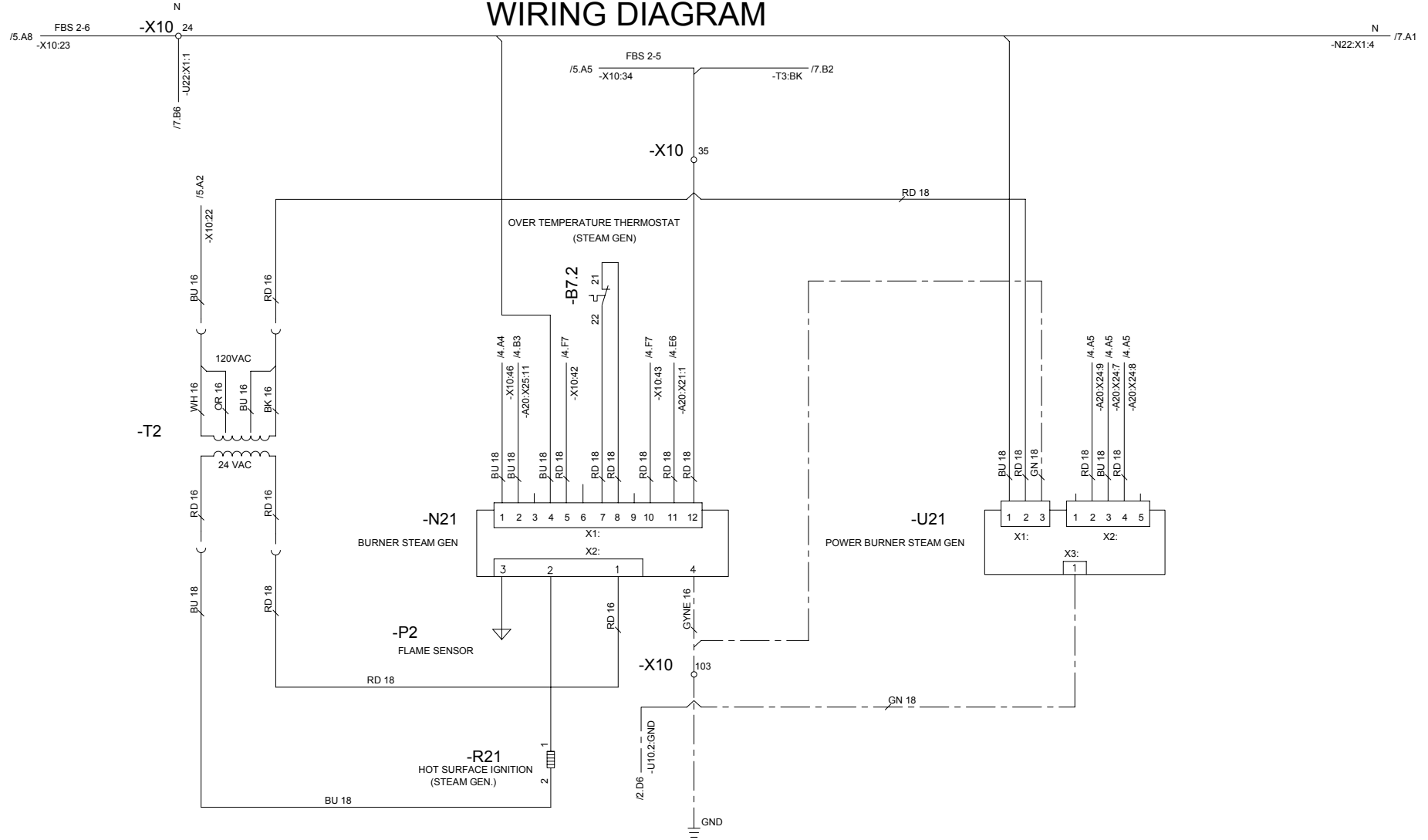








# WIRING DIAGRAM



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**CLEVELAND RANGE, LLC**  
1333 East 179th St., Cleveland, Ohio 44110-2574

TITLE

WIRING DIAGRAM  
OGB 20.20

VOLTAGE: 110-120  
WATTAGE: -  
CURRENT: 22.5A

DRAWN BY

DRL

DRAWING NO.

