

OPERATOR/SERVICE MANUAL

IMPORTANT INFORMATION, KEEP FOR OPERATOR

This manual provides information for:

MODELS

BPM-30/40E(CE) *International* **ECLIPSE™ ERGONOMIC** **TILTING BRAISING PAN**

- Stainless Steel
- Manual Tilt
- Electric Heated



THIS MANUAL MUST BE RETAINED FOR FUTURE REFERENCE. READ, UNDERSTAND AND FOLLOW THE INSTRUCTIONS AND WARNINGS CONTAINED IN THIS MANUAL.

FOR YOUR SAFETY

Do not store or use gasoline or other flammable vapors and 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.

NOTIFY CARRIER OF DAMAGE AT ONCE

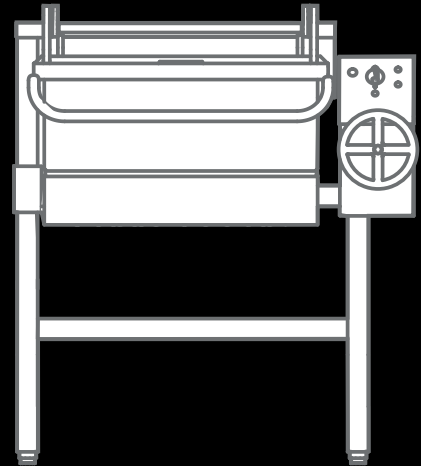
It is the responsibility of the consignee to inspect the container upon receipt of same and to determine the possibility of any damage, including concealed damage. Unified Brands suggests that if you are suspicious of damage to make a notation on the delivery receipt. It will be the responsibility of the consignee to file a claim with the carrier. We recommend that you do so at once.

Manufacture Service/Questions 888-994-7636.

Information contained in this document is known to be current and accurate at the time of printing/creation. Unified Brands recommends referencing our product line websites, unifiedbrands.net, for the most updated product information and specifications.

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ELECTRICAL SAFETY AND ADVICE REGARDING SUPPLEMENTARY ELECTRICAL PROTECTION

Commercial kitchens and foodservice areas are environments where electrical appliances may be located close to liquids, or operate in and around damp conditions or where restricted movement for installation and service is evident.

The installation and periodic inspection of the appliance should only be undertaken by a qualified, skilled and competent electrician; and connected to the correct power supply suitable for the load as stipulated by the appliance data label.

The electrical installation and connections should meet the necessary requirements to the local electrical wiring regulations and any electrical safety guidelines.

We recommend:-

- Supplementary electrical protection with the use of a residual current device (RCD)
- Fixed wiring appliances incorporate a locally situated switch disconnector to connect to, which is easily accessible for switching off and safe isolation purposes. The switch disconnector must meet the specification requirements of IEC 60947.

- Your attention is drawn to:-
 - BS 7671:2018—Guidance Note 8 - 8.13 : Other locations of increased risk
 - It is recognized that there may be locations of increased risk of electric shock other than those specifically addressed in Part 7 of BS 7671. Examples of such locations could include laundries where there are washing and drying machines in close proximity and water is present, and commercial kitchens with stainless steel units, where once again, water is present.
 - Where because of the perception of additional risks being likely, the installation designer decides that an installation or location warrants further protective measures, the options available include:
 - Automatic Disconnection of Supply (ADS) by means of a residual current device having a residual operating current not exceeding 30mA;
 - Supplementary protective equipotential bonding; and
 - Reduction of maximum fault clearance time.
 - The provision of RCDs and supplementary bonding must be specified by the host organization's appointed installation designer or electrical contractor and installed by a suitably qualified and competent electrician so as to comply with Regulations 419.2 and 544.2

IMPORTANT — READ FIRST — IMPORTANT

THESE APPLIANCES MUST BE INSTALLED BY A COMPETENT PERSON IN CONFORMITY WITH THE INSTALLATION AND SERVICING INSTRUCTIONS AND NATIONAL REGULATIONS IN FORCE AT THE TIME. PARTICULAR ATTENTION MUST BE PAID TO THE FOLLOWING:

- I. E. E. REGULATIONS FOR ELECTRICAL INSTALLATIONS
- ELECTRICITY AT WORK REGULATIONS
- HEALTH AND SAFETY AT WORK ACT
- FIRE PRECAUTIONS ACT
- LOCAL AND NATIONAL BUILDING REGULATIONS

USERS SHOULD BE CONVERSANT WITH APPROPRIATE PROVISIONS OF THE FIRE PRECAUTIONS ACT. IN PARTICULAR THEY SHOULD BE AWARE OF THE NEED FOR REGULAR SERVICING BY A COMPETENT PERSON TO ENSURE CONTINUED SAFE AND EFFICIENT APPLIANCE PERFORMANCE.

WARNING: TO PREVENT SHOCKS, ALL APPLIANCES WHETHER GAS OR ELECTRIC, MUST BE EARTHED. FAILURE TO EARTH BRAISING PAN COULD RESULT IN ELECTROCUTION AND DEATH.

ON COMPLETION OF THE INSTALLATION, THESE INSTRUCTIONS SHOULD BE LEFT WITH THE ENGINEER-IN-CHARGE FOR REFERENCE DURING SERVICING. FURTHER TO THIS, THE USERS INSTRUCTIONS SHOULD BE HANDED TO THE USERS AND THE INSTALLER SHOULD INSTRUCT THE RESPONSIBLE PERSON(S) IN THE CORRECT OPERATION AND MAINTENANCE OF THE APPLIANCE.

THIS EQUIPMENT IS ONLY FOR PROFESSIONAL USE AND SHALL BE OPERATED BY QUALIFIED PERSONS. IT IS THE RESPONSIBILITY OF THE SUPERVISOR OR EQUIVALENT TO ENSURE THAT USERS WEAR PROTECTIVE CLOTHING, AND TO DRAW ATTENTION TO THE FACT THAT SOME PARTS WILL, BY NECESSITY, BECOME VERY HOT AND WILL CAUSE BURNS IF TOUCHED ACCIDENTALLY.

UNLESS OTHERWISE STATED, PARTS WHICH HAVE BEEN PROTECTED BY THE MANUFACTURER ARE NOT TO BE ADJUSTED BY THE INSTALLER.

WARNING BEFORE ATTEMPTING ANY SERVICING, ENSURE THAT THE ELECTRICAL SUPPLY IS DISCONNECTED.

CAUTION: SHIPPING STRAPS ARE UNDER TENSION AND CAN SNAP BACK WHEN CUT.

WARNING: TO AVOID DAMAGE OR INJURY, FOLLOW THE WIRING DIAGRAM EXACTLY WHEN CONNECTING A BRAISING PAN.

WARNING: BEFORE CLEANING THE OUTSIDE OF THE BRAISING PAN, DISCONNECT ELECTRIC POWER. KEEP WATER AND SOLUTIONS OUT OF CONTROLS AND ELECTRICAL COMPONENTS. NEVER USE A HIGH PRESSURE HOSE TO CLEAN THE BRAISING PAN.

NOTICE: DO NOT USE ANY DE-GREASER THAT CONTAINS POTASSIUM HYDROXIDE OR SODIUM HYDROXIDE OR THAT IS ALKALINE.

WARNING: USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY GROEN OR THEIR AUTHORIZED DISTRIBUTOR voids all warranties and can result in bodily injury to the operator and damage the equipment. Service by other than factory-authorized personnel will void all warranties.

WARNING: HIGH VOLTAGE EXISTS INSIDE CONTROL COMPARTMENTS. DISCONNECT FROM BRANCH BEFORE SERVICING. FAILURE TO DO SO CAN RESULT IN SERIOUS INJURY OR DEATH.

CAUTION: BE SURE ALL OPERATORS READ, UNDERSTAND AND FOLLOW THE OPERATING INSTRUCTIONS, CAUTIONS AND SAFETY INSTRUCTIONS CONTAINED IN THIS MANUAL.

WARNING: THIS BRAISING PAN IS INTENDED FOR USE IN THE COMMERCIAL HEATING, COOKING AND HOLDING OF WATER AND FOOD PRODUCTS, PER THE INSTRUCTIONS CONTAINED IN THIS MANUAL. ANY OTHER USE COULD RESULT IN SERIOUS PERSONAL INJURY OR DAMAGE TO THE EQUIPMENT AND WILL VOID WARRANTY.

