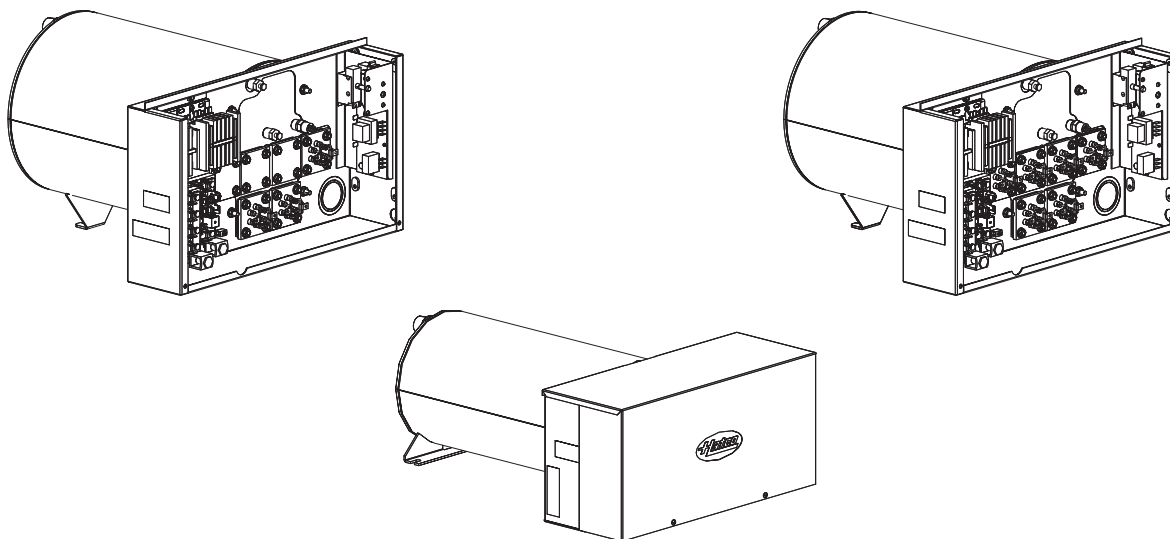




# Atmospheric Booster Water Heater ABB Series for Jackson Dish Machines

## Installation and Operating Manual Replacement Parts List

I&W #07.05.232.00



Do not operate this equipment unless you have read and understood the contents of this manual! Failure to follow the instructions contained in this manual may result in serious injury or death. This manual contains important safety information concerning the maintenance, use, and operation of this product. If you're unable to understand the contents of this manual, please bring it to the attention of your supervisor. Keep this manual in a safe location for future reference.



No opere este equipo al menos que haya leído y comprendido el contenido de este manual! Cualquier falla en el seguimiento de las instrucciones contenidas en este manual puede resultar en un serio lesión o muerte. Este manual contiene importante información sobre seguridad concerniente al mantenimiento, uso y operación de este producto. Si usted no puede entender el contenido de este manual por favor pregunte a su supervisor. Almacenar este manual en una localización segura para la referencia futura.

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## IMPORTANT OWNER INFORMATION

Record the model number, serial number, voltage, and purchase date of the unit in the spaces below (specification label located on the back of the control box enclosure). Please have this information available when calling Hatco for service assistance.

Model No. \_\_\_\_\_

Serial No. \_\_\_\_\_

Voltage \_\_\_\_\_

Date of Purchase \_\_\_\_\_

Business Hours: 8:00 AM to 5:00 PM  
Central Standard Time (C.S.T.)  
(Summer Hours: June to September –  
8:00 AM to 5:00 PM C.S.T.  
Monday through Thursday  
8:00 AM to 2:30 PM C.S.T. Friday)

Telephone: (800) 558-0607; (414) 671-6350

E-mail: [partsandservice@hatcocorp.com](mailto:partsandservice@hatcocorp.com)

Fax: (800) 690-2966 (Parts and Service)  
(414) 671-3976 (International)



24 Hour 7 Day Parts and Service  
Assistance available in the United States  
and Canada by calling (800) 558-0607.

Additional information can be found by visiting our web site at  
[www.hatcocorp.com](http://www.hatcocorp.com).

## INTRODUCTION

Hatco Atmospheric Booster Water Heaters are designed for use with commercial dish machines to boost the temperature of the regularly available hot water, usually 110°–150°F (43°–66°C), up to 180°F (82°C). Water at 180°F (82°C) can be used as sanitizing rinse water in commercial dish machines in accordance with Health Codes, NSF Standard #5, and plumbing codes.

All Atmospheric Booster Water Heaters are ready for electrical and plumbing service connections with a pre-set ambient compensated immersion thermostat(s) and a high temperature limit switch. The service area is accessible from the front of the unit, permitting easy installation.

Hatco Atmospheric Booster Water Heaters are products of extensive research and field testing. The materials used were selected for maximum durability, attractive appearance, and optimum performance. Every unit is inspected and tested thoroughly prior to shipment.

This manual provides the installation, safety, and operating instructions for Atmospheric Booster Water Heaters. Hatco recommends all installation, operating, and safety instructions appearing in this manual be read prior to installation or operation of the unit.

Safety information that appears in this manual is identified by the following signal word panels:

### **WARNING**

**WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.

### **CAUTION**

**CAUTION** indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

### **NOTICE**

**NOTICE** is used to address practices not related to personal injury.

# IMPORTANT SAFETY INFORMATION



Read the following important safety information before using this equipment to avoid serious injury or death and to avoid damage to equipment or property.

## WARNING

### ELECTRIC SHOCK HAZARD:

- Unit must be installed by qualified, trained installers. Installation must conform to all local electrical and plumbing codes. Installation by unqualified personnel will void the unit warranty and may lead to electric shock or burn, as well as damage to unit and/or its surroundings. Check with local plumbing and electrical inspectors for proper procedures and codes.
- Consult a licensed electrical contractor for proper electrical installation conforming to local electrical codes and the National Electrical Code (N.E.C.).
- Failure to ground unit properly could result in serious personal injury or death.
- Turn power OFF at fused disconnect switch/circuit breaker and allow unit to cool before performing any maintenance, adjustments, or cleaning.
- This unit has two power sources:
  - Control circuit rated at 24 V AC or 120 V AC
  - Heater circuit rated at line voltageDisconnect BOTH power sources before performing any maintenance or cleaning.
- DO NOT submerge or saturate with water. Unit is not waterproof. Do not operate if unit has been submerged or saturated with water.
- Unit is not weatherproof. Locate unit indoors where the ambient air temperature is a minimum of 70°F (21°C).
- Some units must be supplied with over-current protection fusing on supply leads. Consult wiring diagram for electrical specifications.
- This unit must be serviced by qualified personnel only. Service by unqualified personnel may lead to electric shock or burn.
- Use only Genuine Hatco Replacement Parts when service is required. Failure to use Genuine Hatco Replacement Parts will void all warranties and may subject operators of the equipment to hazardous electrical voltage, resulting in electrical shock or burn. Genuine Hatco Replacement Parts are specified to operate safely in the environments in which they are used. Some aftermarket or generic replacement parts do not have the characteristics that will allow them to operate safely in Hatco equipment.

### EXPLOSION HAZARD:

- Do not connect an expansion tank of any type to booster water heater water lines.
- Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

Install booster water heater in a horizontal position with the base parallel to the floor and the inlet connection at the lowest point. Unit must be accessible for service. Improper installation could create an unsafe condition.

## WARNING

Do not install a shutoff valve between the booster water heater outlet fitting and the dish machine rinse head openings (a vacuum breaker may be used).

The water supply line must have a pressure regulating valve installed before the booster water heater inlet fitting that is maintaining incoming water pressure at 15–25 psi (103–172 kPa).

Units are equipped with a high temperature limit safety switch that will shut off power if unit overheats. Contact an Authorized Hatco Service Agent if the high temperature limit safety switch cannot be reset or continues to trip.

Install atmospheric booster water heater as close as possible to commercial dish machine. Employ recirculation if distance between water heater and dish machine exceeds National Sanitation Foundation (NSF) specifications of five (5) linear feet (1524 mm).

It is essential to recognize that even though a booster water heater may be installed properly and approved initially, there exists the possibility that unknowing individuals might alter or change the installation in a manner that would render it unsafe. Therefore, it is important that all safety programs provide some mechanism to assure that these installations are inspected periodically.

This unit has no “user-serviceable” parts. If service is required on this unit, contact an Authorized Hatco Service Agent or contact the Hatco Service Department at 800-558-0607 or 414-671-6350; fax 800-690-2966; or International fax 414-671-3976.

## CAUTION

### BURN HAZARD:

- Water in unit is very hot. Wear protective gloves and proper attire when operating to avoid injury.
- Some exterior surfaces on unit will get hot. Use caution when touching these areas.
- Hot water in the tank may cause scalding injury. Allow unit to cool before draining.

Use only plumbing material suitable for a minimum water temperature of 200°F (93°C). Materials used must meet National Sanitation Foundation (NSF) specifications and all local plumbing codes and regulations.

Do not connect booster water heaters to domestic (consumer) dishwashers or other domestic utilized equipment. This booster may damage domestic equipment.

Do not connect booster water heater directly to a boiler or furnace coil or any other uncontrolled temperature source. The booster heater thermostat could be damaged causing unit to overheat.

