

American Metal Ware® Tea Brewers

Operation and Instruction Manual

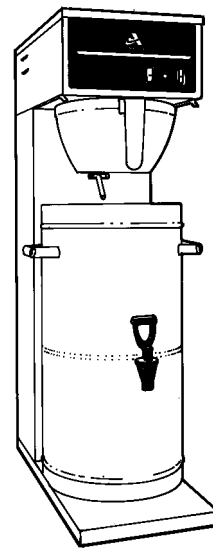
for

TEA-300

Tea Brewer Series

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TEA-300

Prior authorization must be obtained from Grindmaster Corporation for all warranty claims.



GRINDMASTER™
CORPORATION

Grindmaster Corporation

4003 Collins Lane
Louisville, Kentucky 40245 USA
(502) 425-4776 800-695-4500
(800) 568-5715 (technical service only)
FAX (502) 425-4664
www.grindmaster.com

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Warning Labels

The following warning and caution statements are contained in different sections of this manual. Please read this manual and follow all safety precautions when operating or servicing this equipment.

 **WARNING: ELECTRIC SHOCK HAZARD**

ONLY QUALIFIED SERVICE PERSONNEL SHOULD PERFORM INSTALLATION OF THIS APPLIANCE. IMPROPER INSTALLATION COULD RESULT IN ELECTROCUTION.

 **CAUTION: HOT LIQUID HAZARD**

WATER USED FOR BREWING TEA IS VERY HOT. USE CAUTION WHEN BREWING, POURING, OR TRANSPORTING HOT TEA. NEVER ATTEMPT TO MOVE THE BREWER WITHOUT FIRST DRAINING THE WATER TANK. ACCIDENTAL SPILLS MAY RESULT IN SEVERE BURNS.

 **WARNING: BURN HAZARD**

HOT LIQUIDS AND SURFACES ARE PRESENT IN THIS EQUIPMENT. TO AVOID BURNS USE CAUTION WHEN CLEANING. RINSE HOT PARTS WITH COLD WATER BEFORE CLEANING. USE GLOVES OR HEAVY CLOTH WHEN REMOVING HOT PARTS FROM BREWER.

 **WARNING: ELECTRIC SHOCK HAZARD**

NEVER USE THE GROUND CONDUCTOR AS A NEUTRAL. THIS COULD CAUSE ELECTROCUTION.

 **CAUTION: HOT LIQUID HAZARD**

TEA BASKET CONTAINS VERY HOT LIQUID UNTIL THE DRIP-THROUGH IS COMPLETED. EARLY REMOVAL OF THE BASKET COULD RESULT IN BURNS.

 **WARNING: ELECTRIC SHOCK HAZARD**

DANGEROUS ELECTRIC VOLTAGES ARE PRESENT NEAR ADJUSTABLE COMPONENTS. ONLY QUALIFIED SERVICE PERSONNEL SHOULD MAKE ADJUSTMENTS.

 **WARNING: BURN HAZARD**

HOT LIQUIDS AND SURFACES ARE PRESENT IN THIS EQUIPMENT. TO AVOID BURNS USE CAUTION WHEN SERVICING EQUIPMENT. ALLOW UNIT TO COOL BEFORE SERVICING EQUIPMENT.



WARNING: ELECTRIC SHOCK HAZARD

ONLY QUALIFIED SERVICE PERSONNEL SHOULD PERFORM INSTALLATION OF THIS APPLIANCE. IMPROPER INSTALLATION COULD RESULT IN ELECTROCUTION.

Set-Up / Position

1. Position the brewer on a strong, stable counter top or table.
2. Check the level front to back and side to side. Adjust the legs to the correct level.
3. See rough-in drawing in this manual for dimensions and locations of electrical and water input.

Water Hook-Up

IMPORTANT

WATER PIPE CONNECTIONS AND FIXTURES DIRECTLY CONNECTED TO A POTABLE WATER SUPPLY SHALL BE SIZED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL CODES.

1. The water line should be a 1/4" (6.35 mm) copper or flexible water line to prevent strain. Do not use low temperature plastic tubing. The connector on the fill valve is a 1/4" (6.35 mm) male flare fitting.
2. Water line pressure must be from 30 to 70 psi.
3. Install a shut-off valve near the brewer.
4. Install a backflow prevention device that conforms to ASSE Standard #1024.

IMPORTANT

THIS EQUIPMENT IS TO BE INSTALLED WITH ADEQUATE BACKFLOW PROTECTION TO COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES.