IMPORTANT — READ FIRST — IMPORTANT

- WARNING:** AVOID ALL DIRECT CONTACT WITH HOT EQUIPMENT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.
- WARNING:** AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN THE BRAISING PAN. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.
- CAUTION:** DO NOT OVER FILL THE BRAISING PAN WHEN COOKING, HOLDING OR CLEANING. KEEP LIQUIDS BELOW THE PAN BODY RIM TO ALLOW CLEARANCE FOR STIRRING, BOILING AND SAFE PRODUCT TRANSFER.
- WARNING:** TAKE SPECIAL CARE TO AVOID CONTACT WITH HOT BRAISING PAN OR HOT PRODUCT WHEN ADDING INGREDIENTS, STIRRING OR TRANSFERRING PRODUCT TO ANOTHER CONTAINER.
- WARNING:** WHEN TILTING BRAISING PAN FOR PRODUCT TRANSFER:
- 1) WEAR PROTECTIVE OVEN MITT AND PROTECTIVE APRON.
 - 2) USE CONTAINER DEEP ENOUGH TO CONTAIN AND MINIMIZE PRODUCT SPLASHING.
 - 3) PLACE CONTAINER ON STABLE, FLAT SURFACE AS CLOSE TO BRAISING PAN AS POSSIBLE.
 - 4) STAND TO RIGHT SIDE OF BRAISING PAN WHILE POURING. DO NOT STAND DIRECTLY IN POUR PATH OF HOT CONTENTS.
 - 5) POUR SLOWLY, MAINTAIN CONTROL OF BRAISING PAN, AND RETURN BRAISING PAN BODY TO UPRIGHT POSITION AFTER CONTAINER IS FILLED OR TRANSFER IS COMPLETE.
 - 6) DO NOT OVER-FILL CONTAINER, AVOID DIRECT SKIN CONTACT WITH HOT CONTAINER AND ITS CONTENTS.
- CAUTION:** KEEP FLOORS IN FRONT OF BRAISING PAN WORK AREA CLEAN AND DRY. IF SPILLS OCCUR, CLEAN IMMEDIATELY TO AVOID SLIPS OR FALLS.
- WARNING:** DO NOT HEAT AN EMPTY PAN FOR MORE THAN FIVE MINUTES AT A SETTING HIGHER THAN 300°F.
- WARNING:** IF THE PAN CONTAINS ITEMS IN SAUCE OR MELTED FAT, THEY COULD SLIDE FORWARD SUDDENLY DURING TILTING AND CAUSE HOT LIQUID TO SPLASH OUT.
- WARNING:** BEFORE ANY CLEANING OPERATION, TURN THE THERMOSTAT TO “OFF” TO CUT OFF POWER TO THE HEATING ELEMENTS. BEFORE CLEANING ANY PART OTHER THAN THE INSIDE OF THE PAN, DISCONNECT THE ELECTRICAL SUPPLY AT THE CIRCUIT BREAKER OR FUSE BOX.
- WARNING:** BE CAREFUL TO AVOID CONTACT WITH CLEANING PRODUCTS IN ACCORDANCE WITH SUPPLIER AND MANUFACTURER RECOMMENDATIONS. MANY CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES AND CLOTHING. READ THE WARNINGS AND FOLLOW DIRECTIONS ON THE CLEANER LABEL.
- CAUTION:** NEVER LEAVE A CHLORINE SANITIZER IN CONTACT WITH STAINLESS STEEL FOR LONGER THAN 30 MINUTES. LONGER CONTACT CAN CAUSE CORROSION.
- WARNING:** DO NOT USE ANY FUSE WITH A HIGHER AMP RATING THAN THE RATING SPECIFIED FOR THE CIRCUIT.

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References

American National Standards Institute
1403 Broadway
New York, New York 10018

National Sanitation Foundation
3475 Plymouth Road
Ann Arbor, Michigan 48106

Underwriters Laboratories, Inc.
333 Pfingsten Road
Northbrook, Illinois 60062

National Fire Protection Association
60 Battery March Park
Quincy, Massachusetts 02269

NFPA/70 The National Electrical Code

Equipment Description

The Groen BPM-E is a stainless steel, electrically heated Braising Pan which is equipped with integrated heating elements, a hand operated or motor powered tilting mechanism, electrical controls and a hinged cover. The Braising Pan serves as a braising unit, griddle, fry pan, oven, kettle, bain-marie, or food warmer and server. It can also be adapted for use as a non-pressure steamer.

The pan body is constructed of heavy-duty stainless steel, welded into a solid piece. It has a polished interior and exterior finish. A pouring lip is welded to the top of the front wall. The cooking surface is a stainless steel clad plate fitted with clamped-on electrical heating elements. The elements are positioned to ensure uniform heat transfer over the entire surface.

Model BPM is mounted on an open-leg frame which is fabricated from tubular stainless steel.

An easily operated worm and gear mechanism tilts the pan body and provides precise control for pouring or dumping its contents.

This tilting mechanism is located in a stainless steel console to right of the pan body. To facilitate cleaning, the pan body can be tilted past the vertical position.

Heating elements and other electrical components are enclosed for safety. The thermostat, heating indicator light and tilting switch are contained in a compact control console which is mounted to the right of the pan body.

The thermostat provides automatic control of cooking temperature. Turning the thermostat dial starts and stops heating and sets the pan temperature. Only one electrical connection is required to install the unit.

A vented, heavy gauge, one-piece, stainless steel cover with a rear condensate drip shield on the underside is standard on the Braising Pan. A fully enclosed torsion bar-type counter-balance provides easy operation to open the cover to maintain it open at any position. The cover opens to the back. It is hinged to the frame, so it moves independently from the pan body.

The following sizes and options are available:

MODELS	Pan Dimensions (Inside)		
	Left to Right	Front to Back	Depth
BPM-30E	26.25	28.25	10"
BPM-40E	35.75	28.25	10"

The following optional equipment may be added to any floor model listed above:

- | | |
|--|--|
| <ul style="list-style-type: none"> 1. Fill faucet - swing spout single or double pantry 2. Fill faucet - 48" or 60" spray hose assembly - single or double pantry 3. Caster mounting kit 4. Flanged Feet Kit 5. Draw-Off Valve (can not be field installed) | <ul style="list-style-type: none"> 6. Steamer insert set 7. Steamer pan carrier 8. Pouring Lip Strainer 9. Strainer for 2" TDO valve |
|--|--|



Optional Tangent Draw-Off

Inspection & Unpacking

The unit will arrive completely assembled, wrapped in protective plastic on a heavy skid, in a heavy cardboard carton. Immediately upon receipt, inspect the carton for damage. Report any apparent shipping damage or an incorrect shipment to the delivery agent.

When installation is to begin, get someone to assist in removing the carton. Lift it straight up and away from the unit. **Do not simply raise it and push backwards - it will break the cover assembly vent handle.** Write down the model number, serial number, and installation date of your unit, and keep this information for future reference. Space for these entries is provided at the top of the Service Log in this manual. Cut the straps holding the unit on the skid, and lift the unit straight up off the skid.

CAUTION
SHIPPING STRAPS ARE UNDER TENSION AND CAN SNAP BACK WHEN CUT.

UNIT WEIGHS 420 TO 560 LB (190 TO 255 KG). FOR SAFE HANDLING, INSTALLER SHOULD OBTAIN HELP AS NEEDED, OR EMPLOY APPROPRIATE MATERIALS HANDLING EQUIPMENT (SUCH AS A FORKLIFT, DOLLY, OR PALLET JACK) TO REMOVE THE UNIT FROM THE SKID AND MOVE IT TO THE PLACE OF INSTALLATION.



**The unit is strapped to a skid and shipped in a heavy cardboard carton.
(Shown is model BPM-30E)**

1. Installation

WARNING
THE BRAISING PAN MUST BE INSTALLED BY PERSONNEL WHO ARE QUALIFIED TO WORK WITH ELECTRICITY. IMPROPER INSTALLATION COULD RESULT IN PERSONAL INJURY OR EQUIPMENT DAMAGE.

Internal wiring for the Braising Pan is supplied complete. When you receive the unit, it is ready for connection. A wiring schematic is located inside the control box on the right side of the pan, and in this manual.

Your pan was performance tested at the factory to confirm that all controls and heating elements were functioning correctly.

IMPORTANT
 These appliances must be installed by a competent person in conformity with the installation and servicing instructions and national regulations in force at the time. Particular attention must be paid to the following:
 I.E.E. Regulations and Electrical Installations
 Electricity at Work Regulations
 Health and Safety at Work Act
 Fire Precautions Act
 Local and National Building Regulations

1.1 Installation is as follows:

- 1.1.1 Provide the proper electrical supply as specified on the electrical information plate. Comply with local codes and the National Electrical Code ANSI/NFPA 70 - latest edition.
- 1.1.2 Use appropriate sized copper wire, rated at least 90°C (194°F).
- 1.1.3 Units are wired at the factory for three phase or single phase (per order) operation and should be connected as shown (See Fig. 1):

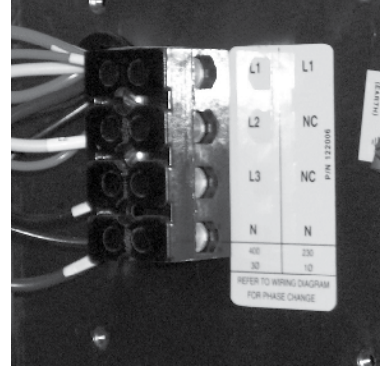
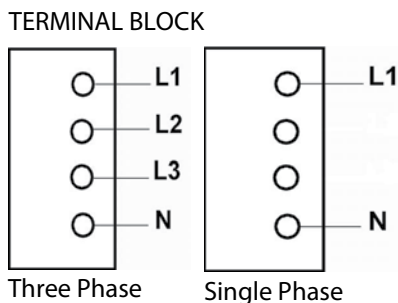


Fig. 1 Terminal Block

- 1.1.4 Set the unit in place and level it by turning the adjustable feet. Crank the pan body to a completely horizontal position. Check levelness by placing a spirit level on the bottom of the pan. The unit must be level to avoid uneven cooking across the pan.
- 1.1.5 Conduit entry is at the control box on the rear left side of the appliance. Access to the terminals is gained by removing the terminal block cover shown in figure 2.
- 1.1.6 Make a water tight connection with the incoming power line at the electrical service entrance at the back of the control box. A BX connection is NOT recommended. **ELECTRICALLY GROUND THE UNIT** at the proper terminal.

WARNING
ELECTRICALLY GROUND THE BRAISING PAN AT THE TERMINAL PROVIDED.

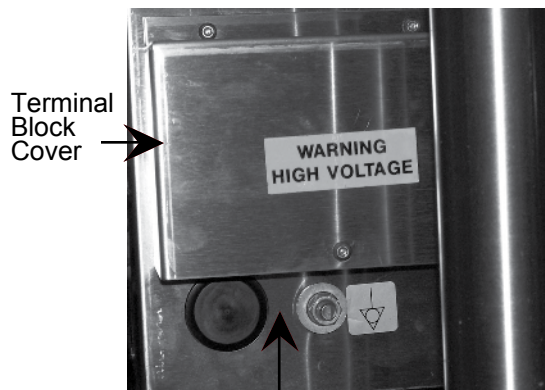


Fig. 2 Conduit Entry Opening

- 1.2. **Water Supply** - Not applicable to this appliance except for optional faucets.