# SAFETY PRECAUTIONS

## NOTICE

DO NOT turn on power to the booster water heater until tank has been filled with water and all air has been vented through dish machine rinse nozzle. The heating elements will burn out in seconds if operated when they are not immersed in water.

Always turn off power to booster water heater before draining water from the tank. Failure to turn off power could result in element burnout.

Use dielectric couplings when connecting dissimilar metals, such as galvanized to copper. This will prevent electrolysis or plumbing damage.

DO NOT turn or adjust water inlet fitting or water outlet fitting.

Supply pressure must be regulated between 15–25 psi (103–172 kPa) to maintain proper rinse temperature and pressure.

Do not back out or loosen any pipe fittings. Doing so may cause leaks.

## NOTICE

Incoming water in excess of 3 grains of hardness per gallon (GPG) (0.75 grains of hardness per liter [GPL]) must be treated and softened before being supplied to booster water heater. Water containing over 3 GPG (0.75 GPL) will decrease efficiency, increase energy use, and reduce operating life of unit through increased lime buildup. Product failure caused by liming or sediment buildup is not covered under warranty.

Connect electric booster water heater to the same power supply as indicated on the specification decal only. Connecting unit to an incorrect power supply voids the product warranty and will damage the equipment.

Do not rotate water outlet fitting on booster water heater when connecting to dish machine.

Do not over-tighten small thermostat packing nut or the sleeve in bushing will cut through capillary tubing.

## MODEL DESCRIPTION

### General

Hatco Atmospheric Booster Water Heaters are designed to provide 180°F (82°C) water to commercial dish machines for sanitizing and to flash dry dishes and flatware. They are fabricated of powder-coated stainless steel and are designed to save space by being mounted directly to the dish machine. All controls and the heating elements are readily accessible in the control box area. A safety low-water cut-off is provided also as part of the system.

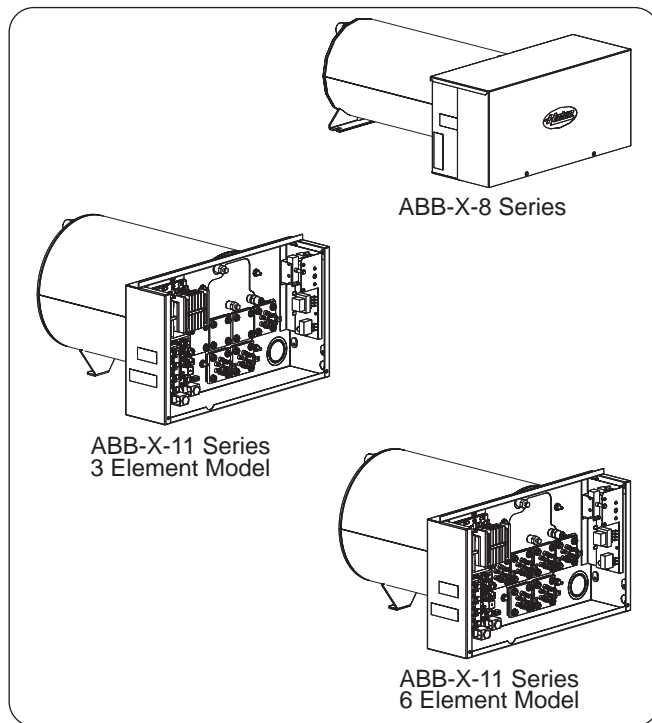


Figure 1. Atmospheric Booster Water Heaters

## MODEL DESIGNATION

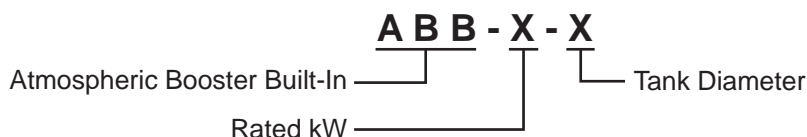


Figure 2. Model Designation

## Operational Specifications

Design Voltages: Control Circuit = 24 V AC or 120 V AC

Heating Circuit = see "Electrical Rating Chart"

Rinse Pressure: 15–25 psi (103–172 kPa)

Maximum Thermostat Setpoint: 192°F (89°C)

## Electrical Rating Chart

Atmospheric Booster Water Heaters require two electrical circuits — a control circuit and a heating circuit. The control circuit for all units is rated at either 24 V AC or 120 V AC. Refer to the chart below for the appropriate heating circuit electrical information.

*NOTE: The specification label is located on the back of the control box enclosure. See label for serial number and verification of unit electrical information.*

*NOTE: Atmospheric booster water heaters are voltage and phase specific and are not field convertible.*

Model	Voltage	Watts	Amps	Phase
ABB-9-8 and ABB-9-11	208	9000	43.3	1
	208	9000	25	3
	240	9000	37.5	1
	240	9000	21.7	3
	380	9000	13.7	3
	480	9000	10.8	3
ABB-12-8 and ABB-12-11	208	12000	57.7	1
	208	12000	33.3	3
	240	12000	50	1
	240	12000	28.9	3
	380	12000	18.2	3
	480	12000	14.4	3
ABB-13-8 and ABB-13-11	208	13500	64.9	1
	208	13500	37.5	3
	240	13500	56.3	1
	240	13500	32.5	3
	380	13500	20.5	3
	480	13500	16.2	3
ABB-15-8 and ABB-15-11	208	15000	72.1	1
	208	15000	41.6	3
	240	15000	62.5	1
	240	15000	36.1	3
	380	15000	22.8	3
	480	15000	18	3
ABB-17-8 and ABB-17-11	208	17500	47.9	3
ABB-18-8 and ABB-18-11	208	18000	86.5	1
	240	18000	75	1
	240	18000	43.3	3
	380	18000	27.3	3
	480	18000	21.7	3

Model	Voltage	Watts	Amps	Phase
ABB-24-11	208	24000	115.4	1
	208	24000	66.6	3
	240	24000	100	1
	240	24000	57.7	3
	380	24000	36.5	3
	480	24000	28.9	3
ABB-27-11	208	27000	129.8	1
	208	27000	74.9	3
	240	27000	112.5	1
	240	27000	65	3
	380	27000	41	3
	480	27000	32.5	3
ABB-30-11	208	30000	144.2	1
	208	30000	83.3	3
	240	30000	125	1
	240	30000	72.2	3
	380	30000	45.6	3
	480	30000	36.1	3
ABB-36-11	240	36000	86.6	3
	480	36000	43.3	3
ABB-39-11	240	39000	93.8	3
	480	39000	46.9	3

The shaded areas contain electrical information for International models only.