5. Installing a filtering system can improve the taste of brewed tea and extend the life of the brewer. The use of a filter is especially important if your water has a high calcium (lime), chlorine, or iron content. Contact our Technical Service department to select the filter for your water conditions.

Electrical Requirements

IMPORTANT

THE PERSON INSTALLING THIS APPLIANCE IS RESPONSIBLE FOR ENSURING THAT ELECTRICAL CONNECTIONS MEET THE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE, STATE AND ANY LOCAL CODES.

1. The electric ratings for your brewer are printed on its nameplate. The electrical rating is one of the following:
 - 120 Volt, 15 Amp, 1 Phase
 - 120/208-240 Volt, 20 Amp, 1 Phase, 4 supply wires
2. The brewer should be connected to its own circuit with a fused disconnect switch or a circuit breaker near the brewer.

Electrical Requirements (cont.)



WARNING: ELECTRIC SHOCK HAZARD

NEVER USE THE GROUND CONDUCTOR AS A NEUTRAL. THIS COULD CAUSE ELECTROCUTION.

3. The body of the brewer must be grounded. A **ground lug** is provided for this purpose.

Initial Start-Up

1. Turn on the water supply to the brewer. Check for leaks at supply line to fill valve connection.
2. Make sure the **power switch** is turned to the "Off" position. The **power switch** is located on the **upper back panel** of the brewer.
3. Plug in the unit's **power cord** into a properly grounded receptacle.
4. Place the **brew basket** into the **brew rails** of the brewer.
5. With the dispenser's cover removed, place the **tea dispenser** onto the tea brewer's base.
6. The water tank needs to be primed. Press the **Start switch** to begin filling the water tank. After approximately 5 minutes the brew will terminate and the water fill valve will turn off. Drain off the dispensed water from the dispenser and press the **Start switch** again to continue. You will have to perform this step until the water begins to exit through the **sprayhead**. When this occurs, press the **Stop switch**. At this point the water tank is primed.
7. Turn off the **power switch** to energize the **heating element**.
8. When the water temperature has reached the preset temperature the **Water Hot lamp** will illuminate. This may take between 15 and 35 minutes.
9. Check the brewer water temperature at the **sprayhead**. If the temperature needs to be adjusted, refer to **Adjustments** section of this manual for instructions.

Use Control Functions

Power Switch: Controls the power to the **heating element** for the **water tank**.

Start Switch: Press to start a brew cycle.

Stop Switch: Pressing this switch during a brew cycle stops the cycle prematurely. Note: After the switch is pressed, adequate time must be given to drain the **brew basket** before removing from the unit.



CAUTION: HOT LIQUID HAZARD

TEA BASKET CONTAINS VERY HOT LIQUID UNTIL THE DRIP-THROUGH IS COMPLETED. EARLY REMOVAL OF THE BASKET COULD RESULT IN BURNS.

Hot Water Light: Light illuminates when the water reaches the proper brewing temperature.

Operation

 **CAUTION: HOT LIQUID HAZARD**

WATER USED FOR BREWING TEA IS VERY HOT. USE CAUTION WHEN BREWING, POURING OR TRANSPORTING HOT TEA. NEVER ATTEMPT TO MOVE THE BREWER WITHOUT FIRST DRAINING THE WATER TANK. ACCIDENTAL SPILLS MAY RESULT IN SEVERE BURNS.

1. Place an empty **tea dispenser** on the **base** of the tea brewer. The placement should allow the **bypass** and the **brew basket** drain to empty into the container.
2. Remove the **brew basket** and line it with a **paper filter**. Paper size is 13" x 5" (**Filter #BB1.5WP**).
3. Place tealeaves in the **filter basket**. Your tea supplier can help you select the right amount of tea to use. Tea experts recommend 1 oz. (28 g) of loose tea for each gallon (3.8 litre) of finished product.
4. Slide the **basket** into the **brewer**, making sure the **basket** is pushed completely back. In the proper position the **basket** and the **dispenser** are pushed back onto the **brewer**.
5. Check that the **Water Hot light** is illuminated. If not then wait for the water to reach proper brewing temperature and the light will turn on.
6. Press the **Start switch** to start the cycle. Total brew time is dependent upon brewer settings.

 **CAUTION: HOT LIQUID HAZARD**

TEA BASKET CONTAINS VERY HOT LIQUID UNTIL THE DRIP-THROUGH IS COMPLETED. EARLY REMOVAL OF THE BASKET COULD RESULT IN BURNS.

7. During the brewing process the hot tea is mixed with cold water in the dispenser. Add sweetener if desired and serve over ice.
8. After brewing place the **cover** over the **tea dispenser** to keep fresh.
9. Dump the used tea and filter from the **basket** and rinse for the next brew.