1.3 Electrical System Performance

ELECTRICAL REQUIREMENTS		
Model	BPM-30E (CE)	BPM-40E (CE)
230 Volt	10.6 KW	14.1 KW
Single Phase	46 Amp	61.1 Amp
400 Volt	10.6 KW	14.1 KW
Three Phase	15.4 Amp	20.4 Amp



2. Assembly and Commissioning

2.1 Electrical Supply

Before commissioning the appliance, ensure that the electrical installation has been performed in compliance with relevant regulations. See Paragraph 1.1.

WARNING
THIS APPLIANCE MUST BE EARTHED.

2.2 Pre-Commissioning Check

- Remove literature and packing materials from the interior and exterior of the unit.
- Put enough water into the pan to cover the bottom to a depth of six to 12 mm. With the pan body in the horizontal position, note how the water lies in the pan, to confirm that the pan was leveled properly during installation.

2.3 Operating the Braising Pan

Power ON/OFF Switch

Power ON Neon (Red)

Thermostat

Heat ON Neon (Amber)



2.3.1 Heating Sequence

- Put water in the pan (6 to 12 mm deep).
- Check that electricity main is "ON".
- Turn the toggle switch (Electrical Cabinet) to the "ON" position. The red power neon will illuminate.
- Turn the thermostat to the desired setting.
- Observe that the elements are "ON" by the lighting of the amber heat neon.
- To switch "OFF" the unit, put the toggle switch in the "OFF" position.

2.3.2 Checking Performance of Controls

- Heat the unit as described in Paragraph 2.3.1, above. Check that the amber heat neon is glowing.
- Turn the thermostat "OFF" and then "ON". Check that the amber heat light goes out when the thermostat is turned off, and that it comes on when it is switched back on. Repeat 2 - 3 times.
- Remove all water from the pan and thoroughly dry the pan.
- Fill the pan with unused oil up to the mark in the pan. Oil level must not exceed 50mm (2").

WARNING
DO NOT OVERFILL WITH OIL
OR FIRE MAY RESULT!



- Set the thermostat knob at "10" and allow the oil to heat up. Immerse a thermometer or thermocouple 25 mm below the oil surface at the center of the pan. Check that the temperature stabilizes at 190°C, (± 5°C).

CAUTION
THE TEMPERATURE MUST NOT EXCEED 200°C
OR THE HIGH LIMIT THERMOSTAT WILL TRIP.

- If the unit fails to operate as described, the unit should be serviced by an Authorized Service Representative.

IMPORTANT
These appliances must be installed by a competent person in conformity with the installation and servicing instructions and national regulations in force at the time. Particular attention must be paid to the following:
**I.E.E. Regulations and Electrical Installations
Electricity at Work Regulations
Health and Safety at Work Act
Fire Precautions Act
Local and National Building Regulations**

2.4 Instructions to Installer

IMPORTANT: After installing and commissioning the appliance, the User's Instructions should be handed to the user or purchaser. Ensure that the instructions for heating, turning off, correct use and cleaning are properly understood.

3. Service

3.1 Servicing

Note: When replacing wiring connections refer to the wiring schematic in the unit or this manual.

3.1.1 After Servicing

Check for correct operation as appropriate (see 2.3).

3.1.2 Regular Servicing Procedures

The gears must be checked at regular intervals. The gear housing has been fitted for proper lubrication of moving parts. Since the gears do not run in oil, periodic lubrication with grease is essential. Frequency of lubrication depends on operating conditions, but should occur at least once every six months.

Groen recommends the use of a Number Two grade LGI lithium grease. Add grease through the Zerk fittings on the gear housing until grease flows out of the bearings around the trunnion shaft. Place a liberal amount of grease on the gear to cover the arc that is in contact with the worm gear (See Fig. 1).

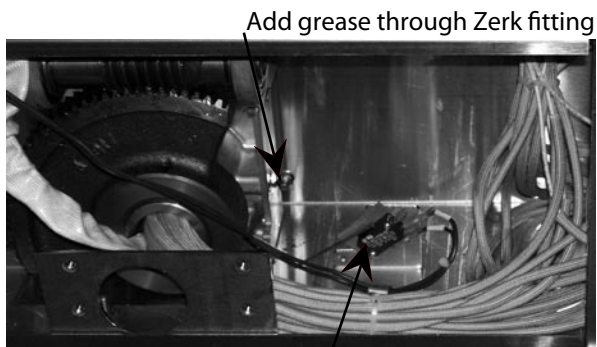


Fig. 1 Tilt switch & electrical insulating barrier

3.2 Removal of Control Panels

3.2.1 Removal of Electrical Cabinet Side Panel

- Remove the two screws on lower edge of cover.
- Remove the four screws at center of cover (See Fig. 2).
- Remove the side panel.
- Replace in reverse order.

3.2.2 Removal of Electrical Cabinet Top Panel Assy.

- Remove the side panel (per 3.2.1 above).
- Remove one screw on back side of the top panel assembly.
- Remove the two nuts holding the front edge of cover to the gearbox after side panel is removed.
- Replace in reverse order.

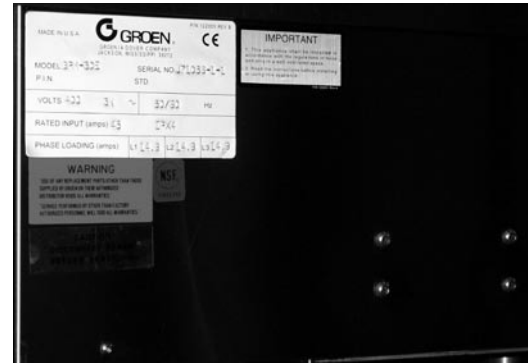


Fig. 2

3.3 Removal of Tilt Switch (Turn electricity main off)

- Remove the electrical cabinet side panel (See Fig. 1).
- Disconnect electrical leads from tilt switch.
- Remove the two screws holding the switch to the bracket.
- Remove tilt switch from control compartment.
- Replace in reverse order. See CAUTION below.



3.4 Removal of On/Off Switch (Turn electricity main off)

- Remove the electrical cabinet top cabinet top panel assembly and side panel as described in Paragraph 3.2.2.
- Disconnect electrical leads from On/Off switch.
- Undo and remove the retaining collar which secures the On/Off switch to the outer surface of the electrical cabinet.
- Withdraw the On/Off switch from the control compartment.
- Replace in reverse order.

3.5 Removal of Neons (Turn electricity main off)

- Remove electrical cabinet top panel assembly and side panel as described in Paragraph 3.2.
- Disconnect the electric leads from the neons.
- Undo and remove the retaining collar which secures the neon to the control cabinet.
- Remove gasket between control box and neon.
- Withdraw the neon from the control compartment.
- Replace in reverse order.

3.6 Removal of Operating Thermostat (Turn electricity main off)

3.6.1 To Replace

- Remove electrical cabinet top panel assembly and side panel as described in Paragraph 3.2.
- Remove control knob from front panel.
- Remove electrical leads from operating thermostat.

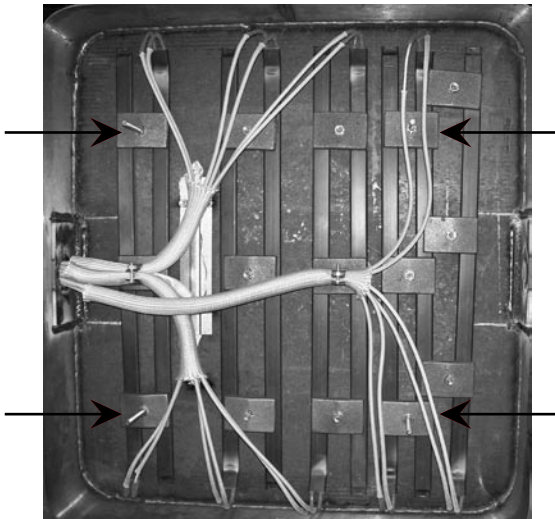


Fig. 1

- Remove cover from bottom of the pan by removing four nuts. (See Fig. 1)

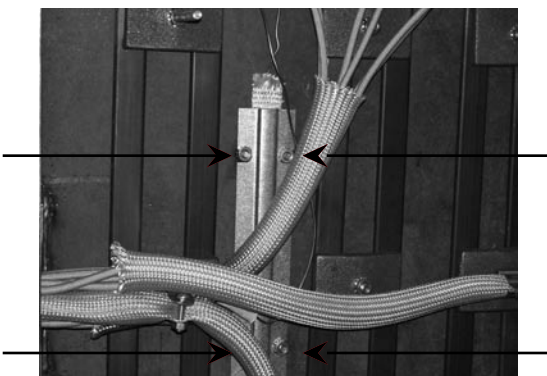


Fig. 2

- Remove four nuts which position the thermostat bulb cover in place. (See Fig. 2)
- Remove thermostat bulb cover.
- Remove fasteners retaining the thermostat capillary, bulb cover and insulated strip.
- Remove water protection housing from thermostat shaft.
- Thread thermostat bulb and capillary through the trunnion.
- Remove fiberglass sleeving from the thermostat bulb and capillary.
- Replace in reverse order.

3.6.2 To Calibrate

If calibration is required, use the following procedures:

- Fill the pan with unused oil to the indicated mark (maximum oil level 50mm or less). Place a thermocouple 25 mm below the oil surface in the middle of the pan.

WARNING
DO NOT OVERFILL WITH OIL
OR FIRE MAY RESULT!



- Remove the control knob and place a screwdriver down the centre of the spindle.
- Turn on the unit and allow the oil to heat.
- Adjust the thermostat by turning the screwdriver clockwise to decrease, and anti-clockwise to increase temperature. Ensure that the temperature settles at 190°C (±5°C). (Note: Thermostat may cycle two to three times before oil temperature settles at 190°C).
- Replace control knob.

3.7 Removal of High Limit Thermostat (Turn electricity main off)

This device is set to open the contactor, to prevent oil temperature from exceeding 230°C. Manual intervention is required to reset the control in the event of a lockout.