300497

REV

B

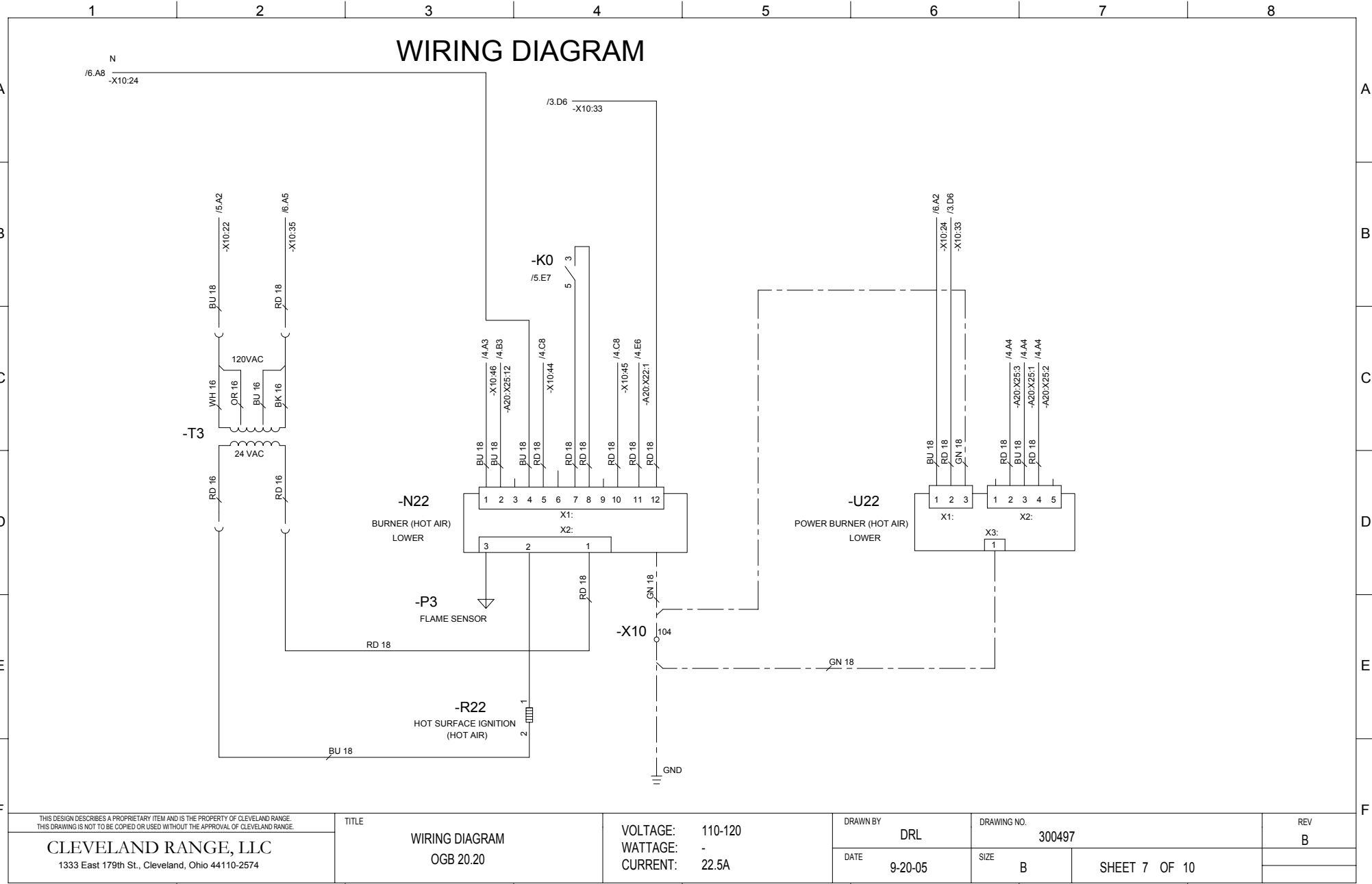
DATE

9-20-05

SIZE

B

SHEET 6 OF 10



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**CLEVELAND RANGE, LLC**  
1333 East 179th St., Cleveland, Ohio 44110-2574

TITLE

**WIRING DIAGRAM**  
OGB 20.20

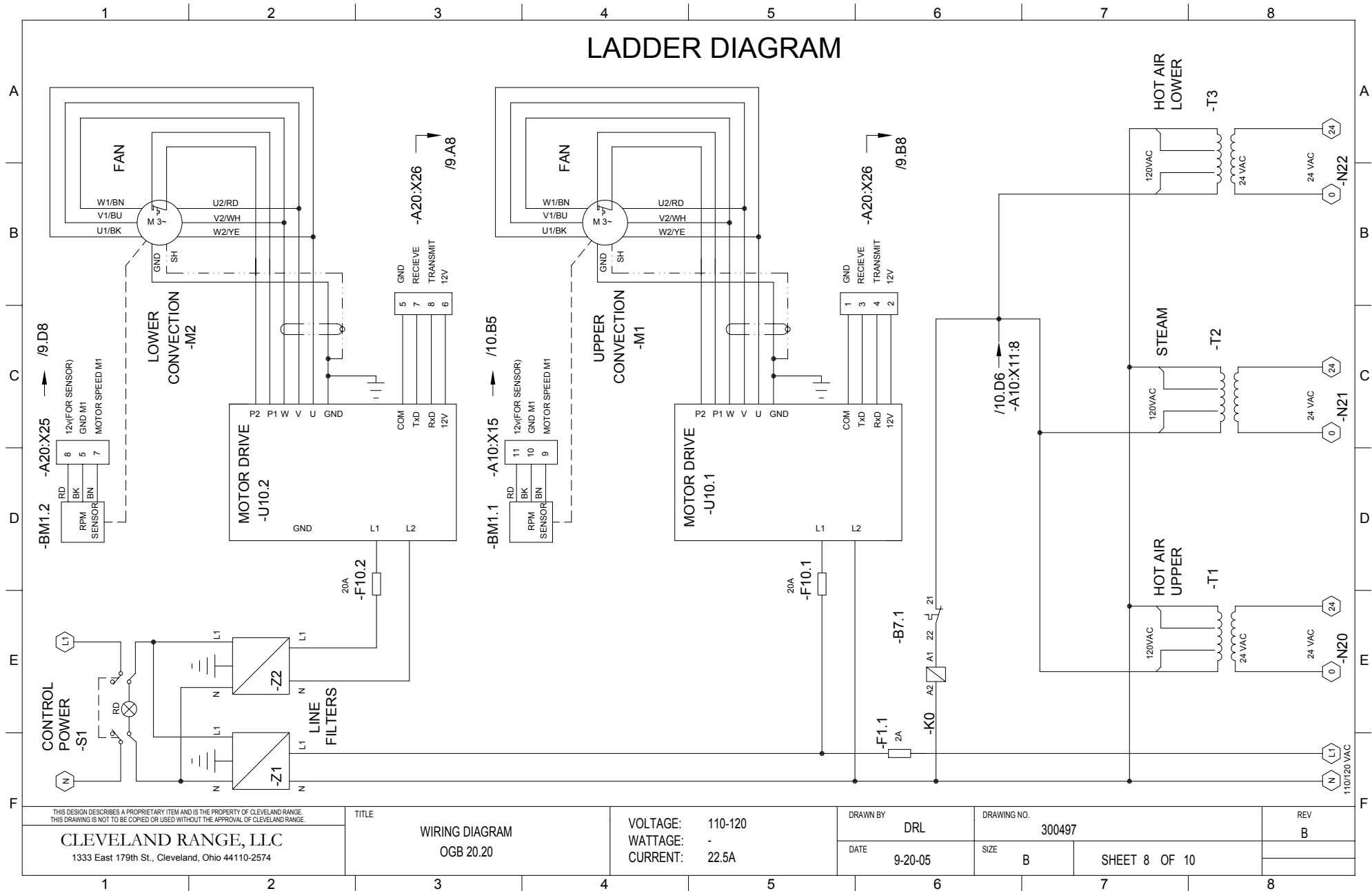
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WATTAGE: -  
CURRENT: 22.5A