Adjustments

 **WARNING: ELECTRIC SHOCK HAZARD**

DANGEROUS ELECTRIC VOLTAGES ARE PRESENT NEAR ADJUSTABLE COMPONENTS. ONLY QUALIFIED SERVICE PERSONNEL SHOULD MAKE ADJUSTMENTS.

All adjustable components are located under the **top cover** or behind the **lower front cover**.

Timer Adjustment

Change **timer** setting if the total volume of dispensed liquid requires adjustment.

1. Shut off power and unplug the brewer.
2. Remove the **screw** fastening the **top cover**. Remove the **top cover** by pulling forward and lifting upwards.

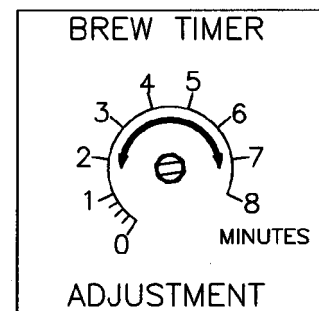


Figure A

Timer Adjustment (cont.)

3. This **timer** is adjustable from 15 seconds to 8 minutes.
4. Make the desired adjustments by turning the **adjusting knob** clockwise to increase timer setting; turning counter clockwise to reduce time.
5. Re-install **top cover** with **screw** then plug unit in, return to use.

Thermostat Adjustment

Change **thermostat** setting if spray over water temperature requires adjustment. Factory setting is 195°F (90.56°C). This is the ideal temperature for brewing tea. Water should never boil in the **tank**. If water is boiling in the **tank**, adjust the temperature appropriately.

1. Shut off power and unplug the brewer.
2. Remove the **screw** fastening the **top cover**. Remove the **top cover** by pulling forward and upwards.
3. Locate **thermostat** mounted on **tank**.
4. Turn the **shaft** clockwise to increase the water temperature, counter clockwise to decrease water temperature. (Refer to Figure B.)
5. Re-install **top cover** with **screw** then plug unit in and return to use.

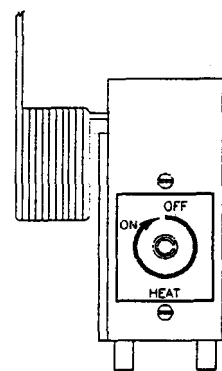


Figure B

Bypass Adjustment

Change **bypass adjustment** if desired volume of brewed liquid requires adjustment.

1. Shut off power and unplug the brewer.
2. Remove the **lower front panel** by removing the **screws** securing the **panel**.
3. Make the desired adjustments by turning the **adjusting knob** clockwise to decrease the total brewed volume; turning counter clockwise to increase volume.

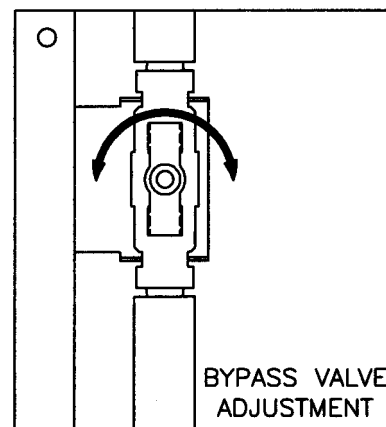


Figure C

Cleaning Procedures

WARNING: BURN HAZARD

HOT LIQUIDS AND SURFACES ARE PRESENT IN THIS EQUIPMENT. TO AVOID BURNS USE CAUTION WHEN CLEANING. RINSE HOT PARTS WITH COLD WATER BEFORE CLEANING. USE GLOVES OR HEAVY CLOTH WHEN REMOVING HOT PARTS FROM BREWER.

Cleaning After Each Brew

Dispose of used tealeaves and rinse **brew basket**.

Cleaning Procedures (cont.)

Daily Cleaning

Cabinet: The outside of the machine can be cleaned with a damp cloth, a household dusting spray or a stainless steel cleaner. Do not use an abrasive such as Scotchbrite or Brillo pads. These may mar the finish.

Wipe the underside of the **cabinet hood** with a clean cloth. Be especially careful when using soap or detergent around the **sprayhead**. Any soap left on the **deflector** may impart an unpleasant taste to the first brews.

Weekly Cleaning

Brew Basket: Use commercial grade urn cleaner (as directed by manufacturer) and rinse thoroughly.

Service

The remainder of this manual contains information to aid the service person making repairs to this equipment. This section has information on performing common service tasks. A section on troubleshooting follows and can be used to help determine the cause of problems with the equipment.