3.7.1 To Reset

- a) Remove electrical cabinet top panel assembly and side panel as described in Paragraph 3.2.
- b) Push the reset button located on the high limit thermostat. (See Fig. 3)

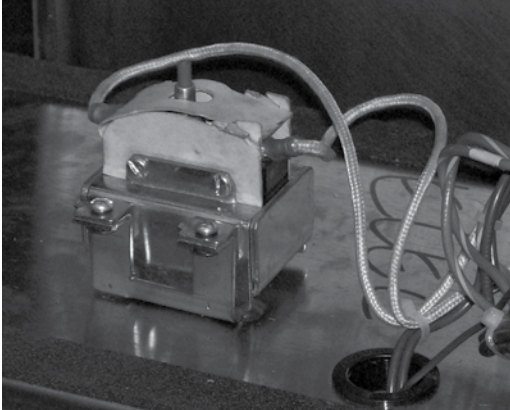


Fig. 3

3.7.2 To Replace

- a) Remove electrical cabinet top panel assembly and side panel as described in Paragraph 3.2.
- b) Remove the two screws which secure the high limit thermostat to mounting bracket. (See Fig. 3)
- c) Remove electrical leads from high limit thermostat.
- d) Remove cover from bottom of the pan by removing four nuts. (See Fig. 1 on previous page)
- e) Remove four nuts which position the thermostat bulb cover in place. (See Fig. 2 on previous page)
- f) Remove thermostat bulb cover.
- g) Remove fasteners retaining the thermostat capillary, bulb cover and insulation strip.
- h) Thread thermostat bulb and capillary through the trunnion.
- i) Remove fiberglass sleeving from the thermostat bulb and capillary.
- j) Replace in reverse order.

3.7.3 Check Operation

Operation of the high limit thermostat must be checked regularly. Use the following procedure:

- a) Remove the electrical cabinet top panel assembly and side panel as described in Paragraph 3.2.
- b) Fill the pan with unused oil to the indicated mark (50mm maximum). Place a thermocouple or thermometer 25 mm below the oil surface in the middle of the pan.



WARNING
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FIRE MAY RESULT!

- c) Ensure that the electrical power is off before continuing. Bypass the operating thermostat by placing a jumper across the terminals. This effectively removes the operating thermostat from the circuit.
- d) Switch the unit back on and heat the unit as described in the heating instructions, above. The elements will heat up the pan.

CAUTION
DO NOT LEAVE THE APPLIANCE DURING THIS TEST.

- e) If the high limit thermostat is functioning correctly, the elements will cut off as the temperature reaches 205 to 230°C. Once the high limit thermostat has tripped, switch off the mains electricity. Remove the jumper from the operating thermostat and replace all panels.
- f) If the high limit thermostat switches, but not at the specified temperature, the thermostat requires replacement. Rejected thermostats must be logged and returned.
- g) To remove, see replacement procedures above. NOTE: After this test, remove the jumper from the operating thermostat.
- h) Replace covers removed in step "a."

3.7.4 Calibration

The high limit thermostat is of the fixed type. Its calibration point may not be adjusted.

WARNING
IF THE HIGH LIMIT THERMOSTAT FAILS TO CUT OFF AT 230°C IMMEDIATELY TURN OFF THE POWER. CONDUCT AN INVESTIGATION TO DETERMINE THE FAULT, AND CORRECT IT BEFORE USING THE APPLIANCE AGAIN.

3.8 Removal of Contactor (Turn electricity main off)

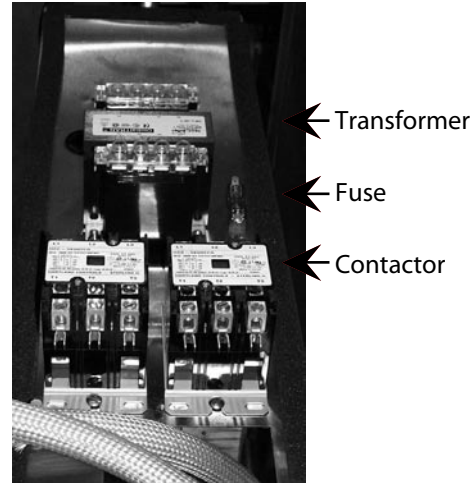
- a) Remove electrical cabinet top panel assembly and side panel as described in Paragraph 3.2.
- b) Loosen the screws on terminal to allow removal of the wires.
- c) Disconnect electrical leads from the contactor.
- d) Remove the screws at the base of the contactor.
- e) Remove contactor.
- f) Replace in reverse order.

3.9 Removal of Transformer

- a) Remove electrical cabinet lid and side panel, as described in Paragraph 3.2 above.
- b) Remove protective cover over the terminals.
- c) Disconnect electrical connections.
- d) Remove screws at the base of the transformer.
- e) Remove transformer.
- f) Replace in reverse order.

3.10 Fuse Replacement

- a) Remove electrical cabinet top panel assembly and side panel as described in Paragraph 3.2.
- b) Remove fuse from fuse holder.
- c) Replace fuse with an identical fuse.
- d) Replace in reverse order.

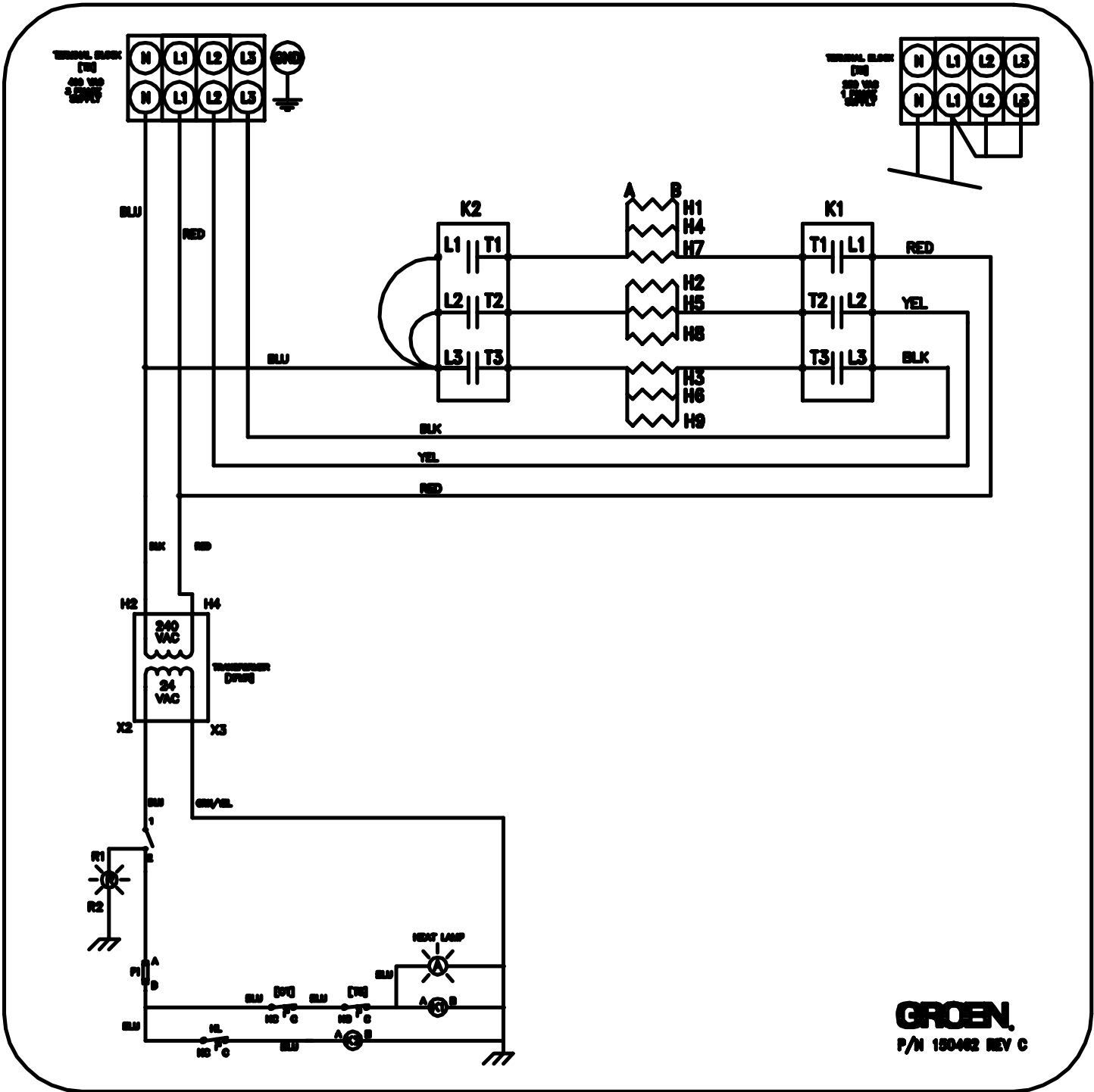


3.11 Removal of Heating Element(s)

- a) Identify the heating element that needs replacing by checking its continuity and resistance. Specified resistance of a new heating element should be between 43 and 47.5 Ω (Ohm's).
- b) Remove electrical cabinet top panel cover assembly as described in Paragraph 3.2.
- c) Disconnect leads of the heater(s) to be replaced from the contactors.
- d) Remove cover from bottom of the braising pan by removing four nuts. (see page 11 & Fig. 1).
- e) Remove appropriate clamping nuts and cast iron clamps.
- f) Remove defective heaters.
- g) Thread heater wires through the high temperature sleeve and the trunion to remove the heater.
- h) Install new heater elements and tighten the nuts to 13 (\pm 0.6) newton-meters.
- i) Route heater wires through the sleeve and trunion to the contactor and connect per wiring schematic.