DRAWN BY: DRL  
DATE: 9-20-05

DRAWING NO. 300497  
SIZE: B  
SHEET 7 OF 10

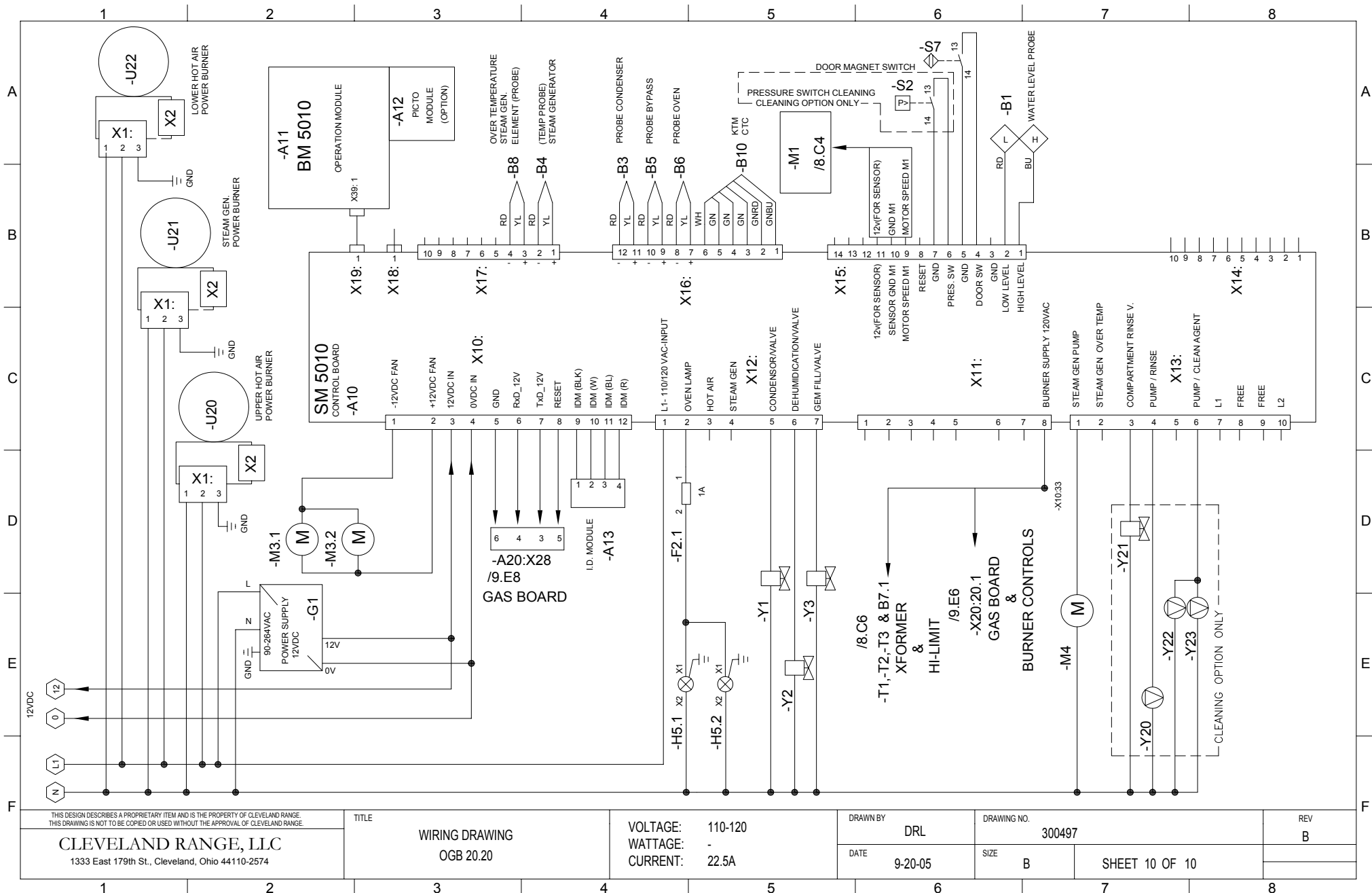
REV: B

1 2 3 4 5 6 7 8









## CLEVELAND RANGE OGS 20.20 SEQUENCE OF OPERATIONS

*When using these instructions refer to the OGS 20.20 wiring schematic.*

- 1 When 120 VAC is applied to the combi, it is sent to the Power Control Switch (S1).
- 2 When the Power Control Switch (S1) is closed
  - a The red light in the switch is energized.
  - b 120 VAC is sent through the Z1 Filter and the 20 amp fuse (F10.1) to L1 and L2 on the Motor Drive (U10.1)
  - c 120 VAC is sent through the Z2 Filter and the 20 amp fuse (F10.2) to L1 and L2 on the Motor Drive (U10.2)
  - d 120vac is sent through the 2 amp fuse (F1.1) to
    - The primary of the Upper Hot Air 24v Transformer (T1)
      - ◊ 24 VAC is sent from the secondary of the transformer to the Upper Hot Air Burner Control (N20)
    - The primary of the Lower Hot Air 24v Transformer (T3)
      - ◊ 24 VAC is sent from the secondary of the transformer to the Lower Hot Air Burner Control (N22)
    - To terminal 12 of connector X1 on the Hot Air Burner Control (N20)
    - To terminal 12 of connector X1 on the Lower Hot Air Burner Control (N22)
    - The 12 VDC Power Supply (G1)
      - ◊ 12 VDC is sent to terminals 1 and 2 of connector X20 on the Gas Board (A20)
      - ◊ 12 VDC is sent to terminal 3 and 4 of connector X10 on the Control Board (A10)
    - To terminal 2 of connector X1 on the Hot Air Power Burner and Fan Control (U20)
    - To terminal 2 of connector X1 on the Lower Hot Air Burner and Fan Control (U22)
    - To terminal 1 of connector X12 on the Control Board (A10)
  - e With 120 VAC to the Control Board (A10) The Operation Board (A11) is energized
    - An alarm will sound for one second
    - All the LED's and the display will energize one at a time.
    - "STARTING" will be displayed for 3 seconds
    - "Please wait" will be displayed
    - The international model number will be displayed
    - The time and date will be displayed and this will continue until the on/off switch is depressed.
- 3 When the ON/OFF is depressed with the combi in the steam mode
  - a The display will show the set temperature and set time.
- 4 With the combi in the steam mode with time on the timer, the door closed and the start switch is depressed