An illustrated parts breakdown follows and will aid in correctly identifying replacement parts. For factory assistance, call 1-800-695-4500 between 8:00 a.m. and 5:00 p.m. Eastern time.

Finally, wiring diagrams are provided for the various models covered by this manual.

To Drain Water Tank



WARNING: BURN HAZARD

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1. Turn off the power to the brewer and allow to cool before draining.
2. Remove the **lower front panel**.
3. Pinch or clamp the **tube** from the **needle valve assembly** to the **tank** and disconnect the **tube** from the **needle valve assembly**. Place the **tube** over a drain, release the **clamp**, and allow the tank to drain.
4. Reconnect **tube** to bottom of **tank** when finished draining.

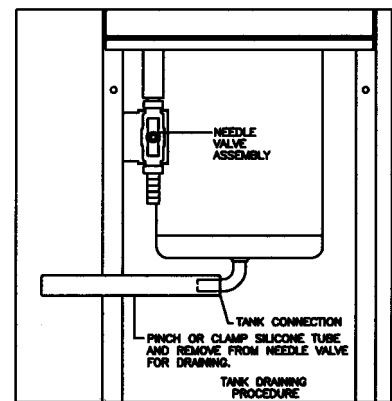


Figure D

To Remove the Water Tank Heating Element

1. Disconnect the **power cord** and remove the **top cover**.
2. Disconnect the **wire leads** to the **heater** and **thermodisc**.
3. Remove the **spray head** and the **spray head nut**.
4. Remove the **tank cover** after removing the (8) **nuts** securing the cover to the tank. Lift the **tank cover** with the **heating element** attached.
5. Remove the **thermostat bulb bracket** retaining the **thermostat bulb** to the **heating element**.
6. Remove the **heating element** from the **tank cover**.
7. Replace the **heating element** with the **sealing washers** in the same configuration; hold the **element** so that it does not twist when tightening the **element nuts**.
8. Reinstall the **tank cover** in reverse order beginning with item number 5.

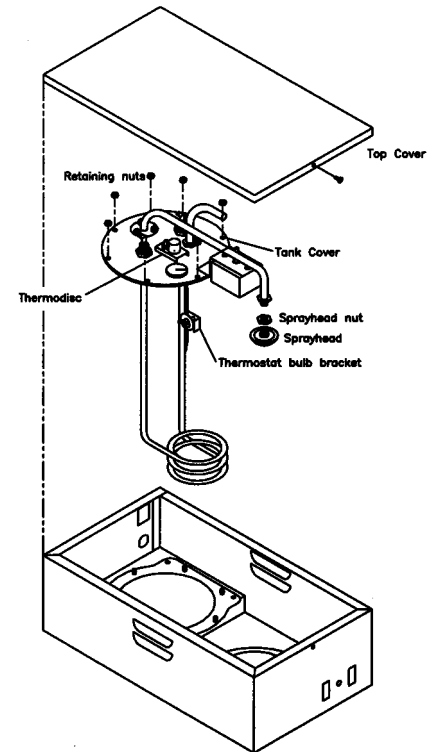



Figure E

TROUBLESHOOTING GUIDE

 **Only a qualified service technician should perform electrical and mechanical adjustments or repairs. Always disconnect power before attempting any maintenance procedures.**