WIRING SCHEMATICS

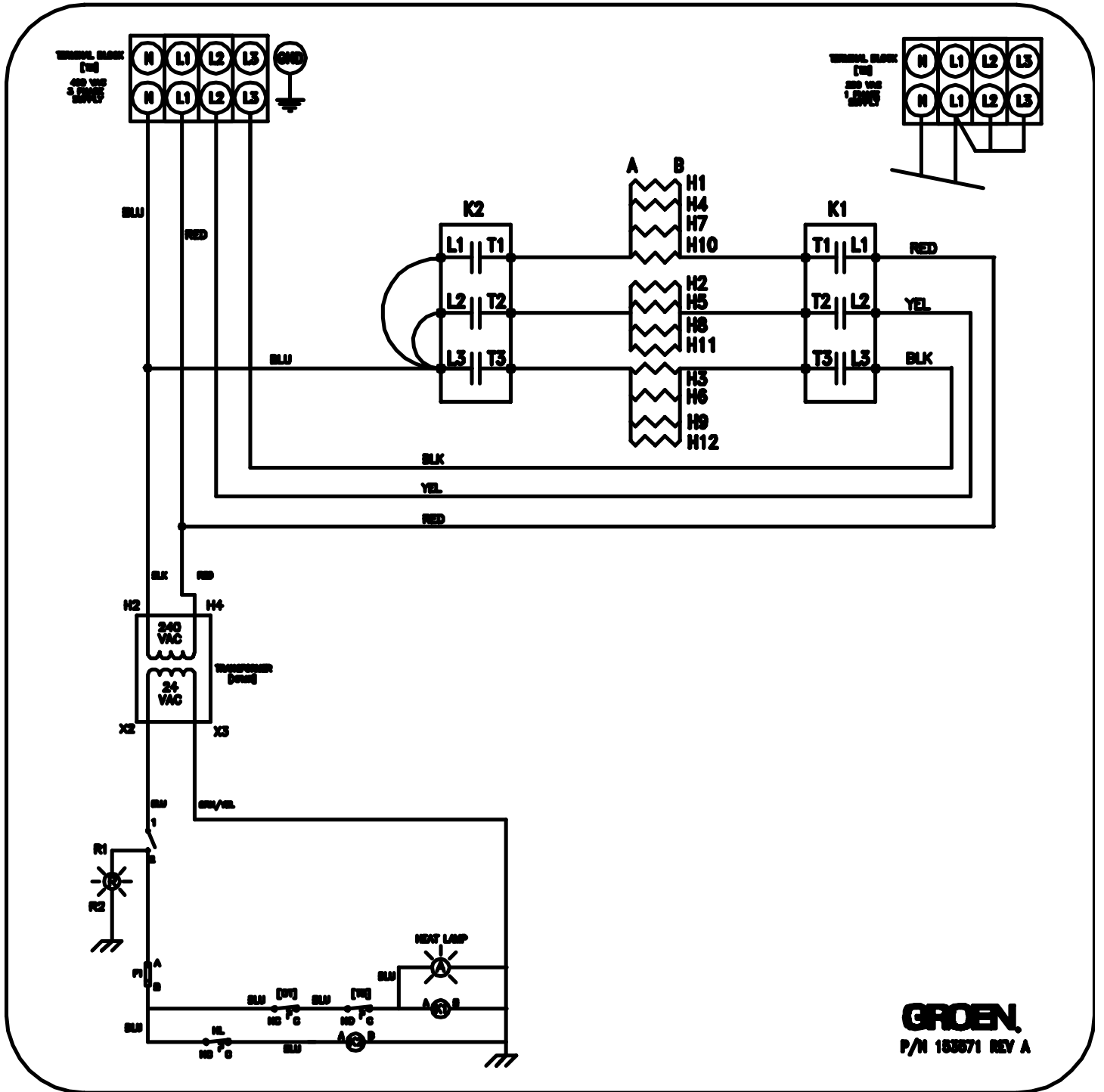
Model BPM-30E CE



GROEN
P/N 150482 REV C

WIRING SCHEMATICS

Model BPM-40E CE



GROEN
P/N 153571 REV A

4. User Instructions

4.1 Heating and Operation

- Check that the electricity main is "ON".
- Turn the toggle switch (Electrical Cabinet) to the "ON" position. The red power neon will illuminate.
- Turn the operating thermostat (Electrical Cabinet) to the desired setting.
- Observe that the amber heat neon is "ON".

4.2 To Shut Down Braising Pan

- Turn thermostat dial to the "OFF" position.
- Switch the On/Off switch to the "OFF" position.
- Turn the tilting handle clockwise to pour out the water or contents.

4.3 Filling the Braising Pan

Using hot water and detergent, clean out the pan thoroughly prior to operation.

The pan should not be overfilled, and an allowance should always be made for expansion and foaming of the food being cooked.

Do not use this Braising Pan for deep fat frying. The depth of oil in the pan must never exceed the maximum oil level mark on the inner pan wall (50mm).

**WARNING
DO NOT OVERFILL WITH
OIL OR FIRE MAY RESULT.**



4.4 Thermostat

Provides automatic control of the braising pan temperature at selected temperatures up to a maximum of 190°C.

4.5 Sequence of Operation

The following "sequence of operation" is provided to help the user understand how the unit functions.

- Switching the On/Off switch to the "ON" position to start the appliance causes the red power neon to illuminate.
- Turning the operating thermostat sends a signal to the contactor to close the circuit and allow the heating elements to begin heating. This also causes the amber heat neon to come on.

c) Safety Features:

- A high limit safety thermostat, which cuts off power to the heating elements if the operating thermostat fails (i.e., should the temperature exceed operating limits).
 - A tilt switch which automatically cuts off power to the heating elements when the unit is in a tilted position.
- When the pan reaches the selected temperature, the operating thermostat switch opens. This cuts power to the heating elements and turns off the amber heat neon.
 - When the pan cools below the selected temperature, the operating thermostat switch again closes and begins another heating cycle. This On-Off cycle continues, maintaining the pan at the desired temperature.

4.6 To Empty the Pan

Turn the hand crank on the front of the gear carrier cabinet clockwise to tilt the pan body forward. The pan will stay in position when you stop turning the handle. To return it to the upright position, turn the crank anti-clockwise.

**WARNING
DO NOT STAND IN FRONT OF THE PAN WHEN
TILTING IT. BE CAREFUL TO KEEP HOT
CONTENTS FROM SPILLING. KEEP PEOPLE
AWAY FROM FRONT OF UNIT WHEN EMPTYING
THE PAN.**

**WARNING
WHEN TILTING PAN BODY FOR PRODUCT
TRANSFER:
1) WEAR PROTECTIVE OVEN MITT AND
PROTECTIVE APRON
2) USE DEEP CONTAINER TO CONTAIN
AND MINIMIZE PRODUCT SPLASHING.
3) PLACE CONTAINER ON STABLE, FLAT
SURFACE, AS CLOSE TO BRAISING PAN AS
POSSIBLE.
4) STAND TO LEFT OR RIGHT OF PAN
BODY WHILE POURING - NOT DIRECTLY IN
POUR PATH OF HOT CONTENTS.
5) POUR SLOWLY, MAINTAIN CONTROL OF
PAN BODY HANDLE AT ALL TIMES, AND
RETURN PAN BODY TO UPRIGHT POSITION
AFTER CONTAINER IS FILLED OR
TRANSFER IS COMPLETE.
6) DO NOT OVERFILL CONTAINER. AVOID
DIRECT SKIN CONTACT WITH HOT
CONTAINER AND ITS CONTENTS.**

CAUTION
DO NOT OVERFILL THE BRAISING PAN WHEN COOKING, HOLDING OR CLEANING. KEEP LIQUIDS AT LEAST 2-3" (5-8 cm) BELOW THE PAN BODY RIM TO ALLOW CLEARANCE FOR STIRRING, BOILING PRODUCT AND SAFE TRANSFER.



CAUTION
KEEP FLOORS IN FRONT OF THE KETTLE WORK AREA CLEAN AND DRY. IF SPILLS OCCUR, CLEAN AT ONCE TO AVOID SLIPS OR FALLS.



- c) Standing at one side of the pan to avoid the steam that will be released, grasp the nearest corner of the cover handle and raise the cover. The cover will stay in the open position until you put it down.
- d) To pour or dump product, remove grease, or assist cleaning, first raise the cover, then tilt the pan up and forward by turning the handwheel clockwise. Whenever you stop turning the wheel, the pan body will hold its position (see warning on page 16).

WARNING
AVOID ALL DIRECT CONTACT WITH HOT EQUIPMENT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.
AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN THE BRAISING PAN. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

WARNING
IF THE PAN CONTAINS ITEMS IN SAUCE OR MELTED FAT, THEY COULD SLIDE FORWARD SUDDENLY DURING TILTING AND CAUSE THE HOT LIQUID TO SPLASH OUT.

4.7 Power Failure

- a) If power to the unit is lost, do not attempt to operate the appliance until the electricity has been restored.
- b) When the power comes on again, follow the steps in Paragraph 4.1, Heating and Operation.

4.8 Cooking Hints

- a) To simmer or slowly heat an item, set the dial at about 65°C (mark 6 on thermostat knob) or lower. Put the cover down to keep moisture loss at a minimum, or leave it up to help dry or reduce the product. Set the thermostat higher to cook or drive moisture off faster. The thermostat may be adjusted to any setting in its range to cook exactly as you wish.
- b) Leave the cover open to allow excess steam to escape. For longer simmering, you may wish to close the cover to retain moisture.



WARNING
AVOID ANY EXPOSURE TO THE STEAM ESCAPING FROM THE COVER VENT. DIRECT CONTACT COULD RESULT IN SEVERE BURNS

- e) To return the pan to the horizontal position, turn the wheel counter-clockwise.
- f) To turn the pan off, turn the thermostat to the "OFF" position.

4.9 Routine Clean Up

After each use, turn the thermostat to "OFF" and clean all food contact surfaces to ensure proper sanitation. At the end of the day, or at least once every 24 hours, turn off the heat and shut off electric power to the unit and clean both the interior and exterior of the pan. See Cleaning Instructions for further detail.