- a The front display will include a lighted bar under the steam symbol
  - When the heat circuit is energized the heat symbol will be energized
  - The cooking mode symbol will be energized.
  - The time display will invert and begin to count down.
- b The fan circuit is energized by the Control Board (A10) transmitting and receiving a signal from terminals 5,6, and 7 on connector X10 to connector X12 on the Motor Drive Board (U10).
  - The motor Drive Board sends a signal through the thermal switch in the motor from Terminal 5 and receives on terminal 6
  - If the thermal switch is not open the Motor Drive Board (U10) sends 240 VAC 3 phase to the motor.
  - The motor reverses direction every 120 seconds with a 15 second coast.
- c Hot air heat circuit is energized
  - A signal is sent from terminal 8 of connector X15 on the Control Board (A10) to terminal 4 of connector X2 on the Hot Air Power Burner and Fan Control (U20) selecting the set speed of the combustion blower.
    - ◇ When this speed is attained the signal is sent from terminal 2 of connector X2 on the Hot Air Power Burner and Fan Control (U20) to terminal 2 of connector X15 on the Control Board (A10)
  - A request for heat is sent from terminal 3 of connector X12 on the Control Board (A10) to terminal 10 on connector X1 on the Hot Air Control Module (N20)
    - ◇ 24 VAC is sent from terminal 2 of connector X2 on the Hot Air Control Module (N20) to the hot surface igniter (R20).
    - ◇ The gas valve is energized allowing gas and air into the burner chamber to be ignited by the hot surface igniter.
    - ◇ The Hot Air Burner Control Module (N20) senses at least 1.5 micro amps DC from the flame sensor (P1) at terminal 3 of connector X2 and sends a signal from terminal 2 of connector X1 to terminal 12 of connector X15 on the Control Board (A10)
  - The heat circuit will remain energized until the cabinet set temperature is reached as sensed at probe B6.
- d The steam circuit is energized
  - 120 VAC is sent from terminal 4 of connector X12 on the Control Board (A10) to the coil of the Y3 solenoid allowing water to be thrown against the element until the bypass probe (B5) senses 183 degrees F.
    - ◇ **NOTE:** If the set temperature is above 212 degrees F the hot air circuit will be energized (after the by pass probe is satisfied) until the compartment setting is reached.
- e When the condensate box is heated to 140 degrees F at the B3probe, 120 VAC is sent from terminal 5 of connector X12 to the condenser valve (Y1) until the temperature drops.
- f When the timer counts to 0 or the core temp probe (B10) reaches the set amount the cycle ends and the steam generator reverts to the standby temperature of 190-degree F.

- 5 With the combi in the Hot Air mode with time on the timer, the door closed and the start switch is depressed
- a The front display will include a lighted bar under the Hot Air symbol
    - When the heat circuit is energized the heat symbol will be energized
    - The cooking mode symbol will be energized.
    - The time display will invert and begin to count down.
  - b The fan circuit is energized by the Control Board (A10) transmitting and receiving a signal from terminals 5,6, and 7 on connector X10 to connector X12 on the Motor Drive Board (U10).
    - The motor Drive Board sends a signal through the thermal switch in the motor from Terminal 5 and receives on terminal 6
    - If the thermal switch is not open the Motor Drive Board (U10) sends 240 VAC 3 phase to the motor.
    - The motor reverses direction every 120 seconds with a 15 second coast.
    - **NOTE:** If the set temperature is less than 212 degrees F than fan will be pulsed on for 2 seconds every 60 seconds after the cabinet set temp (B6).
  - c Hot air heat circuit is energized
    - A signal is sent from terminal 8 of connector X15 on the Control Board (A10) to terminal 4 of connector X2 on the Hot Air Power Burner and Fan Control (U20) selecting the set speed of the combustion blower.
      - ◇ When this speed is attained the signal is sent from terminal 2 of connector X2 on the Hot Air Power Burner and Fan Control (U20) to terminal 2 of connector X15 on the Control Board (A10)
    - A request for heat is sent from terminal 3 of connector X12 on the Control Board (A10) to terminal 10 on connector X1 on the Hot Air Control Module (N20)
      - ◇ 24 VAC is sent from terminal 2 of connector X2 on the Hot Air Control Module (N20) to the hot surface igniter (R20).
      - ◇ The gas valve is energized allowing gas and air into the burner chamber to be ignited by the hot surface igniter.
      - ◇ The Hot Air Burner Control Module (N20) senses at least 1.5 micro amps DC from the flame sensor (P1) at terminal 3 of connector X2 and sends a signal from terminal 2 of connector X1 to terminal 12 of connector X15 on the Control Board (A10)
    - The heat circuit will remain energized until the cabinet set temperature is reached as sensed at probe B6.
  - d When the condensate box is heated to 140 degrees F at the B3probe, 120 VAC is sent from terminal 5 of connector X12 to the condenser valve (Y1) until the temperature drops.
  - e If the “Crisp and Tasty” mode is selected
    - 120 VAC is sent from terminal 6 of connector X12 on the Control Board (A10) to the Dehumidification Valve (Y2) to pull the humidity out of the cabinet down the drain.
      - ◇ In the light and medium modes (one and two drops in the display) the Y2 valve will be energized until the bypass probe (B5) is satisfied.

- ◇ In the full mode (3 drops in the display) the Y2 valve will be energized continuously.
  - f When the timer counts to 0 or the core temp probe (B10) reaches the set amount the cycle .
- 6 With the combi in the Combi mode with time on the timer, the door closed and the start switch is depressed
  - a The front display will include a lighted bar under the Combi symbol
    - When the heat circuit is energized the heat symbol will be energized
    - The cooking mode symbol will be energized.
    - The time display will invert and begin to count down.
  - b The fan circuit is energized by the Control Board (A10) transmitting and receiving a signal from terminals 5,6, and 7 on connector X10 to connector X12 on the Motor Drive Board (U10).
    - The motor Drive Board sends a signal through the thermal switch in the motor from Terminal 5 and receives on terminal 6
    - If the thermal switch is not open the Motor Drive Board (U10) sends 240 VAC 3 phase to the motor.
    - The motor reverses direction every 120 seconds with a 15 second coast.
  - c Hot air heat circuit is energized
    - A signal is sent from terminal 8 of connector X15 on the Control Board (A10) to terminal 4 of connector X2 on the Hot Air Power Burner and Fan Control (U20) selecting the set speed of the combustion blower.
      - ◇ When this speed is attained the signal is sent from terminal 2 of connector X2 on the Hot Air Power Burner and Fan Control (U20) to terminal 2 of connector X15 on the Control Board (A10)
    - A request for heat is sent from terminal 3 of connector X12 on the Control Board (A10) to terminal 10 on connector X1 on the Hot Air Control Module (N20)
      - ◇ 24 VAC is sent from terminal 2 of connector X2 on the Hot Air Control Module (N20) to the hot surface igniter (R20).
      - ◇ The gas valve is energized allowing gas and air into the burner chamber to be ignited by the hot surface igniter.
      - ◇ The Hot Air Burner Control Module (N20) senses at least 1.5 micro amps DC from the flame sensor (P1) at terminal 3 of connector X2 and sends a signal from terminal 2 of connector X1 to terminal 12 of connector X15 on the Control Board (A10)
    - The heat circuit will remain energized until the cabinet set temperature is reached as sensed at probe B6.
  - d The steam circuit is energized.
    - 120 VAC is sent from terminal 4 of connector X12 on the Control Board (A10) to the coil of the Y3 solenoid allowing water to be thrown against the element until the bypass probe (B5) senses 183 degrees F.
    - The heat circuit will remain energized until the cabinet set temperature is reached