BREWING PROBLEMS

Problem/Cause	Remedy
<p>Weak tea</p> <ul style="list-style-type: none"> • Not enough tea used • Water not hot enough • Water not hot enough • Sprayhead clogged • Tea steeping time too short 	<ul style="list-style-type: none"> • Use 1 oz. (28 g) tea per 1 gallon (3.8 litre) finished product • Wait for Water Hot light to illuminate • Check sprayhead temperature, should be greater than 185° F (85°C) • Remove sprayhead for cleaning. Follow cleaning procedures for sanitizing • Water ratio of bypass to spray over not set properly, ideal setting is 70 to 90 oz. (1960 to 2520 g) of hot water for 3 gallons (11.4 litres)
<p>Strong tea</p> <ul style="list-style-type: none"> • Too much tea used • Tea steeping time too short 	<ul style="list-style-type: none"> • Use 1 oz. (28 g) tea per gallon (3.8 litre) finished product • Water ratio of bypass to spray over not set properly, ideal setting is 70 to 90 oz. (1960 to 2520 g) of hot water for 3 gallons (11.4 litres)
<p>Grounds in tea</p> <ul style="list-style-type: none"> • Paper filter collapsed during brewing • Using filter packs 	<ul style="list-style-type: none"> • Use proper filter • Add screen kit to brew basket
<p>Brew basket overflowed</p> <ul style="list-style-type: none"> • Volume of hot water set too high • Brew basket drain blocked • Brew basket drain blocked 	<ul style="list-style-type: none"> • Water ratio of bypass to spray over not set properly, ideal setting is 70 to 90 oz. (1960 to 2520 g) of hot water for 3 gallons (11.4 litres) • Paper filter collapsed during brewing • Add screen kit to brew basket
<p>Unpleasant taste</p> <ul style="list-style-type: none"> • Tea dispenser or brew basket needs cleaning • Water tank has lime build-up • Taste is coming from water supply 	<ul style="list-style-type: none"> • Clean and sanitize • De-lime water tank • Install a water filtration system
<p>Brew volume too large or too small</p> <ul style="list-style-type: none"> • Timer setting set too long or too short • Water service not supplying adequate water pressure or flow rate 	<ul style="list-style-type: none"> • Adjust timer to desired value • Water pressure measured at the unit's water inlet valve should be between 30 psi to 70 psi delivering a minimum of 1 gallon (3.8 litre) per minute
<p>Brew volume erratic (small variations from batch to batch are normal)</p> <ul style="list-style-type: none"> • Water supply pressure fluctuates • Fill valve faulty or clogged 	<ul style="list-style-type: none"> • Plumb water supply so that water pressure is not significantly affected by other appliances • Check for power at fill valve when unit is calling for water. If water flow is slow or valve not operating then repair valve
<p>Sprayhead will not stop dripping water</p> <ul style="list-style-type: none"> • Brew valve does not close completely 	<ul style="list-style-type: none"> • Visually inspect valve. Clean lime from valve. Seat, cup, or entire valve may need replacement
<p>Water boiling in water tank</p> <ul style="list-style-type: none"> • Temperature in water tank too hot 	<ul style="list-style-type: none"> • Reduce the water tank temperature. Adjustment knob is located on the control board face

FILLING PROBLEMS

Problem/Cause	Remedy
Overfilling of water tank when power is off <ul style="list-style-type: none"> • Fill valve not sealing properly 	<ul style="list-style-type: none"> • Disassemble, clean and reassemble valve. If needed service kits are available
Overfilling of water tank when power is on <ul style="list-style-type: none"> • Fill valve not sealing properly • Fill valve not de-energizing 	<ul style="list-style-type: none"> • Disassemble, clean and reassemble valve. If needed service kits are available • Check wiring of timer, switches and fill valve, if o.k. then defective timer board