5. Cleaning

1. Suggested Tools

- a. A good stainless steel cleaner
- b. Brushes in good condition
- c. Cloth for cleaning controls
- d. Chlorine sanitizer
- e. Heavy Duty Cleaner (if required)



2. Procedure



WARNING
BEFORE ANY CLEANING OPERATION, TURN THERMOSTAT DIAL TO "OFF" TO CUT ANY POWER TO THE HEATING ELEMENTS. BEFORE CLEANING ANY PART OTHER THAN THE INSIDE OF THE PAN, DISCONNECT ELECTRICAL SUPPLY AT CIRCUIT BREAKER OR FUSE BOX.

- a) Clean all food-contact surfaces soon after use. It is best to clean the pan before it has completely cooled. If the unit is in continuous use, completely clean and sanitize both the inside and outside at least once every 12 hours.

CAUTION
KEEP WATER AND CLEANING SOLUTIONS OUT OF CONTROLS AND ELECTRICAL EQUIPMENT. DO NOT SPRAY OR HOSE THE CONTROL BOX OR OTHER ELECTRICAL CONNECTIONS. THEY ARE NOT WATER-PROOF.

- b) To remove any large amount of food left in the pan, tilt the pan all the way up and flush it with lukewarm water. Do not damage the surface of the pan by scraping it with a metal tool. Scratches make the surface more difficult to clean, and provide ideal **breeding places for bacteria**.

CAUTION
MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES, AND CLOTHING. PRECAUTIONS SHOULD BE TAKEN. WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD AND PROTECTIVE CLOTHING. READ THE WARNINGS AND CAREFULLY FOLLOW THE DIRECTIONS ON THE CLEANER LABEL.

- c) Following the supplier's directions, make up a warm solution of the cleaner. Carefully wash the inside and outside of the pan body with the cleaning solution.
- d) Use a cloth moistened with cleaning solution to clean controls, the control console, and electric conduit.



Use a brush, sponge, cloth, plastic or rubber scraper, or plastic wool to clean.



Don't use metal implements or steel wool when cleaning.

- e) Rinse the pan very well with lukewarm water, and drain it completely.
- f) As part of the daily cleaning program, clean all inside and outside surfaces that may have been soiled. Remember to check such parts as the undersides of the cover, the electrical console and other more remote spots. Clean between the pan body and the consoles using the brush provided (P/N 058705).
- g) Controls and the control console may be cleaned with a damp cloth or sprayed with a garden hose spray connected to city water supply. Do not use a pressure sprayer directly on the unit or electrical parts.
- h) To remove materials stuck to the equipment, use a brush, sponge, cloth, plastic or rubber scraper, or plastic wool with the cleaning solution. To make washing easier, let the cleaning solution sit in the unit and soak into the residue, or heat the solution briefly. Do not use any gritty cleaner or metal tool that might scratch the surface. Scratches make the surface harder to clean, and also provide places for bacteria to grow. Do not use steel wool. Small bit of steel wool left in the surface of the unit can cause rusting and pitting.
- i) The outside of the unit may be polished with a recognized stainless steel cleaner such as Zepper from the Zep Manufacturing Company.
- j) When the equipment needs to be sanitized, use a sanitizing solution equivalent to one that supplies 100 parts per million available chlorine. Get advice about the best sanitizing agent from your supplier of sanitizing products.

- k) Following supplier instructions, apply the sanitizing agent after the unit has been cleaned and drained. Thoroughly drain off the sanitizer.

CAUTION

NEVER LEAVE A CHLORINE SANITIZER IN CONTACT WITH STAINLESS STEEL SURFACES FOR LONGER THAN 30 MINUTES. LONGER CONTACT CAN CAUSE CORROSION.

- l) After the unit has been cleaned, sanitized and drained, let all surfaces air dry unless the unit must be used again right away.
- m) It is recommended that the unit be sanitized just before use. Follow the directions of the sanitizer supplier.
- n) About once a week (more often if the water is very hard), use a heavy duty cleaner to remove any mineral deposits or film left by hard water or foods. Follow the supplier's directions very carefully, and rinse the unit off thoroughly, as soon as cleaning is finished.

CAUTION

KEEP CAUSTIC COMPOUNDS SUCH AS FRYER BOILOUT CLEANERS AWAY FROM ALUMINUM PARTS OF THE LID HINGE SYSTEM AND THE COUNTERBALANCE ASSEMBLY. HIGHLY CAUSTIC COMPOUNDS COULD DAMAGE THIS MATERIAL.

- o) If especially difficult cleaning problems persist, contact your cleaning product supplier for help. The supplier has a trained technical staff with laboratory facilities to serve you.

6. Maintenance

Your Braising Pan is designed to require minimum maintenance, but certain parts may need replacement after prolonged use. After installation, no user adjustment should be necessary. If a service need arises, only authorized personnel should perform the work.



WARNING

ELECTRIC POWER ALWAYS SHOULD BE SHUT OFF BEFORE WORK IS DONE ON INTERNAL COMPONENTS

Service personnel should check the unit at least once a year. This periodic maintenance should include inspecting wires and connections and cleaning inside the control console. At least twice a year grease the two trunnion bearings and worm gear.

Groen recommends the use of number two grade LGI lithium grease. Add grease through the zerk fittings on the gear hosing until grease flows out of the bearings around trunion shaft. Also, add grease in the gear to cover arc that is in contact with the worm gear. Clean up excess grease.

WARNING

DISCONNECT ELECTRICAL POWER FROM THE UNIT BEFORE ATTEMPTING TO GREASE THE TRUNNION SHAFT.

A Service Log is provided with the warranty information at the back of this manual. Each time service is performed on your Groen equipment, enter the date on which the work was done, what was done, and who did it. Keep the manual with the equipment for quick and easy reference.

WARNING

ELECTRICAL POWER MUST BE SHUT OFF BEFORE WORK IS DONE ON INTERNAL COMPONENTS.

WARNING

USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY GROEN OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE INJURY TO THE OPERATOR AND DAMAGE TO THE EQUIPMENT AND WILL VOID ALL WARRANTIES.
SERVICE PERFORMED BY OTHER THAN FACTORY-AUTHORIZED PERSONNEL WILL VOID ALL WARRANTIES.

7. Troubleshooting

Your Groen Braising Pan will operate smoothly and efficiently if properly maintained. However, the following is a list of checks to make in the event of a problem. If the actions suggested do not solve the problem, call your authorized Groen Service Representative. For the phone number of the nearest agency, call your area Groen representative or the Groen Parts and Service Department. If an item on the list is followed by X, the work should only be performed by a qualified service representative.

SYMPTOM	WHO	WHAT TO CHECK <small>X indicates items which must be performed by an authorized technician.</small>
Pan will not heat, but indicator light comes on.	Auth Service Rep Only	a. Heating elements for short circuit.X
Pan will not heat, and indicator light will not light	User	a. That power supply is on.
	Auth Service Rep Only	b. Fuses, accessible by removing electrical cabinet top panel assembly.
	Auth Service Rep Only	c. For loose or broken wires.X d. Thermostat functioning, by listening for a click when the switch opens or closes.X e. Contactor functioning.X
Pan continues to heat after it reaches desired temperature	User	a. Thermostat dial setting. Turn down if too high.
	Auth Service Rep Only	b. Thermostat functioning.X c. Thermostat calibration.X d. Contactor, to determine if it is de-energized.X
	User	a. Thermostat dial setting. Turn up if too low.
b. Heating elements for ground short or open (burned out) element.X c. Thermostat functioning, by listening for a click when the switch opens or closes.X		
d. Thermostat calibration.X e. Contactor functioning.X		
Rapid clicking noise (chattering)	User	a. For low voltage.
	Auth Service Rep Only	b. Contactor for dirt or corrosion on the contacts.X c. Transformer step down voltage. X
Uneven cooking due to "hot spots."	User	a. That the pan body is level
Uneven cooking due to "cold spots."	Auth Service Rep Only	a. For open (burned out) heating element.X
Pan is hard to tilt (Manual Tilt Models)	User	b. Gears for foreign materials, lubrication and alignment.

WARNING

ELECTRICAL POWER MUST BE SHUT OFF BEFORE WORK IS DONE ON INTERNAL COMPONENTS.

WARNING

USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY GROEN OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE INJURY TO THE OPERATOR AND DAMAGE TO THE EQUIPMENT AND WILL VOID ALL WARRANTIES.

SERVICE PERFORMED BY OTHER THAN FACTORY-AUTHORIZED PERSONNEL WILL VOID ALL WARRANTIES.