- If the bypass probe (B5) drops below the set level the steam circuit will start again.
- e When the condensate box is heated to 140 degrees F at the B3probe, 120 VAC is sent from terminal 5 of connector X12 to the condenser valve (Y1) until the temperature drops.
- f If the “Crisp and Tasty” mode is selected
  - 120 VAC is sent from terminal 6 of connector X12 on the Control Board (A10) to the Dehumidification Valve (Y2) to pull the humidity out of the cabinet down the drain.
    - ◊ In the light and medium modes (one and two drops in the display) the Y2 valve will be energized until the bypass probe (B5) is satisfied.
    - ◊ In the full mode (3 drops in the display) the Y2 valve will be energized continuously.
- g When the timer counts to 0 or the core temp probe (B10) reaches the set amount the cycle ends and the steam generator reverts to the standby temperature of 190-degree F.
- 7 With the combi in the Rethermalization mode with time on the timer, the door closed and the start switch is depressed
  - a The front display will include a lighted bar under the Retherm symbol
    - When the heat circuit is energized the heat symbol will be energized
    - The cooking mode symbol will be energized.
    - The time display will invert and begin to count down.
  - b The fan circuit is energized by the Control Board (A10) transmitting and receiving a signal from terminals 5,6,7 and 8 on connector X10 to terminals 3,4,5 and 6 of connector X28 on the Gas Board (A20)
  - c The Gas board (A20) Transmits a signal from terminal 4 of connector X26 to the Motor Drive.
    - The motor Drive Board sends a signal through the thermal switch in the motor from Terminal 5 and receives on terminal 6
    - If the thermal switch is not open the Motor Drive Board (U10) sends 220 VAC 3 phase to the motor.
    - The motor reverses direction every 120 seconds with a 15 second coast.
    - **NOTE:** If the set temperature is less than 212 degrees F than fan will be pulsed on for 2 seconds every 60 seconds after the cabinet set temp (B6).
  - d Hot air heat circuit is energized
    - A signal is sent from terminal 8 of connector X15 on the Control Board (A10) to terminal 4 of connector X2 on the Hot Air Power Burner and Fan Control (U20) selecting the set speed of the combustion blower.
      - ◊ When this speed is attained the signal is sent from terminal 2 of connector X2 on the Hot Air Power Burner and Fan Control (U20) to terminal 2 of connector X15 on the Control Board (A10)
    - A request for heat is sent from terminal 3 of connector X12 on the Control Board (A10) to terminal 10 on connector X1 on the Hot Air Control Module (N20)
      - ◊ 24 VAC is sent from terminal 2 of connector X2 on the Hot Air Control Module (N20) to the hot surface igniter (R20).

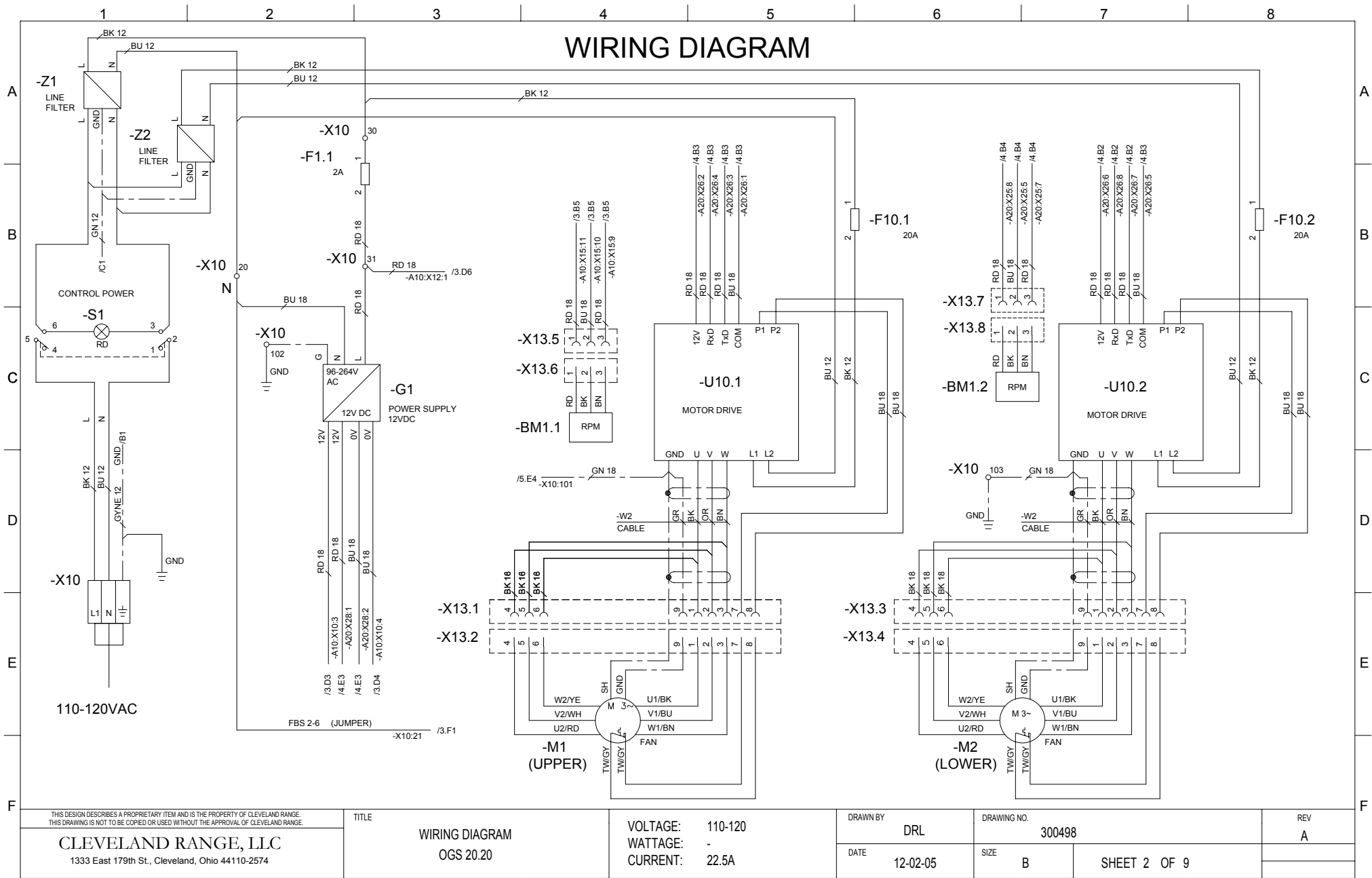
- ◇ The gas valve is energized allowing gas and air into the burner chamber to be ignited by the hot surface igniter.
  - ◇ The Hot Air Burner Control Module (N20) senses at least 1.5 micro amps DC from the flame sensor (P1) at terminal 3 of connector X2 and sends a signal from terminal 2 of connector X1 to terminal 12 of connector X15 on the Control Board (A10)
  - The heat circuit will remain energized until the cabinet set temperature is reached as sensed at probe B6.
- e The steam circuit is energized.
  - 120 VAC is sent from terminal 4 of connector X12 on the Control Board (A10) to the coil of the Y3 solenoid allowing water to be thrown against the element until the bypass probe (B5) senses 183 degrees F.
  - The heat circuit will remain energized until the cabinet set temperature is reached
- f If the bypass probe (B5) drops below the set level the steam circuit will start again
- g When the condensate box is heated to 140 degrees F at the B3probe, 120 VAC is sent from terminal 5 of connector X12 to the condenser valve (Y1) until the temperature drops.
- h When the timer counts to 0 or the core temp probe (B10) reaches the set amount the cycle ends and the steam generator reverts to the standby temperature of 190-degree F.