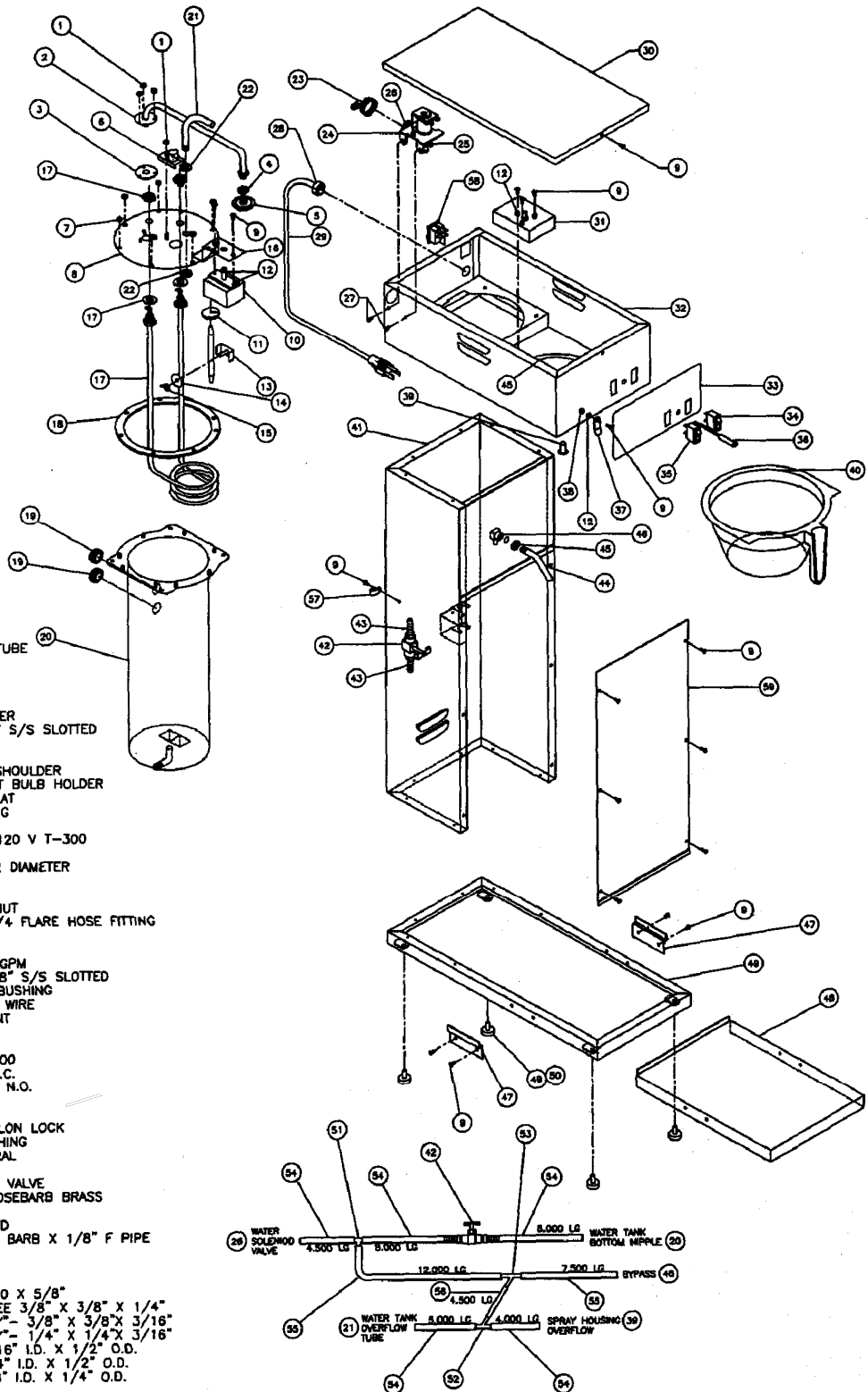
HEATING PROBLEMS

Problem/Cause	Remedy
Water is hot but hot light not illuminated <ul style="list-style-type: none"> • Light burned out 	<ul style="list-style-type: none"> • Replace light
Water tank will not heat <ul style="list-style-type: none"> • Thermostat faulty or out of calibration • Bad electrical connection of heating circuit 	<ul style="list-style-type: none"> • Recalibrate thermostat. If no remedy or thermostat does not cycle, replace thermostat • Check each electrical connection of heating circuit
Recovery time is very long <ul style="list-style-type: none"> • Bad electrical connection of heating circuit • Bad high limit switch • Faulty heating element 	<ul style="list-style-type: none"> • Check each electrical connection of heating circuit • Check resistance across high limit switch, should be no resistance. If resistance present then replace • Check resistance across element with power conductors disconnected. If resistance is much less than 8 Ohms or much more than 15 Ohms, replace part

If you still need help, call our service department at (800) 568-5715 (Monday through Friday, 8 am - 6 pm EST) or an authorized service center in your area. Please have the model numbers ready so that accurate information may be given.

Prior authorization must be obtained from Grindmaster Corporation's Technical Service Department for all warranty claims.