PARTS LIST

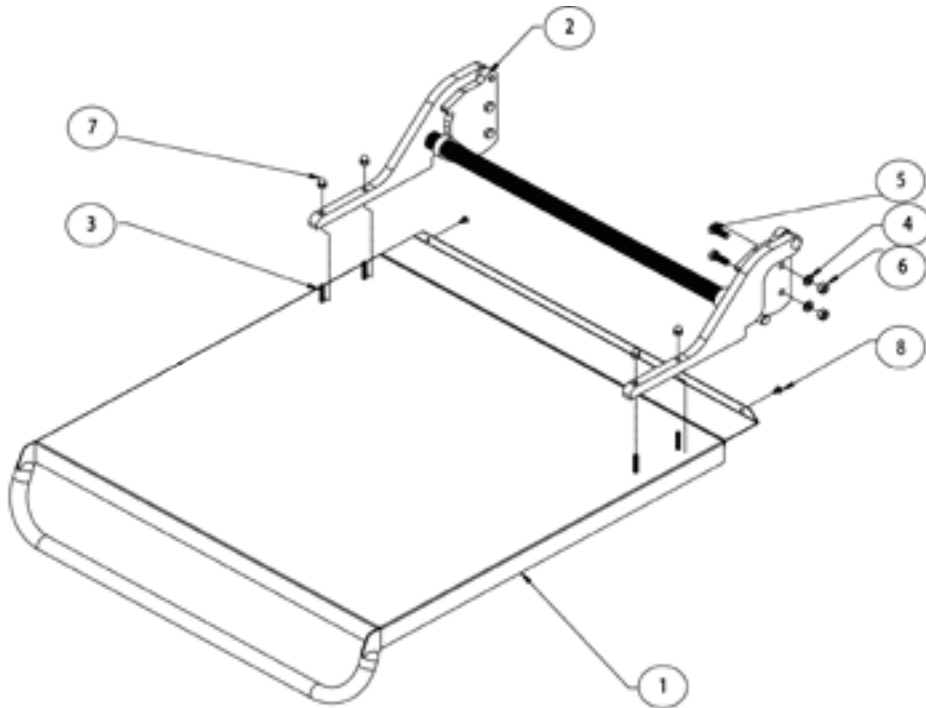
Stand and Food Assembly



STAND & FOOT ASSEMBLY		
Key		Part #
1	CASTER KIT (SET OF 2 WITH BRAKE AND 2 W/O BRAKE)	146354
1	CASTER WITH BRAKE (W/O FOOT ADAPTER)	146513
1	CASTER WITHOUT BRAKE (W/O FOOT ADAPTER)-NOT SHOWN	146515
2	FOOT ADAPTER	146516
3	FLANGED FOOT (W/O FOOT ADAPTER)	146521
4	BULLET FOOT (W/O FOOT ADAPTER)	146628
5	FRICTION RING	146520

PARTS LIST

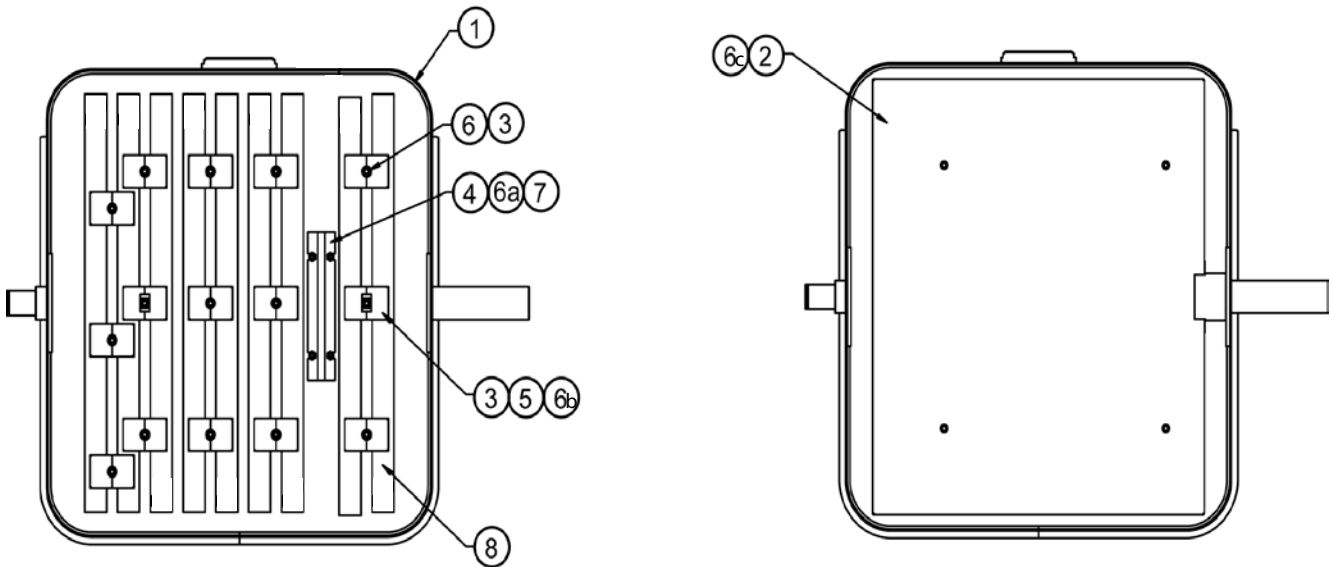
Cover and Counterbalance Assemblies



Key	Qty	COVER & COUNTERBALANCE ASSEMBLIES	Part #
1	1	COVER ASSEMBLY, 30 GALLON	160861
1	1	COVER ASSEMBLY, 40 GALLON	160808
2	1	COUNTERBALANCE ASSEMBLY, 30 GALLON	145480
2	1	COUNTERBALANCE ASSEMBLY, 40 GALLON	144790
3	4	STUD WELD, 1/4"-20 X 1-1/4"	012589
4	4	WASHER, LOCK 3/8"	005618
5	4	SCREW, HEX HEAD CAP 3/8"-16 X 1"	005612
6	4	NUT, HEX 3/8"-16	005619
7	4	DOME NUTS, 1/4-20	090567
8	2	SCREW, TRUSS HEAD, #10-32 X 3/8"	004173

PARTS LIST

Pan and Element Cover Assembly

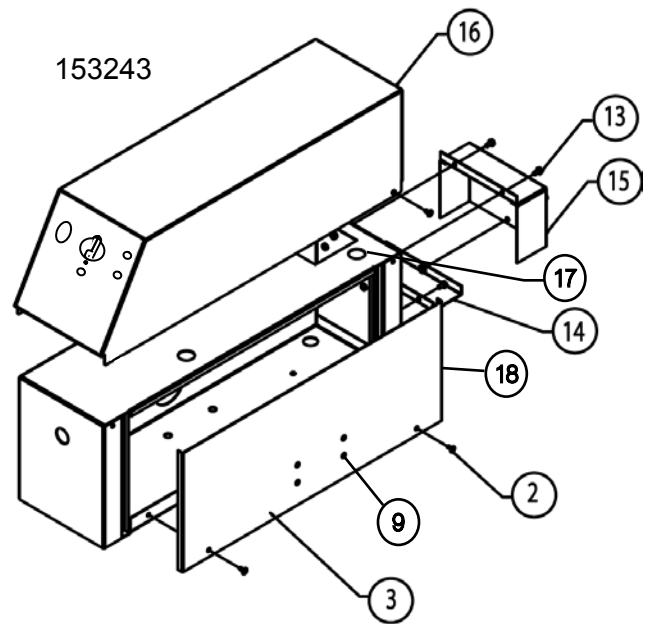
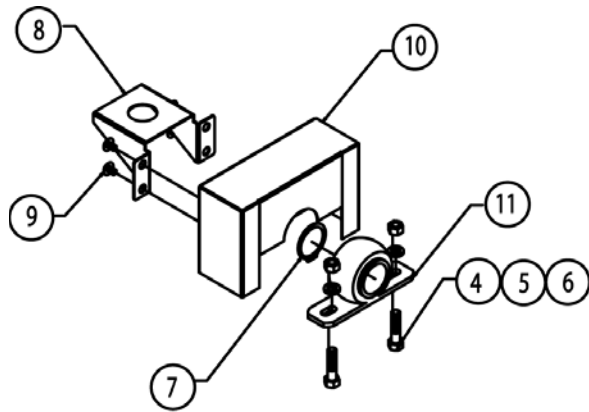


(30 Gallon Shown)

KEY	QTY	DESCRIPTION	PART NO.
PAN & HEATING ELEMENTS			
1	1	PAN WELDMENT, 30 GALLON	145654
1	1	PAN WELDMENT, 40 GALLON	144789
2	1	ELEMENT COVER WELD ASSY., 30 GALLON	146186
2	1	ELEMENT COVER WELD ASSY., 40 GALLON	144343
3	15	HEATER CLAMPS, 30 GALLON	012844
3	18	HEATER CLAMPS, 40 GALLON	012844
4	1	CLAMP THERMOSTAT BULB	012968
5	2	CONDUIT HANGER, 30 GALLON	012852
6a	4	NUT, HEXAGON KEPS 1/4"-20	012940
6b	19	NUT, HEXAGON KEPS 5/16"-18, 30 GALLON	012941
6b	22	NUT, HEXAGON KEPS 5/16"-18, 40 GALLON	012941
6c	4	WASHER, FLAT	
7	15 IN.	WOVEN GLASS TAPE (INSULATION)	045226
8	9	HEATER ELEMENTS, 30 GALLONS, 240V	153117
8	12	HEATER ELEMENTS, 40 GALLONS, 240V	153117

PARTS LIST

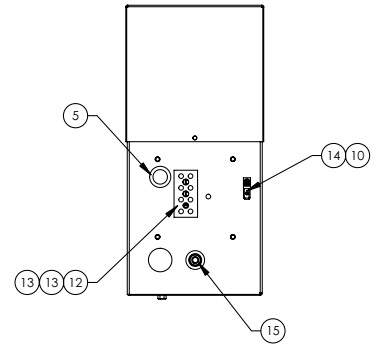
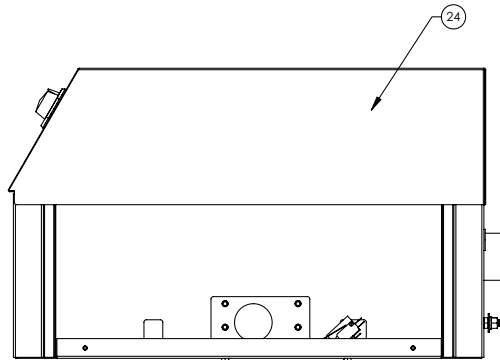
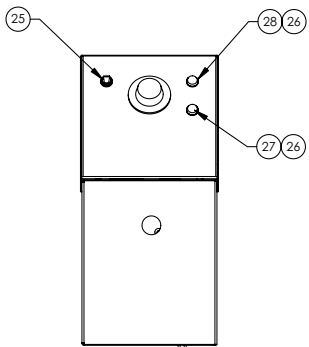
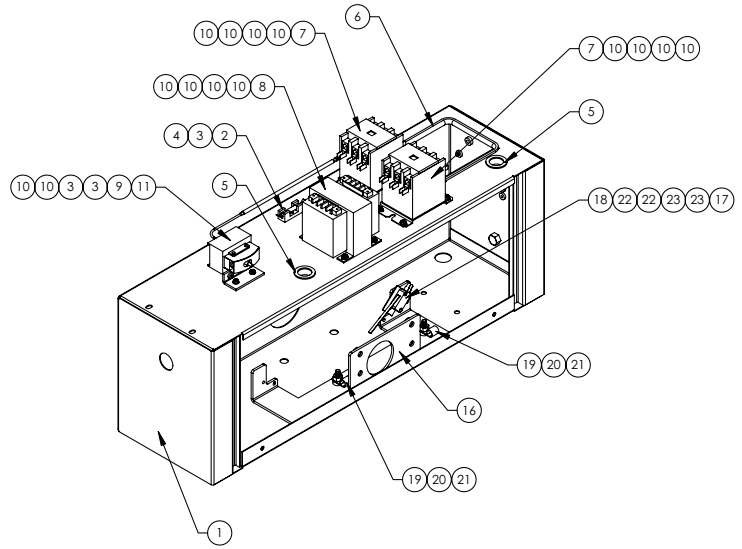
Trunnion Covers