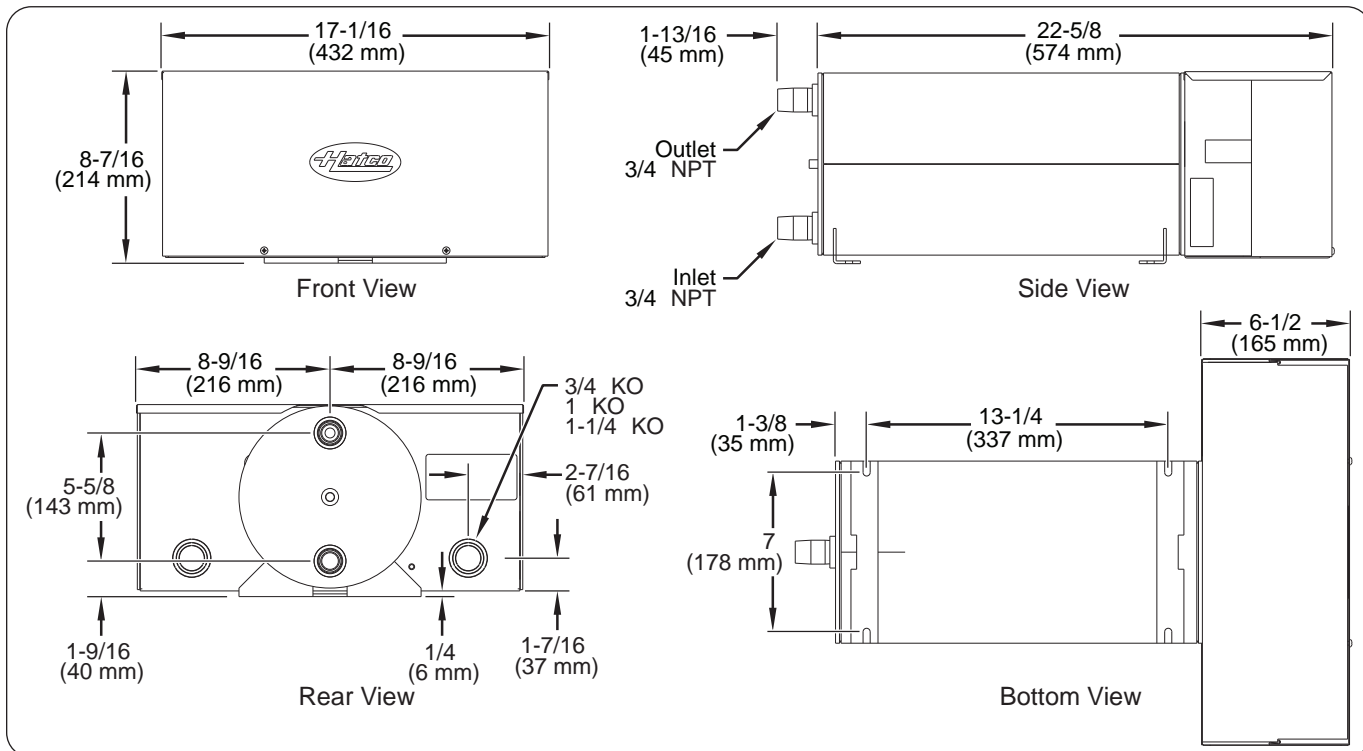
## ⚠ WARNING

### ELECTRIC SHOCK HAZARD:

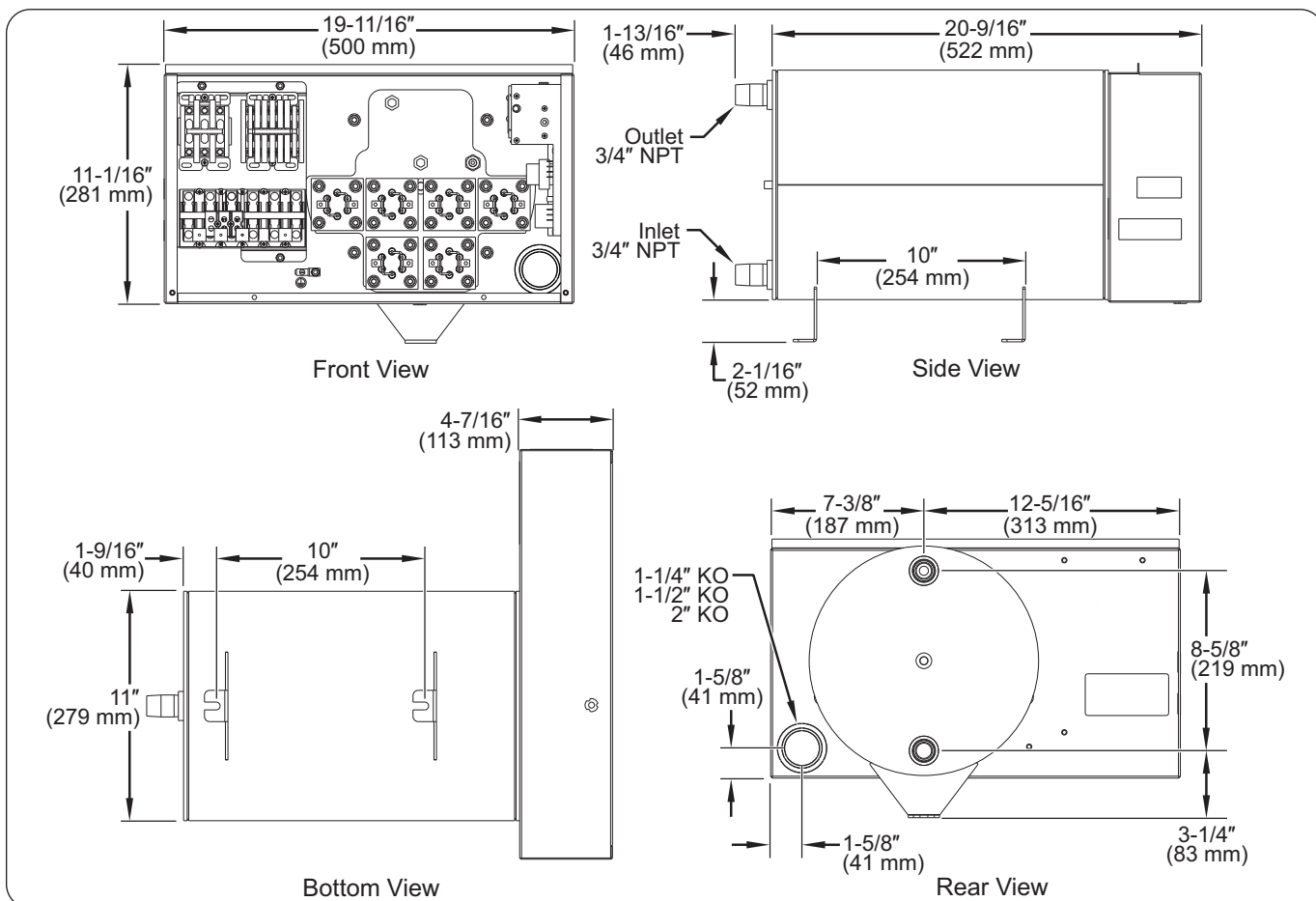
- Unit must be installed by qualified, trained installers. Installation must conform to all local electrical and plumbing codes. Installation by unqualified personnel will void the unit warranty and may lead to electric shock or burn, as well as damage to unit and/or its surroundings. Check with local plumbing and electrical inspectors for proper procedures and codes.
- Consult a licensed electrical contractor for proper electrical installation conforming to local electrical codes and the National Electrical Code (N.E.C.).

# SPECIFICATIONS

## Dimensions — ABB-X-8 Series



## Dimensions — ABB-X-11 Series





## General

Atmospheric Booster Water Heaters are designed as components for installation into approved dish machine systems. These units are not intended for general installation with existing dish machines.

### WARNING

#### ELECTRIC SHOCK HAZARD:

- Unit must be installed by qualified, trained installers. Installation must conform to all local electrical and plumbing codes. Installation by unqualified personnel will void the unit warranty and may lead to electric shock or burn, as well as damage to unit and/or its surroundings. Check with local plumbing and electrical inspectors for proper procedures and codes.
- Consult a licensed electrical contractor for proper electrical installation conforming to local electrical codes and the National Electrical Code (N.E.C.).
- This unit has two power sources:
  - Control circuit rated at 24 V AC or 120 V AC
  - Heater circuit rated at line voltageDisconnect BOTH power sources before performing any maintenance or cleaning.
- Unit is not weatherproof. Locate unit indoors where the ambient air temperature is a minimum of 70°F (21°C).
- Some units must be supplied with over-current protection fusing on supply leads. Consult wiring diagram for electrical specifications.

#### EXPLOSION HAZARD:

- Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.
- Do not connect an expansion tank of any type to booster water heater water lines.

Install booster water heater in a horizontal position with the base parallel to the floor and the inlet connection at the lowest point. Unit must be accessible for service. Improper installation could create an unsafe condition.

Install atmospheric booster water heater as close as possible to commercial dish machine. Employ recirculation if distance between water heater and dish machine exceeds National Sanitation Foundation (NSF) specifications of five (5) linear feet (1524 mm).

### CAUTION

Use only plumbing material suitable for a minimum water temperature of 200°F (93°C). Materials used must meet National Sanitation Foundation (NSF) specifications and all local plumbing codes and regulations.

Do not connect booster water heater directly to a boiler, furnace coil, or any other uncontrolled temperature source. Connecting booster water heater to an uncontrolled temperature source could damage the thermostat and cause unit to overheat, resulting in an unsafe condition.

Do not connect booster water heaters to domestic (consumer) dishwashers or other domestic utilized equipment. This booster may damage domestic equipment.

### NOTICE

**Always turn off power to booster water heater before draining water from the tank. Failure to turn off power could result in element burnout.**

**Do not turn on power to booster water heater until tank has been filled with water and all air has been vented through dish machine rinse nozzle. Heating elements will burn out in seconds if operated when they are not immersed in water.**

**Connect booster water heaters to the same power supply as indicated on the specification decal only. Connecting units to an incorrect power supply will void the product warranty and may damage the equipment.**

Atmospheric Booster Water Heaters are shipped with most components pre-assembled. Care should be taken when unpacking the shipping carton to avoid damage to the unit and components enclosed.

1. Remove the unit from the carton.
2. Remove the information packet.

*NOTE: To prevent delay in obtaining warranty coverage, fill out and mail in the warranty card to Hatco.*

3. Remove tape and protective packaging from all surfaces of the unit.
4. Install the unit into an approved dish machine system. Refer to "Installation Basics" and the "Installation Instructions" procedure in this section.

## Installation Basics

Remember the following information when installing an atmospheric booster water heater.

- This unit is designed as a component for installation into an approved dish machine system.
- Install the atmospheric booster water heater as close as possible to the commercial dish machine. The location must have a solid foundation along with being clean and dry. Adequate front clearance is required to allow for accessibility to the control compartment.
- Do not install a shutoff valve between the water outlet fitting (upper tank fitting) and the dish machine rinse head. A vacuum breaker may be provided between the water outlet fitting and rinse head.
- Water supply pressure must be regulated between 15 and 25 PSI during the rinse cycle to maintain proper rinse temperature and pressure.
- A rinse control solenoid valve must be installed before the water inlet fitting (lower tank fitting) of the booster water heater.
- Fusing (when required) is furnished by Hatco on the unit. Refer to the included wiring diagram for specific information.
- Power is furnished by the dish machine manufacturer as part of the total system.

# INSTALLATION

## Installation Instructions

Use the following procedure to install an atmospheric booster water heater into an approved dish machine system.