Tea-300 Isometric

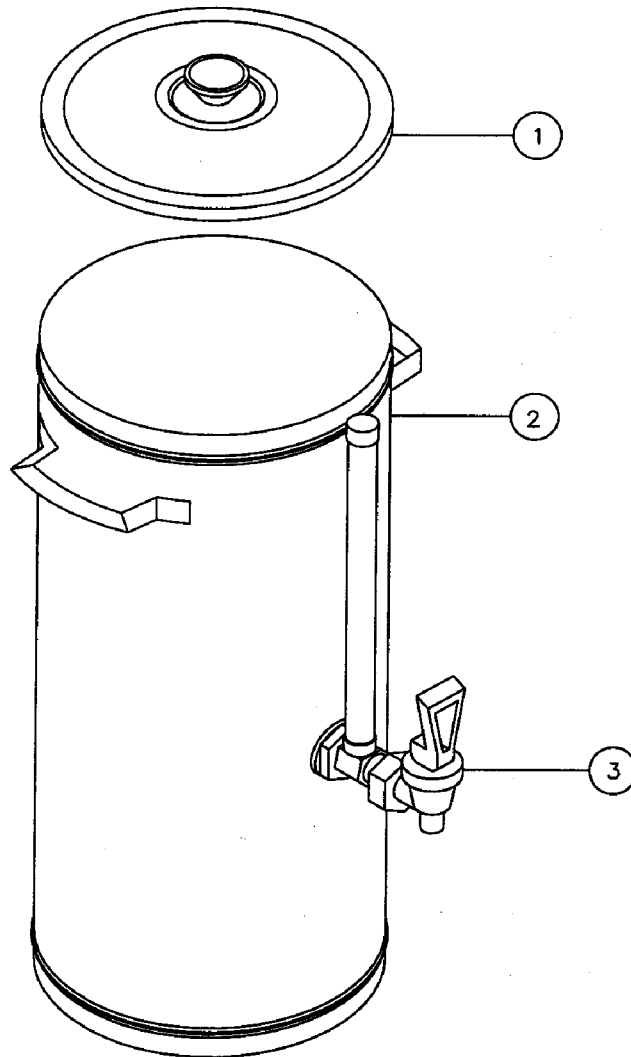


- 1 A601029 NUT, 6-32 S/S HEX
- 2 A518-018 TUBE, SPRAYHEAD
- 3 A544-038 GASKET, SPRAYHEAD TUBE
- 4 A540-228 NUT, SPRAYHEAD
- 5 A518-019 SPRAYHEAD
- 6 A412-000 THERMO-CUTOUT
- 7 A601009 NUT, 8-32 S/S HEX
- 8 A410-046 WELDMENT, TANK COVER
- 9 A601008 SCREW, 6-32 X 3/8" S/S SLOTTED
- 10 A536-004 THERMOSTAT
- 11 A544-008 SILICONE GROMMET
- 12 A541-000 WASHER, #8 NYLON SHOULDER
- 13 AP400-361 BRACKET, THERMOSTAT BULB HOLDER
- 14 A541-009 WASHER, #10 S/S FLAT
- 15 A540-203 NUT, 10-24 S/S WING
- 16 A546-022 DECAL, THERMOSTAT
- 17 A535-076 HEATER, 1650 WATT 120 V T-300
- 18 A544-039 TANK GASKET
- 19 A511008 HOLE BUSHING 13/32 DIAMETER
- 20 A83447 WATER TANK
- 21 A318-279 OVERFLOW TUBE
- 22 A600003 NUT, 1/8 NPS LOCKNUT
- 23 A518-012 ASSEMBLY, FITTING 1/4 FLARE HOSE FITTING
- 24 A537-154 WATER FILL VALVE
- 25 A540-229 #8-32 J NUT
- 26 A537-158 FLOW WASHER, 0.75 GPM
- 27 A539-210 SCREW, #8-32 X 3/8" S/S SLOTTED
- 28 A511010 3/4" STRAIN RELIEF BUSHING
- 29 A550-186 POWER CORD #14-3 WIRE
- 30 A413-039 COVER, TOP WELDMENT
- 31 A530-009 TIMER, COLUMBIA
- 32 A417-234 HOOD WELDMENT
- 33 A546-345 DECAL, FRONT TEA-300
- 34 A531-063 SWITCH, RED STOP N.C.
- 35 A531-062 SWITCH, WHITE START N.O.
- 36 A515016 LIGHT, AMBER PILOT
- 37 A314-148 LID LOCK S/S
- 38 A540-206 NUT, #6-32 S/S NYLON LOCK
- 39 A548-042 BRASS FLANGED BUSHING
- 40 A548-135 BREW BASKET, NATURAL
- 41 A417-235 TOWER WELDMENT
- 42 A528092 1/4" FEMALE NEEDLE VALVE
- 43 A528028 1/4" NPT X 3/8" HOSEBARB BRASS
- 44 A318-280 BYPASS TUBE
- 45 A600003P NUT, 1/8 NPS PLATED
- 46 A538-123 FITTING, ELBOW 3/8" BARB X 1/8" F PIPE
- 47 A314-605 KEEPER, CONTAINER
- 48 A313-247 SHELF COVER
- 49 A13068 LEG
- 50 A13046 LEG, LEVELER 1/4-20 X 5/8"
- 51 A548-134 FITTING, REDUCING TEE 3/8" X 3/8" X 1/4"
- 52 A548-133 FITTING, REDUCING Y- 3/8" X 3/8" X 3/16"
- 53 A548-130 FITTING, REDUCING Y- 1/4" X 1/4" X 3/16"
- 54 A585-016 SILICONE TUBING 5/16" I.D. X 1/2" O.D.
- 55 A585-242 SILICONE TUBING 1/4" I.D. X 1/2" O.D.
- 56 A512011 SILICONE TUBING 1/8" I.D. X 1/4" O.D.
- 57 A548-136 HOSE STRAIN RELIEF
- 58 A531-065 SWITCH, POWER
- 59 A317-698 PANEL, LOWER FRONT