TRUNNION COVERS			MANUAL TILT
KEY	QTY		PART NO.
2	6	SCREW TRUSS HEAD	005764
3	1	RIGHT TRUNNION SIDE PANEL	145688
4	2	NUT HEX	005619
5	2	WASHER LOCK	005618
6	2	SCREW HEX HEAD CAP	005615
7	1	RETAINING RING	124764
8	1	FAUCET BRACKET	137738
9	8	SCREW, 1/4-20 x 3/8" TRUSS	125609
10	1	PILLOW BLOCK BOX	144314
11	1	PILLOW BLOCK	002989
13	2	SCREW-HEX SLOTTED	069773
14	1	TERMINAL BLOCK BOTTOM	146207
15	1	TERMINAL BLOCK BOX	146205
16	1	ELECTRICAL PANEL COVER ASSY.	153245
17	1	HOLE PLUG - 7/8"	147309
18	1	HOLE PLUG - 1 1/4"	147310
	64 IN	COVER GASKET (not shown)	145662

PARTS LIST

Electrical Control Components



PARTS LIST

Electrical Control Components Continued

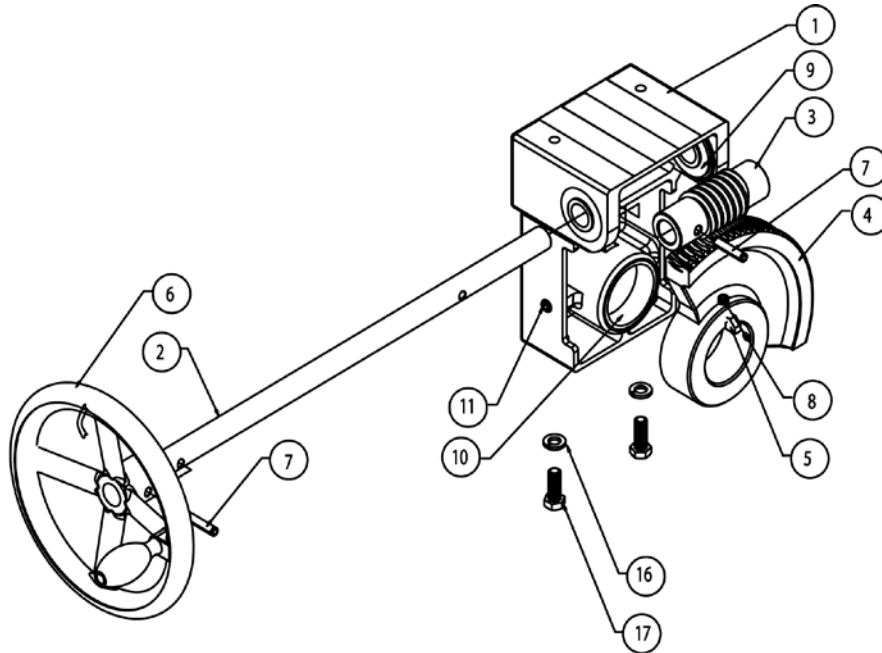
ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	160804	ASSY, CONTROL PANEL BOX WELDMENT CE MARK BPM-30,40 G/E
2	1	077854	FUSE HOLDER TYPE 3 AG
3	3	009697	SCREW PAN HEAD #6-32 X 3/8"
4	1	077853	FUSE 3.0 AMP TYPE 3 AG
5	3	000453	BUSHING, SNAP 3/4 IN ID
6	1.3ft	007937	EDGE TRIM
7	2	148102	CONTACTOR, 3 POLE 30FLA
8	1	148899	TRANSFORMER, CE,208/230/460 TO 24V
9	1	153507	HI LIMIT THERMOSTAT BRACKET ASSY BPM-E (CE)
10	15	069789	SCREW HEX SLOTTED HD W/WASHER #8-32 X 3/8"
11	1	153506	THERMOSTAT HI LIMIT BPM-E (CE)
12	1	088214	TERMINAL BLOCK 4-POLE
13	2	005056	SCREW ROUND HEAD 8-32 1 1/4"
14	1	119829	LUG, GROUND 14-6 AWG
15	1	122021	EQUIPOTENTIAL TERMINAL ASSY (CE UNITS)
16	1	145689	WELDMENT, BRACKET, SPRING
17	1	003490	BARRIER, INSULATION
18	1	143319	SWITCH, TILT, DPST
19	2	146989	CLAMP, CABLE 3/8"
20	2	005610	SCREW HEX HD 1/4"-20 X 1"
21	2	012940	NUT HEXAGON KEPS 1/4"-20
22	2	003122	SCREW ROUND HEAD #4-40 X 3/4"
23	2	071297	NUT HEXAGON KEPS 4-40
24	1	153245	ASSY, ELECTRICAL BOX COVER WELD BPM-30E (CE)
25	1	122004	POWER SWITCH
26	2	137434	GASKET, LAMP
27	1	116383	LIGHT, INDICATOR RED. 24V
28	1	116384	LIGHT, INDICATOR AMBER
29	1	002180	THERMOSTAT, 200-400
30	1	123585	GASKET T-STAT
31	1	107172	THERMOSTAT ADAPTER
32	1	122000	KNOB, THERMOSTAT
33	1	153286	WIRING HARNESS CONTROL LOW VOLTAGE BPM-40E
34	1	153287	WIRING HARNESS POWER HIGH VOLTAGE BPM-40E
35	6ft	003874	SLEEVING SIZE 7/16
36	124in	152687	SLEEVE 3/4", FIBERGLASS
37	1	128357	HARNESS ASSEMBLY, JUMPER (1 PHASE UNIT ONLY)

NOTES:

- 1 ITEMS #33 THRU 37 NOT SHOWN
- 2 P/N 003122 IS TO BE TIGHTENED TO A TORQUE OF 4.5-4.7 IN-LBS

PARTS LIST

Manual Tilt Assembly



MANUAL TILT ASSEMBLY			
KEY	QTY		Part No.
1	1	GEAR CARRIER	002624
2	1	SHAFT, HANDWHEEL	144834
3	1	GEAR, WORM	128001
4	1	GEAR SECTOR	009829
5	1	KEY GIB	012031
6	1	HANDWHEEL	012061
7	2	PIN ROLL	012614
8	1	SCREW SET SOCKET	012060
9	2	BEARING ROLLER	002790
10	1	BEARING SLEEVE	137239
11	1	PLUG PIPE	010286
14	1	FITTING GREASE 90 (NOT SHOWN)	012195
15	1	BUSHING SNAP (NOT SHOWN)	000453
16	2	WASHER LOCK	005618
17	2	SCREW HEX HEAD CAP	005612

Service Log

Model No. _____ Purchased From _____
Serial No. _____ Location _____
Date Purchased _____ Date Installed _____
Purchase Order No. _____ For Service Call _____

Date	Maintenance Performed	Performed by

Service Log

Model No. _____ Purchased From _____

Serial No. _____ Location _____

Date Purchased _____ Date Installed _____

Purchase Order No. _____ For Service Call _____

Date	Maintenance Performed	Performed by

Limited Warranty To Commercial Purchasers* **(for Areas Outside of the U.S. and Canada)**

Groen Foodservice Equipment ("Groen Equipment") has been skillfully manufactured, carefully inspected and packaged to meet rigid standards of excellence. Groen warrant their Equipment to be free from defects in material and workmanship for (12) twelve months, with the following conditions and subject to the following limitations.

- I. This parts and labor warranty is limited to Groen Equipment sold to the original commercial purchaser/ users (but not original equipment manufacturers), at its original place of installation, in areas outside the U.S. and Canada.
- II. Damage during shipment is to be reported to the carrier, and is not covered under this warranty, and is the sole responsibility of the purchaser/user.
- III. Groen, or an authorized service representative, will repair or replace, at Groen's sole election, any Groen Equipment, including but not limited to, draw off valves, safety valves, gas and electric components, found to be defective during the warranty period.
- IV. This warranty does not cover boiler maintenance, calibration, or periodic adjustments as specified in operating instructions or manuals, and consumable parts such as scraper blades, gaskets, packing, etc., or labor costs incurred for removal of adjacent equipment or objects to gain access to Groen Equipment. This warranty does not cover defects caused by improper installation, abuse, careless operation, or improper maintenance of equipment. This warranty does not cover damage caused by poor water quality or improper boiler maintenance.
- V. THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, EACH OF WHICH IS HEREBY EXPRESSLY DISCLAIMED. THE REMEDIES DESCRIBED ABOVE ARE EXCLUSIVE AND IN NO EVENT SHALL GROEN BE LIABLE FOR SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR THE BREACH OR DELAY IN PERFORMANCE OF THIS WARRANTY.
- VI. Groen Equipment is for commercial use only. If sold as a component of another (O.E.M.) manufacturer's equipment or if used as a consumer product, such Equipment is sold AS IS and without any warranty.

*** (Covers All Food Service Equipment Ordered After October 1, 1995)**

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