### NOTICE

**DO NOT** turn or adjust water inlet fitting or water outlet fitting.

**Do not** rotate water outlet fitting on booster water heater when connecting to dish machine.

**To avoid possible leaks, do not back out or loosen any pipe fittings.**

**Incoming water in excess of 3 grains of hardness per gallon (GPG) (0.75 grains of hardness per liter [GPL]) must be treated and softened before being supplied to booster water heater. Water containing over 3 GPG (0.75 GPL) will decrease efficiency, increase energy use, and reduce operating life of unit through increased lime buildup. Product failure caused by liming or sediment buildup is not covered under warranty.**

**Use dielectric couplings when connecting dissimilar metals, such as galvanized to copper. This will prevent electrolysis or plumbing damage.**

1. For ABB-X-8 units, remove the front cover from the booster water heater by removing the stainless steel screws.

2. Locate the tank on the dish machine frame and bolt into place.

For ABB-X-8 units:

- a. Using four 1/4-20 hex head bolts and nuts (provided by the dish machine manufacturer), secure the booster water heater to the top of the dish machine through the mounting slot on each base leg plate.

For ABB-X-11 units:

- a. Using two 1/4-20 hex head bolts and nuts (provided by the dish machine manufacturer), secure the booster water heater to the top of the dish machine through the mounting slot on each base leg plate.
- b. Using four 1/4-20 hex head bolts (provided by the dish machine manufacturer), secure the booster water heater control box to the dish machine control box (weld nuts are provided on the booster water heater control box).

### WARNING

**Do not install a shutoff valve between the booster water heater outlet fitting and the dish machine rinse head openings (a vacuum breaker may be used).**

3. Connect the rinse line for the dish machine to the water outlet fitting (upper tank fitting) of the booster water heater using NSF-approved thread sealing compound.

*NOTE: Make sure the connection is made to the final rinse line and not to the wash tank.*

### CAUTION

**The water supply line must have a pressure regulating valve installed before the booster water heater inlet fitting that is maintaining incoming water pressure at 15–25 psi (103–172 kPa).**

4. Connect the water supply line to the water inlet fitting (lower tank fitting) of the water heater using NSF-approved thread sealing compound.

*NOTE: Make sure a drain valve is installed immediately upstream from the water inlet fitting on the water supply line.*

### WARNING

**ELECTRIC SHOCK HAZARD: Some units must be supplied with over-current protection fusing on supply leads. Consult wiring diagram for electrical specifications.**

5. Connect the power supply conduit to the back of the control box enclosure and secure. This unit has two power sources:

- Control circuit rated at 24 V AC or 120 V AC
- Heater circuit rated at line voltage

*NOTE: Hatco Atmospheric Booster Water Heaters are available for operation on standard power systems. Check the specification label for the proper power supply.*

6. Connect an equipment grounding lead to the unit grounding lug (a grounding lug is provided near the supply terminals).

### WARNING

**Failure to ground unit properly could result in serious personal injury or death.**

7. Connect the heating circuit power leads to the terminal block or fuse block, depending on the unit, as shown on the included wiring diagram.
8. Connect the control circuit leads to the low-water cut-off board (refer to the wiring diagram).

### NOTICE

**Do not turn on power to booster water heater until tank has been filled with water and all air has been vented through dish machine rinse nozzle. Heating elements will burn out in seconds if operated when they are not immersed in water.**

*NOTE: Due to the rigors of transportation, all connections should be checked for tightness before the booster water heater is put into operation.*

9. For ABB-X-8 units, replace the front cover on the booster water heater using the stainless steel screws.



## General

Atmospheric Booster Water Heaters are designed for ease of operation. Perform the following procedures to operate the unit.

### WARNING

**Read all safety messages in the IMPORTANT SAFETY INFORMATION section before operating this equipment.**

**Units are equipped with a high temperature limit safety switch that will shut off power if unit overheats. Contact an Authorized Hatco Service Agent if the high temperature limit safety switch cannot be reset or continues to trip.**

## Startup

1. Close the drain valve on the water supply line.
2. Open the shutoff valve on the water supply line. Water temperature at the inlet fitting should be 110° to 140°F (43° to 60°C) and should not exceed 160°F (71°C).

*NOTE: Minimum temperature differential between the inlet fitting and the outlet fitting never should be less than 20°F (11°C).*

### NOTICE

**Do not turn on power to booster water heater until tank has been filled with water and all air has been vented through dish machine rinse nozzle. Heating elements will burn out in seconds if operated when they are not immersed in water.**

3. Check all plumbing connections for leaks.
4. Turn on the electrical supply to the booster water heater.

### CAUTION

#### BURN HAZARD:

- **Water in unit is very hot. Wear protective gloves and proper attire when operating to avoid injury.**
  - **Some exterior surfaces on unit will get hot. Use caution when touching these areas.**
5. When the water heater has had sufficient heating time, operate the rinse cycle and check the water temperature and pressure readings on the dish machine gauges.

Water temperature at the water heater outlet fitting should be 185°–190°F (85°–88°C). Flow pressure should be between 15–25 psi (103–172 kPa).

## Shutdown

Under normal and regular operation, Hatco recommends that the unit be turned on at all times.

If the water heater will not be used for an extended period of time or will be exposed to freezing conditions, it should be shut down and drained to prevent damage to the unit.

1. Disconnect the power supply to the booster water heater.
2. Close the shutoff valve on the booster water heater water supply line.
3. Open the drain valve on the water supply line and drain water from the booster water heater tank.

### NOTICE

**Always turn off power to booster water heater before draining water from the tank. Failure to turn off power could result in element burnout.**

# MAINTENANCE

## General

Atmospheric Booster Water Heaters are designed for maximum durability and performance with minimum maintenance.

### **⚠ WARNING**

#### **ELECTRIC SHOCK HAZARD:**

- Turn power OFF at fused disconnect switch/circuit breaker and allow unit to cool before performing any maintenance, adjustments, or cleaning.
- This unit has two power sources:
  - Control circuit rated at 24 V AC or 120 V AC
  - Heater circuit rated at line voltageDisconnect BOTH power sources before performing any maintenance or cleaning.
- This unit must be serviced by qualified personnel only. Service by unqualified personnel may lead to electric shock or burn.
- Use only Genuine Hatco Replacement Parts when service is required. Failure to use Genuine Hatco Replacement Parts will void all warranties and may subject operators of the equipment to hazardous electrical voltage, resulting in electrical shock or burn. Genuine Hatco Replacement Parts are specified to operate safely in the environments in which they are used. Some aftermarket or generic replacement parts do not have the characteristics that will allow them to operate safely in Hatco equipment.

This unit has no “user-serviceable” parts. If service is required on this unit, contact an Authorized Hatco Service Agent or contact the Hatco Service Department at 800-558-0607 or 414-671-6350; fax 800-690-2966; or International fax 414-671-3976.

## High Temperature Limit Safety Switch

All Hatco Atmospheric Booster Water Heaters are equipped with a manually reset high temperature limit safety switch. If the temperature of the water in the water heater exceeds 210°F (99°C), the safety switch will shut off power to the water heater. The switch must be reset manually by pushing the red temperature reset button on the high temperature limit control. To access the high temperature limit control, remove the front cover. It is located on the right side of the unit in the mounting bracket above the thermostat control.

If the high temperature limit safety switch continually shuts off power to the water heater, the high temperature limit control may need to be serviced. Contact an Authorized Service Agent or Hatco for assistance.

## Adjusting the Thermostat

The thermostat is factory calibrated to produce temperatures of 185°–190°F (85°–88°C). If adjustment or recalibration is required, use the following procedure.

*NOTE: Low temperature dish machines require the thermostat(s) to be adjusted to 140°–150°F (60°–66°C).*

1. Remove the front cover from the booster water heater.
2. Locate the thermostat control in the mounting bracket on the lower right side of the unit.
3. To **increase** the temperature setpoint, turn the outer adjustment shaft clockwise.  
To **decrease** the temperature setpoint, turn the outer adjustment shaft counterclockwise.

*NOTE: 1/6 turn of the outer adjustment shaft equals 12°F (6.7°C).*

If recalibration is necessary, with the outer adjustment shaft at high stop, turn the inner adjustment screw clockwise to raise the setpoint.

*NOTE: 1/6 turn of the inner adjustment screw equals 8°F (4.4°C).*

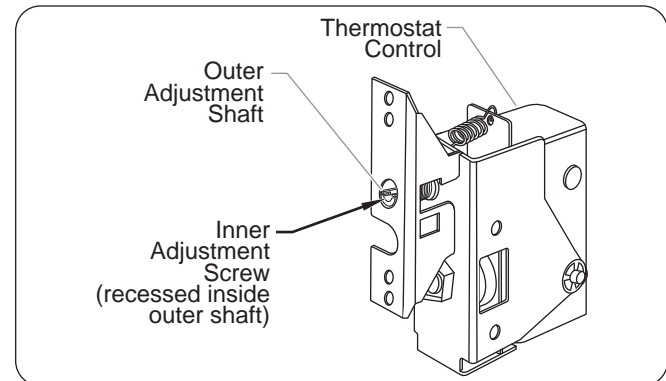


Figure 4. Thermostat Adjustment

## Preparing To Service the Booster Heater

Always perform the following procedure before servicing the water heater.