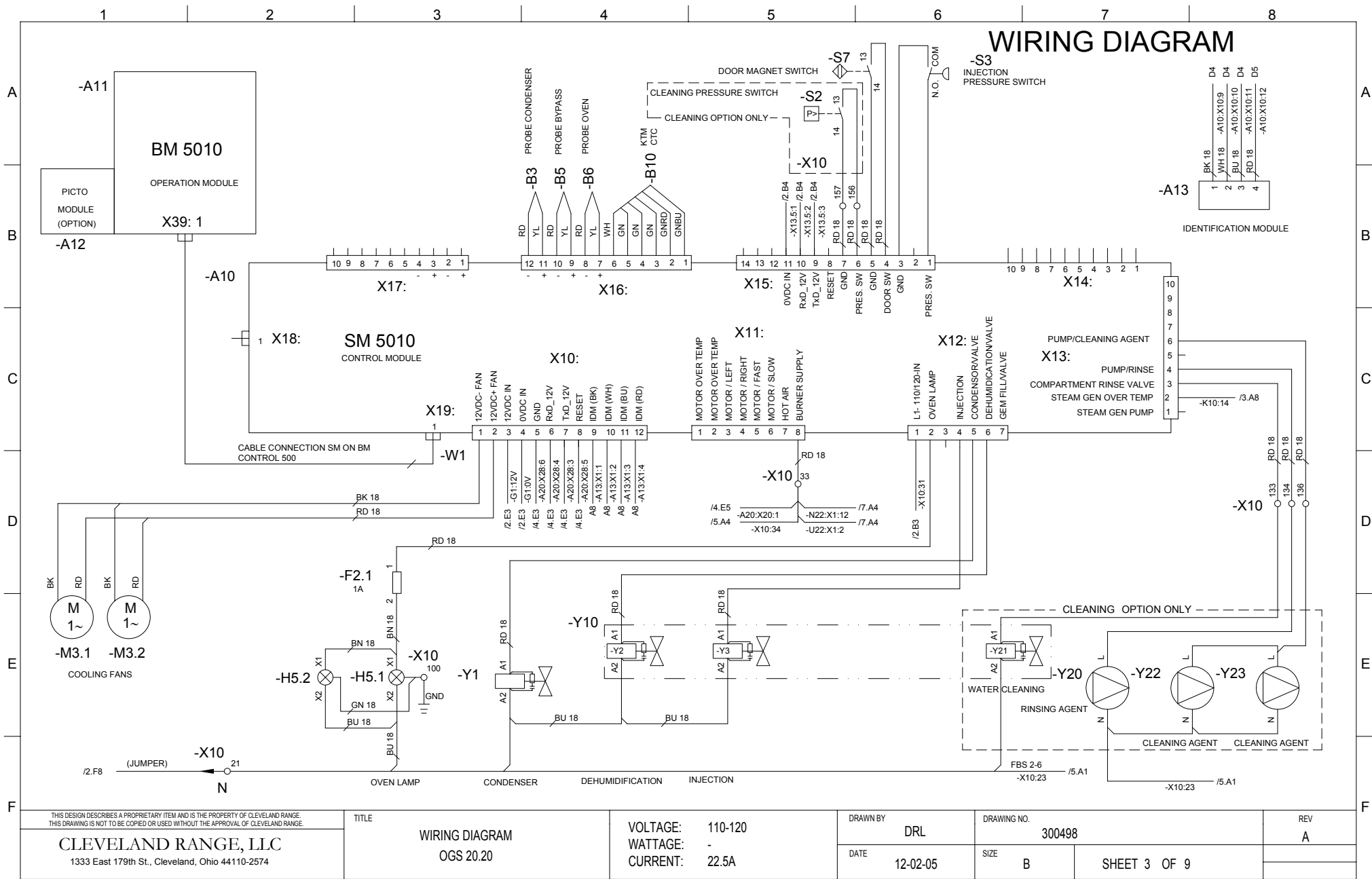


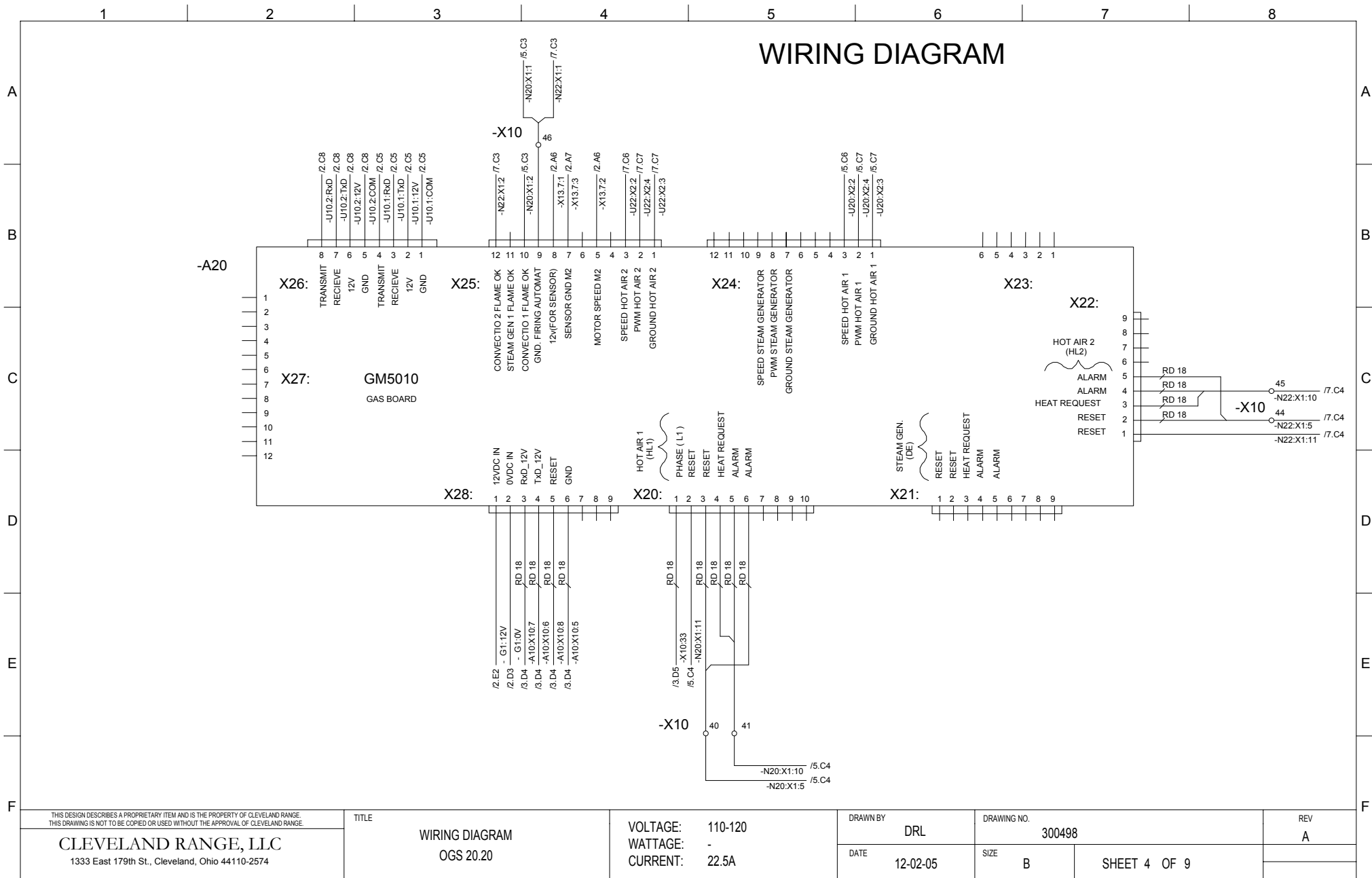
1		2		3		4		5		6		7		8	
PARTS LIST															
LABEL		DESCRIPTION		PART NO.		LOCATION		LABEL		DESCRIPTION		PART NO.		LOCATION	
-A10		CONTROL BOARD (SM 5010)		C5019100		3									
-A11		OPERATION BOARD (BM 5010)		C5019101		3		-U20		POWER BURNER ASSY, HOT AIR		-		5.D6	
-A12		PICTO BOARD (OPTION)		C5019105		3.B1				FAN, BURNER, 120VAC		C5018007			
-A13		I.D. MODULE		C5019102		3.B8		-U22		POWER BURNER ASSY, HOT AIR.		-		7.D6	
-A20		GAS BOARD (GM5010)		C5019103		4				FAN, BURNER, 120VAC		C5018007			
-B3		CONDENSOR PROBE		C5016007		3.B4		-W1		CABLE, 9 PIN COM.		300533		3.C3	
-B4		STEAM GEN PROBE		C5016007		3.B3		-Y1		VALVE, CONDENSER, 120VAC		300455		3.E4	
-B5		BYPASS PROBE		C5016007		3.B4				NOISE FILTER (RC)		300407		3.E4	
-B6		OVEN PROBE		C5016006		3.B4		-Y10		VALVE ASSY, 2 WAY, 120VAC		300456		3.E	
-B7.1		OVEN HI-TEMP THERMOSTAT		C5001041		5.B7				-Y2 VALVE, DEHUMID.		-		3.E	
-B10		CORE TEMP. PROBE (KTM CTC)		C5013001		3.B4				-Y3 VALVE, GEN. FILL		-		3.E	
-F1.1		FUSE, 2A		300416		2.B3				NOISE FILTER (RC)		-		3.E	
-F2.1		FUSE, 1A		300418		3.E3				VALVE ASSY, 3 WAY, 120VAC(CLEANING OPTION)		300363		3	
-F10.1, -F10.2		FUSE, 20A		300471		2.B5, 2.B8				-Y2 VALVE, DEHUMID.		-		3	