TUBING SCHEMATIC

REL	RELEASE	EK 1177
REV	DESCRIPTION	BY ECN#
PART NO.: TEA-300 ISO		

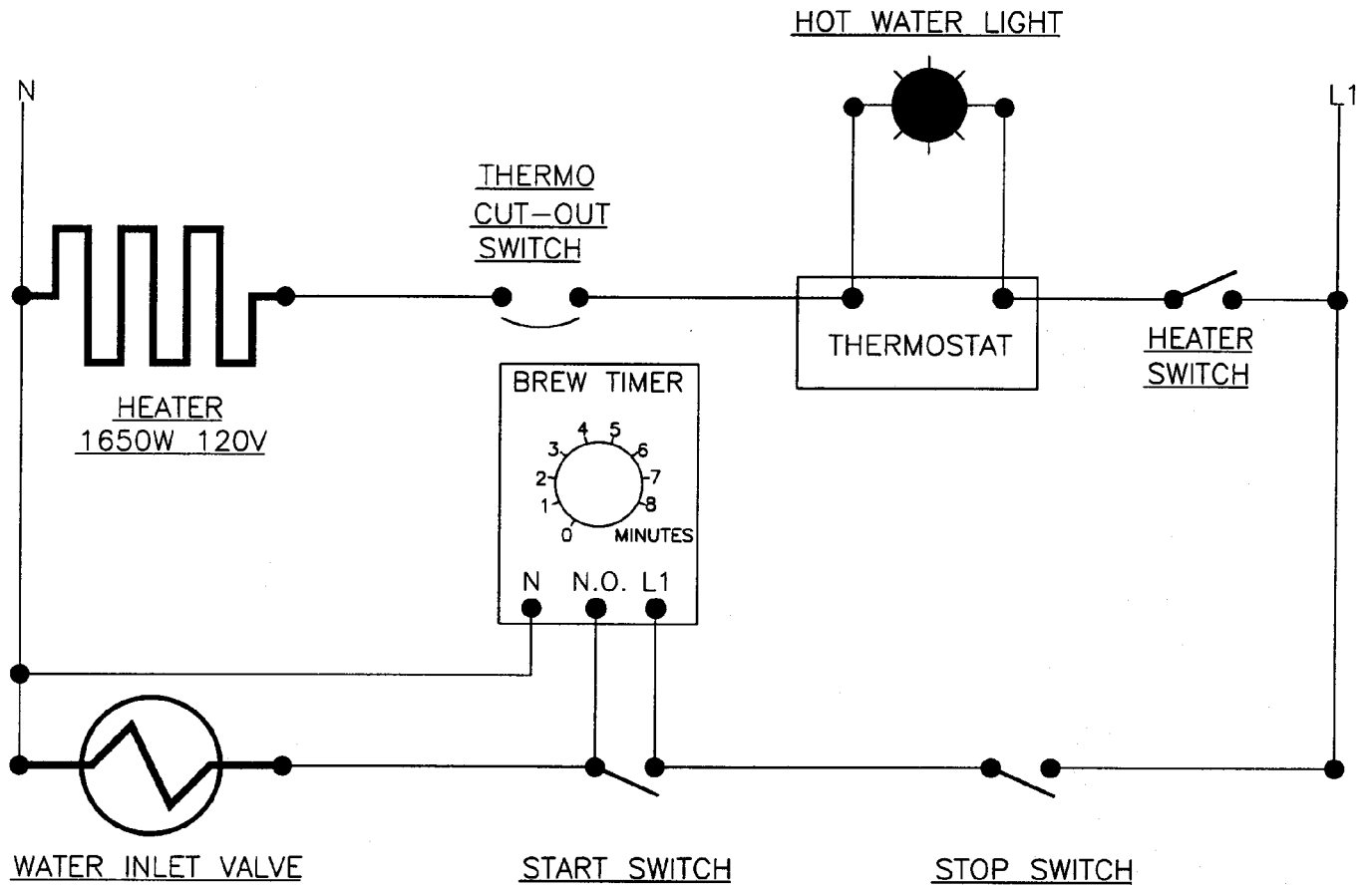
Tea-300 3-Gallon Dispenser Isometric



ITEM	PART #	DESCRIPTION
1	A553-012	COVER, DISPENSER (INCLUDES KNOB)
2	A416-634	WELDMENT, DISPENSER BODY
3	A522092	FAUCET, PLASTIC
4	A546-344	DECAL, FRONT TEA

REL	RELEASE	EK	1177
REV.	DESCRIPTION	BY	ECN#
PART NO.: TEA-300 ISO			

Tea-300 Wiring Schematic



REL	RELEASE	EK	1177
REV.	DESCRIPTION	BY	ECN#
PART NO.: TEA-300		ISO	

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