1. Disconnect power from the dish machine and booster water heater.

### **⚠ WARNING**

**This unit has two power sources:**

- Control circuit rated at 24 V AC or 120 V AC
- Heater circuit rated at line voltage

**Disconnect BOTH power sources before performing any maintenance or cleaning.**

2. Remove the front cover from the booster water heater.

### **⚠ CAUTION**

**Hot water in the tank may cause scalding injury. Allow unit to cool before draining.**

3. Drain the tank, if necessary. Allow the contents of the tank to cool before draining. To drain the tank, shut off the inlet water supply and open the drain valve on the water supply line.

## Replacing a Heating Element

1. Perform the "Preparing to Service the Booster Heater" procedure in this section of the manual. It is required to drain the tank for this procedure.
2. Disconnect the wire leads from the heating element terminals.
3. Remove the four 1/4"-20 nuts that secure the heating element to the water heater.
4. Pull out the heating element.
5. Remove the old heating element gasket material.
6. Install the new heating element and gasket by reversing steps 2–5 of this procedure. Tighten the four heating element nuts to 40 in./lbs.

## Replacing the Thermostat

1. Perform the "Preparing to Service the Booster Heater" procedure in this section of the manual. It is required to drain the tank for this procedure.
2. Remove the thermostat control from the mounting bracket.
3. Remove the wire leads from the thermostat control terminals.
4. Using a 5/16" wrench, loosen the small packing nut on the sensor bulb assembly from the bushing.
5. Using a 11/16" wrench, loosen and remove the mounting bushing from the tank.
6. Remove the sensor bulb assembly along with the thermostat control from the tank.
7. Coat the mounting bushing on the new thermostat with an FDA/NSF-approved sealant.
8. Carefully pull on the capillary tube to seat the end of the sensor bulb into the recess in the mounting bushing on the new thermostat.
9. Insert sensor bulb and mounting bushing into the tank while holding the sensor bulb in place by gently pulling back on the capillary tube. Tighten the mounting bushing with an 11/16" wrench to 20–30 ft./lbs. torque.
10. Lock the sensor bulb and capillary tube in place by tightening the small packing nut to 40 in./lbs.

### NOTICE

**Do not over-tighten small thermostat packing nut or the sleeve in bushing will cut through capillary tubing.**

11. Reattach the wire leads onto the thermostat control terminals. Connect one wire to the N.C. (Normally Closed) terminal and the other to the COMMON terminal. Reattach the thermostat control to the mounting bracket.

*NOTE: Make sure the tank is filled with water before turning on power.*

*NOTE: The thermostat is factory calibrated to produce temperatures of 185°–190°F (85°–88°C).*

## Replacing the Low Water Cutoff Control Board

The low water cutoff detects a low level of water in the water heater tank and will shut off power to the water heater to prevent heating element burnout. Use the following procedure to replace the low water cut-off control board.

1. Perform the "Preparing to Service the Booster Heater" procedure in this section of the manual. It is not necessary to drain the tank for this procedure.
2. Label the wires for reconnection, then disconnect the wires from the old low water cutoff control board.
3. Remove the two screws that secure the low water cut-off control board to the mounting bracket.
4. Install the new low water cutoff control board by reversing steps 2–3 of this procedure.



### WARNING

**This unit has no "user-serviceable" parts. If service is required on this unit, contact an Authorized Hatco Service Agent or contact the Hatco Service Department at 800-558-0607 or 414-671-6350; fax 800-690-2966; or International fax 414-671-3976.**

# TROUBLESHOOTING GUIDE

## General



### ELECTRIC SHOCK HAZARD:

- Turn power OFF at disconnect switch/circuit breaker and allow unit to cool before performing any maintenance or cleaning.
- This unit must be serviced by qualified personnel only. Service by unqualified personnel may lead to electric shock or burn.

**IMPORTANT!** Many times when a booster water heater does not appear to be functioning properly, the fault is not with the booster water heater itself but with factors outside the heater. Before proceeding with the troubleshooting charts, perform the following steps first.

1. Check the temperature of the water feeding into the booster tank. It must be 110° to 140°F (43° to 60°C) depending on the heating capability of the unit. The inlet water supply must be in sufficient quantity to hold its temperature throughout the dishwashing operation.
2. Water pressure at the inlet to the booster water heater must be maintained between 15–25 psi (103–172 kPa) for proper operation of the rinse cycle of the dish machine. If incoming water pressure is out of this range, a pressure regulating valve must be installed.
3. If the wash tank of the dish machine is filled through the booster water heater, this will use up all of the 180°F (82°C) water in storage. Sufficient time must be allowed to reheat the water in storage before starting the dish machine.
4. Booster water heater voltage must be correct for the voltage available. Check the specification label on the booster water heater for full information.
5. The breakers or fuses MUST be sized properly.
6. Primary water heater temperature should not exceed 160°F (71°C).

Symptom	Probable Cause	Corrective Action
Water at dish machine is not at the proper temperature.	Gauge(s) not working properly.	Check temperature of water with a thermometer to be certain gauges are working correctly. If not, replace gauge(s).
	Thermostat set too low.	Adjust or recalibrate thermostat. If thermostat will not recalibrate properly, replace it.
Water reaches 180°F (82°C) but does not last through the entire dish machine operation.	Low incoming water temperature.	Incoming water temperature must be adequate for booster size. Increase incoming water temperature.
	Incoming water temperature drops.	Primary water supply is not adequate to provide correct temperature in sufficient quantities. Increase supply of primary hot water.
	Flow pressure is too high.	Higher pressure uses an excessive quantity of hot water. Adjust flow pressure to 15–25 psi (103–172 kPa).
	Incorrect voltage.	Check voltage on booster water heater serial plate and make sure supplied voltage matches. A 240 V unit operating on 208 V reduces wattage to 75% of the normal output.

## TROUBLESHOOTING GUIDE

Symptom	Probable Cause	Corrective Action
The booster water heater does not heat at all or only delivers water at 120°–150°F (49°–66°C).	Unit may have been energized without water (dry fired).	This will cause the elements to burn out quickly. Replace the element(s).
	Fuses may be blown or circuit breaker tripped.	Check for proper fuse sizing. Replace fuses. Check/reset circuit breaker.
	Over-current fuses may be blown.	Contact Authorized Service Agent or Hatco for assistance.
	Temperature setting out of calibration or inoperable.	Temperature setting should be maximum of 190°F (88°C).
	Contactors do not pull in.	Contact Authorized Service Agent or Hatco for assistance.
	High limit switch may be tripped or defective.	Reset switch. If switch continues to trip or cannot be reset contact an Authorized Service Agent.
	Low water cutoff inoperable, contacts do not close.	Contact Authorized Service Agent or Hatco for assistance.
Heating elements burn out.	Tank inadvertently drained leaving elements in a dry condition.	Make sure tank is full of water at all times. Contact Authorized Service Agent or Hatco for assistance.
	Lime buildup in tank causing elements to split and burn out.	Clean or delime tanks periodically. A water softener or blended phosphate treatment system may be required.
High temperature limit trips.	Temperature limit set too low.	If booster water heater is not overheating, Contact Authorized Service Agent or Hatco for assistance.
	Thermostat set too high.	Adjust or recalibrate to proper temperature.
	Incoming water temperature too high causing nuisance tripping of high temperature limit switch.	Incoming water temperature should not be higher than 160°F (71°C).
Chattering contactor or low water cutoff circuit board.	Loose connections or wire connection has insulation under crimp.	Contact Authorized Service Agent or Hatco for assistance.
	Low voltage.	Contact Authorized Service Agent or Hatco for assistance.
	Low water cutoff probe may be fouled.	Contact Authorized Service Agent or Hatco for assistance.
	Contactor(s) may be defective.	Contact Authorized Service Agent or Hatco for assistance.