-G1		POWER SUPPLY, 12VDC		300350		2.C3				-Y3 VALVE, GEN. FILL		-		3	
-H5.1,-H5.2		OVEN LAMP		C5005043		3.E3, 3.E2				-Y21 VALVE, CLEAN/RINSE		-		3	
-K0		RELAY, 120VAC		03524		5.E7				NOISE FILTER (RC)					
		SOCKET		300473				-Y20		PUMP, RINSING AGENT, 120VAC(CLEANING OPTION)		300352		3.E7	
-M1, M2		MOTOR, CONVECTION		C50180221		2.E4, 2.E6		-Y22		PUMP, CLEANING AGENT, 120VAC(CLEANING OPTION)		300352		3.E8	
-M3.1,-M3.2		COOLING FAN		C5018023		3.E1		-Y23		PUMP, CLEANING AGENT, 120VAC(CLEANING OPTION)		300352		3.E8	
-N20		BURNER ASSY, HOT AIR		-		5.D3		-Z1,-Z2		LINE FILTER, 20A		300472		2.A1, 2.A2	
		VALVE, GAS, 120VAC		C6016009											
		CONTROL, BURNER, 120VAC		C6016023											
-N22		BURNER ASSY, HOT AIR		-		6.D3									
		VALVE, GAS, 120VAC		C6016009											
		CONTROL, BURNER, 120VAC		C6016023											
-P1,-P3		FLAME SENSOR		C4018000		5.D3, 6.D3									
-R20,-R22		IGNITOR, HOT SURFACE		C4018001		5.E4, 6.E3									
-S1		SWITCH, CONTROL POWER		19993		2.A1									
-S2		PRESSURE SWITCH(PUMP)		C5009055		3.A5									
-S3		PRESSURE SWITCH(INJECTION)		C5009063		3.A6									
-S7		DOOR SWITCH		C5003075		3.A6									
-T1		TRANSFORMER, 120V/24V		300419		5.C2									
-T3		TRANSFORMER, 120V/24V		300419		6.C2									
-U10.1, -U10.2		AC DRIVE		300462		2.C5, 2.C7									