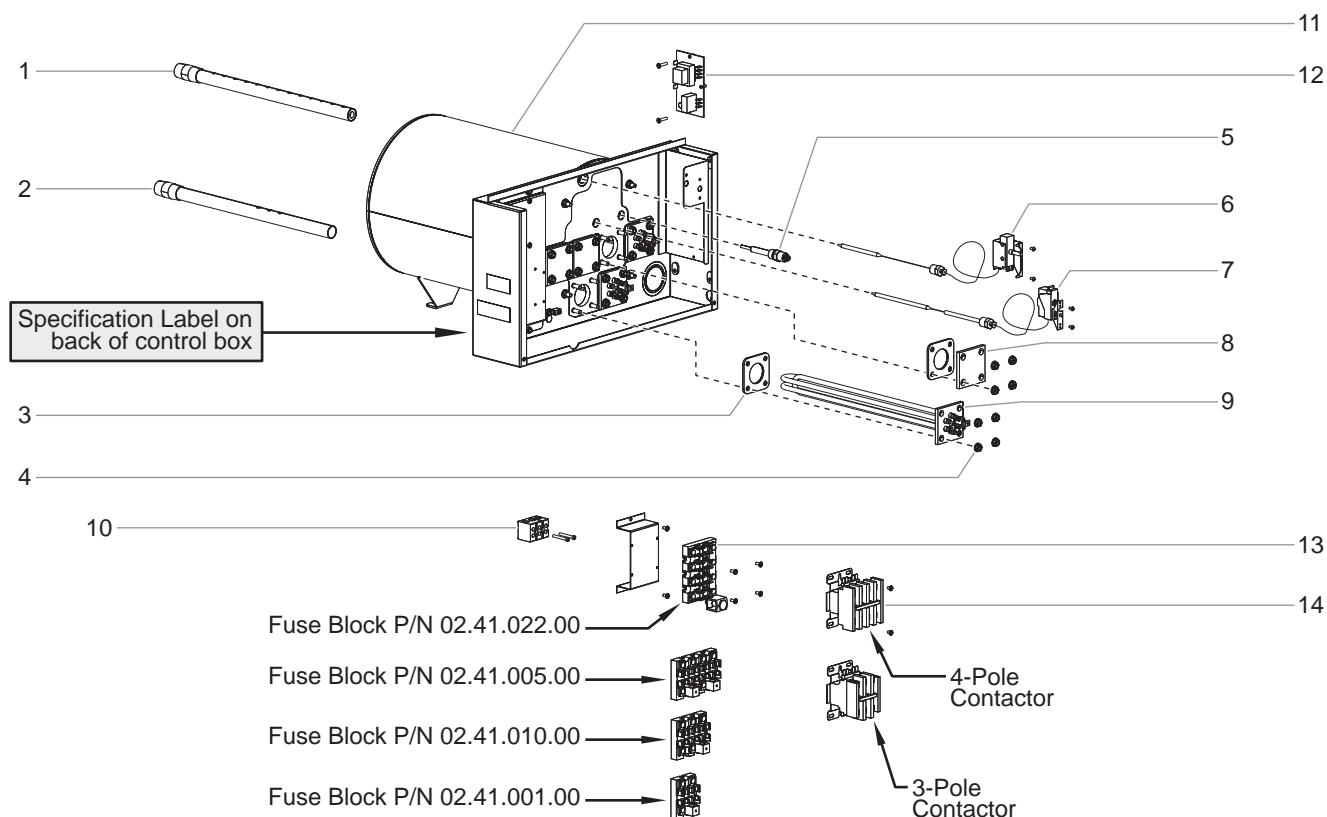
# REPLACEMENT PARTS LIST

## Atmospheric Booster Water Heater

ABB-X-8 and ABB-X-11 Series

### CAUTION

Use of replacement parts other than those supplied by Hatco Corporation may result in damage to the unit or injury to personnel and will void all warranties.



24 Hour 7 Day Parts and Service Assistance available in the United States and Canada by calling (800) 558-0607.

## Parts Common To All ABB Models

Item	Description	Part No.	Qty.	Item	Description	Part No.	Qty.
1	Outlet Pipe	03.30.009.00	1	5	Probe, Low Water Cutoff	02.40.001.00	1
2	Inlet Pipe	03.30.017.00	1	6	High Limit Safety Control	02.16.025A.00	1
3	Gasket, Heating Element	05.06.108.00	3-6*	7	Thermostat Control	02.16.003B.00	1
4	Nut, Heating Element	05.04.512.00	12-24*				

\* Quantity determined by the number of heating elements installed in a specific model.

NOTE: The last four digits in a ten digit numerical serial number are the manufacturing date code.

Example: Serial number 9625060951 has a date code of "0951" which indicates the following: 0951

Week Fifty-One  
Year 2009



## Parts Specific To Model ABB-9-8 and ABB-9-11

Item	Description	208V Single Phase	208V Three Phase	240V Single Phase	240V Three Phase	380V Three Phase	480V Three Phase
8	Blank Flange Kit (Qty. 3) ABB-9-8	---	---	---	---	---	---
9	Heating Element, 3000 W (Qty. 3)	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00
10	Terminal Block	R02.04.302.00	R02.04.302.00	R02.04.303.00	R02.04.303.00	---	R02.04.305.00
11	Tank Assembly ABB-9-8	R02.15.046.00	R02.15.046.00	R02.15.046.00	R02.15.046.00	R02.15.046.00	R02.15.046.00
12	Low Water Cutoff Control Board	01.05.026.00	01.05.026.00	01.05.026.00	01.05.026.00	01.05.026.00	01.05.026.00
13	24 V Control Circuit	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00
14	120 V Control Circuit	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00
15	Fuse Block	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00
16	Contact	---	---	---	---	---	---
17	24 V Control Circuit (Qty. 1)	02.01.262.00	02.01.167.00	02.01.262.00	02.01.167.00	02.01.167.00	02.01.167.00
18	120 V Control Circuit (Qty. 1)	02.01.017.00	02.01.015.00	02.01.017.00	02.01.015.00	02.01.015.00	02.01.015.00
19	Front Enclosure	04.01.339.00	04.01.339.00	04.01.339.00	04.01.339.00	04.01.339.00	04.01.339.00
20	ABB-9-8	---	---	---	---	---	---
21	ABB-9-11	---	---	---	---	---	---
22	Fuse, 35 A, 2-pack (not shown)	---	---	---	---	---	---
23	Fuse, 40 A, 2-pack (not shown)	---	---	---	---	---	---
24	Fuse, 50 A, 2-pack (not shown)	---	---	---	---	---	---
25	Fuse, 60 A, 2-pack (not shown)	---	---	---	---	---	---
26	Electrical Drawing	10-01-802	10-01-803	10-01-802	10-01-803	10-01-803	10-01-803

The shaded areas contain information for **International models only**.

NOTE: Heating elements (Item 9) may come with gaskets in the same package. These gaskets cannot be used with ABB series booster water heaters and should be discarded. Gaskets must be ordered separately (see Item 3 in the "Parts Common To All ABB Models" parts list).

# REPLACEMENT PARTS LIST

## Parts Specific To Model ABB-12-8 and ABB-12-11

Item	Description	208V Single Phase	208V Three Phase	240V Single Phase	240V Three Phase	380V Three Phase	480V Three Phase
8	Blank Flange Kit (Qty. 3) ABB-12-8 ABB-12-11	---	---	---	---	---	---
9	Heating Element, 4000 W (Qty. 3)	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00
10	Terminal Block	R02.04.400.00	R02.04.400.00	R02.04.401.00	R02.04.401.00	---	R02.04.404.00
11	Tank Assembly ABB-12-8 ABB-12-11	---	R02.15.046.00	---	R02.15.046.00	R02.15.046.00	R02.15.046.00
12	Low Water Cutoff Control Board 24 V Control Circuit 120 V Control Circuit	01.05.026.00 01.05.027.00	01.05.026.00 01.05.027.00	01.05.026.00 01.05.027.00	01.05.026.00 01.05.027.00	01.05.026.00 01.05.027.00	01.05.026.00 01.05.027.00
13	Fuse Block	R02.01.212.00 R02.01.210.00 02.41.005.00	R02.01.212.00 R02.01.210.00	R02.01.212.00 R02.01.210.00 02.41.005.00	R02.01.212.00 R02.01.210.00	R02.01.212.00 R02.01.210.00	R02.01.212.00 R02.01.210.00
14	Contactors 24 V Control Circuit (Qty. 1) 120 V Control Circuit (Qty. 1)	02.01.262.00 02.01.017.00	02.01.167.00 02.01.015.00	02.01.262.00 02.01.017.00	02.01.167.00 02.01.015.00	02.01.167.00 02.01.015.00	02.01.167.00 02.01.015.00
15	Front Enclosure ABB-12-8 ABB-12-11	04.01.339.00	04.01.339.00	04.01.339.00	04.01.339.00	04.01.339.00	04.01.339.00
16	Fuse, 35 A, 2-pack (not shown)	---	---	---	---	---	---
17	Fuse, 40 A, 2-pack (not shown)	R02.03.030.02	---	R02.03.030.02	---	---	---
18	Fuse, 50 A, 2-pack (not shown)	---	---	---	---	---	---
19	Fuse, 60 A, 2-pack (not shown)	R02.03.032.02	---	R02.03.032.02	---	---	---
	Electrical Drawing	10-01-804	10-01-803	10-01-804	10-01-803	10-01-803	10-01-803

The shaded areas contain information for **International models only**.

**NOTE:** Heating elements (Item 9) may come with gaskets in the same package. These gaskets cannot be used with ABB series booster water heaters and should be discarded. Gaskets must be ordered separately (see Item 3 in the "Parts Common To All ABB Models" parts list).

## Parts Specific To Model ABB-13-8 and ABB-13-11

Item	Description	208V Single Phase	208V Three Phase	240V Single Phase	240V Three Phase	380V Three Phase	480V Three Phase
8	Blank Flange Kit (Qty. 3) ABB-13-8	---	---	---	---	---	---
9	ABB-13-11	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00
10	Heating Element, 4500 W (Qty. 3)	R02.04.450.00	R02.04.450.00	R02.04.451.00	R02.04.451.00	---	R02.04.453.00
11	Terminal Block	---	R02.15.046.00	---	R02.15.046.00	R02.15.046.00	R02.15.046.00
12	Tank Assembly ABB-13-8	01.05.026.00	01.05.026.00	01.05.026.00	01.05.026.00	01.05.026.00	01.05.026.00
13	ABB-13-11	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00
14	Low Water Cutoff Control Board	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00
15	24 V Control Circuit	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00
16	120 V Control Circuit	02.41.005.00	---	02.41.005.00	---	---	---
17	Fuse Block	---	---	---	---	---	---
18	Contact	02.01.262.00	02.01.167.00	02.01.262.00	02.01.167.00	02.01.167.00	02.01.167.00
19	120 V Control Circuit (Qty. 1)	02.01.017.00	02.01.015.00	02.01.017.00	02.01.015.00	02.01.015.00	02.01.015.00
20	Front Enclosure	04.01.339.00	04.01.339.00	04.01.339.00	04.01.339.00	04.01.339.00	04.01.339.00
21	ABB-13-8	---	---	---	---	---	---
22	ABB-13-11	R02.03.030.02	---	R02.03.030.02	---	---	---
23	Fuse, 35 A, 2-pack (not shown)	---	---	---	---	---	---
24	Fuse, 40 A, 2-pack (not shown)	---	---	---	---	---	---
25	Fuse, 50 A, 2-pack (not shown)	---	---	---	---	---	---
26	Fuse, 60 A, 2-pack (not shown)	R02.03.033.02	---	---	---	---	---
27	Electrical Drawing	10-01-804	10-01-803	10-01-804	10-01-803	10-01-803	10-01-803

The shaded areas contain information for **International models only**.

NOTE: Heating elements (Item 9) may come with gaskets in the same package. These gaskets cannot be used with ABB series booster water heaters and should be discarded. Gaskets must be ordered separately (see Item 3 in the "Parts Common To All ABB Models" parts list).

# REPLACEMENT PARTS LIST

## Parts Specific To Model ABB-15-8 and ABB-15-11

Item	Description	208V Single Phase	208V Three Phase	240V Single Phase	240V Three Phase	380V Three Phase	480V Three Phase
8	Blank Flange Kit (Qty. 3) ABB-15-8	---	---	---	---	---	---
9	ABB-15-11	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00
10	Heating Element, 5000 W (Qty. 3)	R02.04.500.00	R02.04.500.00	R02.04.501.00	R02.04.501.00	---	R02.04.502.00
11	Terminal Block	---	R02.15.046.00	---	R02.15.046.00	R02.15.046.00	R02.15.046.00
12	Tank Assembly ABB-15-8	01.05.026.00	01.05.026.00	01.05.026.00	01.05.026.00	01.05.026.00	01.05.026.00
13	ABB-15-11	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00
14	Low Water Cutoff Control Board 24 V Control Circuit	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00
15	120 V Control Circuit	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00
16	Fuse Block	02.41.005.00	---	02.41.005.00	---	---	---
17	Contactor	02.01.262.00	02.01.167.00	02.01.262.00	02.01.167.00	02.01.167.00	02.01.167.00
18	120 V Control Circuit (Qty. 1)	02.01.017.00	02.01.015.00	02.01.017.00	02.01.015.00	02.01.015.00	02.01.015.00
19	Front Enclosure ABB-15-8	04.01.339.00	04.01.339.00	04.01.339.00	04.01.339.00	04.01.339.00	04.01.339.00
20	ABB-15-11	---	---	---	---	---	---
21	Fuse, 35 A, 2-pack (not shown)	R02.03.030.02	---	R02.03.030.02	---	---	---
22	Fuse, 40 A, 2-pack (not shown)	---	---	---	---	---	---
23	Fuse, 50 A, 2-pack (not shown)	---	---	---	---	---	---
24	Fuse, 60 A, 2-pack (not shown)	R02.03.033.02	---	R02.03.033.02	---	---	---
25	Electrical Drawing	10-01-804	10-01-803	10-01-804	10-01-803	10-01-803	10-01-803

The shaded areas contain information for **International models only**.

**NOTE:** Heating elements (Item 9) may come with gaskets in the same package. These gaskets cannot be used with ABB series booster water heaters and should be discarded. Gaskets must be ordered separately (see Item 3 in the "Parts Common To All ABB Models" parts list).



## Parts Specific To Model ABB-17-8 and ABB-17-11

Item	Description	208V Single Phase	208V Three Phase	240V Single Phase	240V Three Phase	380V Three Phase	480V Three Phase
8	Blank Flange Kit (Qty. 3) ABB-17-8 ABB-17-11	---	---	---	---	---	---
9	Heating Element, 5750 W (Qty. 3)	---	R00.02.0046.00	---	---	---	---
10	Terminal Block	---	R02.04.600.00	---	---	---	---
11	Tank Assembly ABB-17-8 ABB-17-11	---	R02.15.046.00	---	---	---	---
12	Low Water Cutoff Control Board 24 V Control Circuit 120 V Control Circuit	---	01.05.026.00 01.05.027.00	---	---	---	---
13	Fuse Block	---	R02.01.212.00 R02.01.210.00	---	---	---	---
14	Contactor 24 V Control Circuit (Qty. 1) 120 V Control Circuit (Qty. 1)	---	---	---	---	---	---
15	Front Enclosure ABB-17-8 ABB-17-11	---	02.01.167.00 02.01.015.00	---	---	---	---
16	Fuse, 35 A, 2-pack (not shown)	---	04.01.339.00	---	---	---	---
17	Fuse, 40 A, 2-pack (not shown)	---	---	---	---	---	---
18	Fuse, 50 A, 2-pack (not shown)	---	---	---	---	---	---
19	Fuse, 60 A, 2-pack (not shown)	---	---	---	---	---	---
	Electrical Drawing	---	10-01-803	---	---	---	---

The shaded areas contain information for **International models only**.

**NOTE:** Heating elements (Item 9) may come with gaskets in the same package. These gaskets cannot be used with ABB series booster water heaters and should be discarded. Gaskets must be ordered separately (see Item 3 in the "Parts Common To All ABB Models" parts list).

# REPLACEMENT PARTS LIST

## Parts Specific To Model ABB-18-8 and ABB-18-11

Item	Description	208V Single Phase	208V Three Phase	240V Single Phase	240V Three Phase	380V Three Phase	480V Three Phase
8	Blank Flange Kit (Qty. 3) ABB-18-8 ABB-18-11	---	---	---	---	---	---
9	Heating Element, 6000 W (Qty. 3)	R00.02.0046.00	---	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00	R00.02.0046.00
10	Terminal Block	R02.04.600A.00	---	R02.04.603.00	R02.04.603.00	---	R02.04.613.00
11	Tank Assembly ABB-18-8 ABB-18-11	---	---	---	R02.15.046.00	R02.15.046.00	R02.15.046.00
12	Low Water Cutoff Control Board 24 V Control Circuit 120 V Control Circuit	01.05.026.00 01.05.027.00	---	01.05.026.00 01.05.027.00	01.05.026.00 01.05.027.00	01.05.026.00 01.05.027.00	01.05.026.00 01.05.027.00
13	Fuse Block (Qty. 2)	R02.01.212.00	---	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00
14	Contactors 24 V Control Circuit (Qty. 1) 120 V Control Circuit (Qty. 1)	R02.01.210.00 02.41.010.00	---	R02.01.210.00 02.41.010.00	R02.01.210.00	R02.01.210.00	R02.01.210.00
15	Front Enclosure ABB-18-8 ABB-18-11	02.01.167.00† 02.01.015.00†	---	02.01.167.00† 02.01.015.00†	02.01.167.00 02.01.015.00	02.01.167.00 02.01.015.00	02.01.167.00 02.01.015.00
16	Fuse, 35 A, 2-pack (not shown)	04.01.339.00	---	04.01.339.00	04.01.339.00	04.01.339.00	04.01.339.00
17	Fuse, 40 A, 2-pack (Qty. 3, not shown)	---	---	---	---	---	---
18	Fuse, 50 A, 2-pack (not shown)	R02.03.031.02	---	R02.03.031.02	---	---	---
19	Fuse, 60 A, 2-pack (not shown)	---	---	---	---	---	---
	Electrical Drawing	10-01-805	---	10-01-805	10-01-803	10-01-803	10-01-803

The shaded areas contain information for **International models only**.

**NOTE:** Heating elements (Item 9) may come with gaskets in the same package. These gaskets cannot be used with ABB series booster water heaters and should be discarded. Gaskets must be ordered separately (see Item 3 in the "Parts Common To All ABB Models" parts list).

† This unit requires two (2) contactors.

## Parts Specific To Model ABB-24-11

Item	Description	208V		240V		380V		480V	
		Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase
8	Blank Flange Kit	---	---	---	---	---	---	---	---
9	Heating Element, 4000 W (Qty. 6)	R02.04.400.00	R02.04.400.00	R02.04.401.00	R02.04.401.00	---	---	R02.04.404.00	---
10	Terminal Block	---	---	---	---	R02.15.046.00	---	R02.15.046.00	---
11	Tank Assembly	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00	---	01.05.027.00	---
12	Low Water Cutoff Control Board	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	---	R02.01.212.00	---
	24 V Control Circuit	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	---	R02.01.210.00	---
	120 V Control Circuit	02.41.010.00	02.41.010.00	02.41.010.00	02.41.010.00	---	---	---	---
13	Fuse Block (Qty. 2)■	02.41.001.00	02.41.001.00	02.41.001.00	02.41.001.00	---	---	---	---
		02.41.005.00	02.41.005.00	02.41.005.00	02.41.005.00	---	---	---	---
14	Contactor	02.01.167.00	02.01.167.00	02.01.167.00	02.01.167.00	02.01.167.00	---	02.01.167.00	---
	24 V Control Circuit (Qty. 2)	02.01.015.00	02.01.015.00	02.01.015.00	02.01.015.00	02.01.015.00	---	02.01.015.00	---
	120 V Control Circuit (Qty. 2)	---	---	---	---	---	---	---	---
15	Front Enclosure	---	---	---	---	---	---	---	---
16	Fuse, 35 A, 2-pack (not shown)	---	---	---	---	---	---	---	---
17	Fuse, 40 A, 2-pack (Qty. 3, not shown)	---	---	---	---	---	---	---	---
18	Fuse, 50 A, 2-pack (Qty. 3, not shown)	R02.03.032.02	R02.03.032.02	R02.03.032.02	R02.03.031.02	---	---	---	---
19	Fuse, 60 A, 2-pack (not shown)	---	---	---	---	---	---	---	---
	Electrical Drawing	10-01-807	10-01-806	10-01-807	10-01-806	10-01-808	10-01-808	10-01-808	10-01-808

The shaded areas contain information for **International models only**.