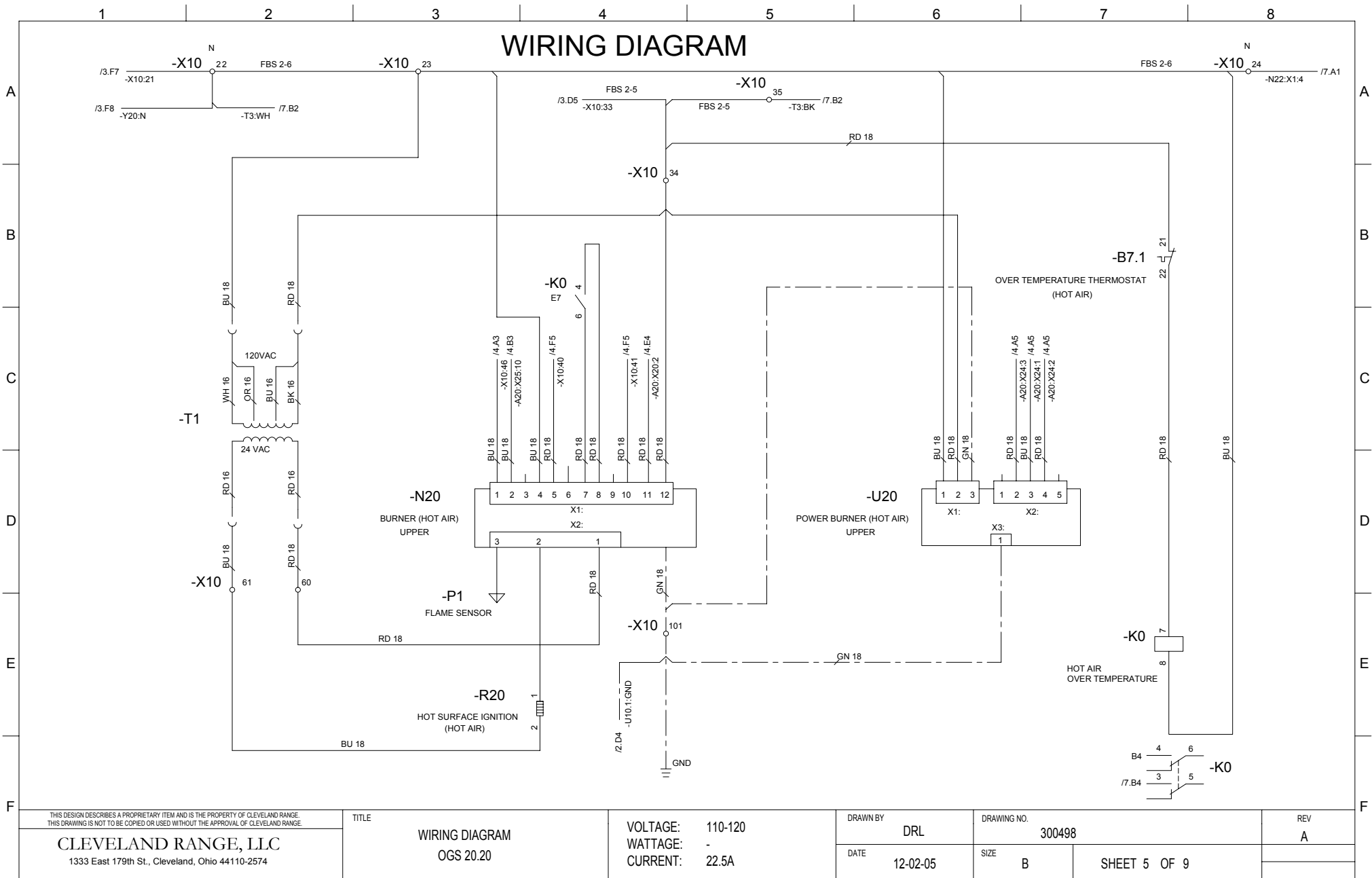
CONNECTION NUMBERING EXAMPLE

THIS DESIGN DESCRIBES A PROPRIETARY ITEM AND IS THE PROPERTY OF CLEVELAND RANGE. THIS DRAWING IS NOT TO BE COPIED OR USED WITHOUT THE APPROVAL OF CLEVELAND RANGE.		TITLE	VOLTAGE: 110-120 WATTAGE: - CURRENT: 22.5A	DRAWN BY DRL	DRAWING NO. 300498	REV A
CLEVELAND RANGE, LLC 1333 East 179th St., Cleveland, Ohio 44110-2574		WIRING DIAGRAM OGS 20.20		DATE 12-02-05	SIZE B	SHEET 1 OF 9









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