NOTE: Heating elements (Item 9) may come with gaskets in the same package. These gaskets cannot be used with ABB series booster water heaters and should be discarded. Gaskets must be ordered separately (see Item 3 in the "Parts Common To All ABB Models" parts list).

■ Units that show two fuse block part numbers in a dashed rectangle have one of each part number.

# REPLACEMENT PARTS LIST

## Parts Specific To Model ABB-27-11

Item	Description	208V		208V		240V		240V		380V		480V	
		Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase
8	Blank Flange Kit	---	---	---	---	---	---	---	---	---	---	---	---
9	Heating Element, 4500 W (Qty. 6)	R02.04.450.00	R02.04.450.00	R02.04.451.00	R02.04.451.00	R02.04.451.00	R02.04.451.00	R02.04.451.00	R02.04.451.00	---	---	R02.04.453.00	---
10	Terminal Block	---	---	---	---	---	---	---	---	R02.15.046.00	R02.15.046.00	R02.15.046.00	---
11	Tank Assembly	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00	---
12	Low Water Cutoff Control Board	---	---	---	---	---	---	---	---	---	---	---	---
13	24 V Control Circuit	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00
	120 V Control Circuit	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00
	Fuse Block (Qty. 2)■	02.41.010.00	02.41.001.00	02.41.010.00	02.41.001.00	02.41.010.00	02.41.001.00	02.41.010.00	02.41.001.00	---	---	---	---
14	24 V Control Circuit (Qty. 2)	02.01.167.00	02.01.167.00	02.01.167.00	02.01.167.00	02.01.167.00	02.01.167.00	02.01.167.00	02.01.167.00	02.01.167.00	02.01.167.00	02.01.167.00	02.01.167.00
	120 V Control Circuit (Qty. 2)	02.01.015.00	02.01.015.00	02.01.015.00	02.01.015.00	02.01.015.00	02.01.015.00	02.01.015.00	02.01.015.00	02.01.015.00	02.01.015.00	02.01.015.00	02.01.015.00
	Front Enclosure	---	---	---	---	---	---	---	---	---	---	---	---
15	Fuse, 35 A, 2-pack (not shown)	---	---	---	---	---	---	---	---	---	---	---	---
16	Fuse, 40 A, 2-pack (not shown)	---	---	---	---	---	---	---	---	---	---	---	---
17	Fuse, 50 A, 2-pack (Qty. 3, not shown)	---	---	---	---	---	---	---	---	---	---	---	---
18	Fuse, 60 A, 2-pack (Qty. 3, not shown)	---	---	---	---	---	---	---	---	---	---	---	---
19	Electrical Drawing	R02.03.033.02	10-01-807	10-01-807	10-01-806	10-01-807	10-01-806	10-01-807	10-01-806	10-01-808	10-01-808	10-01-808	10-01-808

■ The shaded areas contain information for **International models only**.  
 NOTE: Heating elements (Item 9) may come with gaskets in the same package. These gaskets cannot be used with ABB series booster water heaters and should be discarded. Gaskets must be ordered separately (see Item 3 in the "Parts Common To All ABB Models" parts list).



## Parts Specific To Model ABB-30-11

Item	Description	208V		240V		380V		480V	
		Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase
8	Blank Flange Kit	---	---	---	---	---	---	---	---
9	Heating Element, 5000 W (Qty. 6)	R02.04.500.00	R02.04.500.00	R02.04.501.00	R02.04.501.00	R02.15.046.00	R02.15.046.00	R02.04.502.00	R02.15.046.00
10	Terminal Block	---	---	---	---	01.05.027.00	01.05.027.00	---	---
11	Tank Assembly	01.05.027.00	01.05.027.00	01.05.027.00	01.05.027.00	---	---	---	---
12	Low Water Cutoff Control Board	---	---	---	---	---	---	---	---
	24 V Control Circuit	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00	R02.01.212.00
	120 V Control Circuit	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00	R02.01.210.00
13	Fuse Block (Qty. 2)■	02.41.022.00	02.41.001.00 02.41.005.00	02.41.010.00	02.41.001.00 02.41.005.00	---	---	---	---
14	Contactor	---	---	---	---	---	---	---	---
	24 V Control Circuit (Qty. 2)	02.01.167.00	02.01.167.00	02.01.167.00	02.01.167.00	02.01.167.00	02.01.167.00	02.01.167.00	02.01.167.00
	120 V Control Circuit (Qty. 2)	02.01.015.00	02.01.015.00	02.01.015.00	02.01.015.00	02.01.015.00	02.01.015.00	02.01.015.00	02.01.015.00
15	Front Enclosure	---	---	---	---	---	---	---	---
16	Fuse, 35 A, 2-pack (not shown)	---	---	---	---	---	---	---	---
17	Fuse, 40 A, 2-pack (not shown)	---	---	---	---	---	---	---	---
18	Fuse, 50 A, 2-pack (Qty. 3, not shown)	---	---	---	---	---	---	---	---
19	Fuse, 60 A, 2-pack (Qty. 3, not shown)	---	---	---	---	---	---	---	---
	Electrical Drawing	R02.03.033.02	R02.03.033.02	R02.03.033.02	R02.03.032.02	---	---	---	---
		10-01-807	10-01-806	10-01-807	10-01-806	10-01-808	10-01-808	10-01-808	10-01-808

■ The shaded areas contain information for **International models only**.

NOTE: Heating elements (Item 9) may come with gaskets in the same package. These gaskets cannot be used with ABB series booster water heaters and should be discarded. Gaskets must be ordered separately (see Item 3 in the "Parts Common To All ABB Models" parts list).

■ Units that show two fuse block part numbers in a dashed rectangle have one of each part number.



# REPLACEMENT PARTS LIST

## Parts Specific To Model ABB-36-11

Item	Description	208V		240V		380V		480V	
		Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase
8	Blank Flange Kit	---	---	---	---	---	---	---	---
9	Heating Element, 6000 W (Qty. 6)	---	---	---	R02.04.603.00	---	---	R02.04.613.00	---
10	Terminal Block	---	---	---	---	---	---	R02.15.046.00	---
11	Tank Assembly	---	---	---	01.05.027.00	---	---	01.05.027.00	---
12	Low Water Cutoff Control Board	---	---	---	R02.01.212.00	---	---	R02.01.212.00	---
	24 V Control Circuit	---	---	---	R02.01.210.00	---	---	R02.01.210.00	---
	120 V Control Circuit	---	---	---	02.41.001.00	---	---	---	---
13	Fuse Block (Qty. 2)■	---	---	---	02.41.005.00	---	---	---	---
14	Contactor	---	---	---	02.01.167.00	---	---	02.01.167.00	---
	24 V Control Circuit (Qty. 2)	---	---	---	02.01.015.00	---	---	02.01.015.00	---
	120 V Control Circuit (Qty. 2)	---	---	---	---	---	---	---	---
15	Front Enclosure	---	---	---	---	---	---	---	---
16	Fuse, 35 A, 2-pack (not shown)	---	---	---	---	---	---	---	---
17	Fuse, 40 A, 2-pack (not shown)	---	---	---	---	---	---	---	---
18	Fuse, 50 A, 2-pack (not shown)	---	---	---	---	---	---	---	---
19	Fuse, 60 A, 2-pack (Qty. 3, not shown)	---	---	---	R02.03.033.02	---	---	---	---
	Electrical Drawing	---	---	---	10-01-806	---	---	---	10-01-808

NOTE: Heating elements (Item 9) may come with gaskets in the same package. These gaskets cannot be used with ABB series booster water heaters and should be discarded. Gaskets must be ordered separately (see Item 3 in the "Parts Common To All ABB Models" parts list).

The shaded areas contain information for **International models only**.

■ Units that show two fuse block part numbers in a dashed rectangle have one of each part number.

## Parts Specific To Model ABB-39-11

**NOTE:** Heating elements (Item 9) may come with gaskets in the same package. These gaskets cannot be used with ABB series booster water heaters and should be discarded. Gaskets must be ordered separately (see Item 3 in the "Parts Common To All ABB Models" parts list).

The shaded areas contain information for **International models only.**

■ Units that show two fuse block numbers in a dashed rectangle have one of each part number.



[illegible]

## 1. PRODUCT WARRANTY

Hatco warrants the products that it manufactures (the "Products") to be free from defects in materials and workmanship, under normal use and service, for a period of one (1) year from the date of purchase when installed and maintained in accordance with Hatco's written instructions or 18 months from the date of shipment from Hatco. Buyer must establish the Product's purchase date by returning Hatco's Warranty Registration Card or by other means satisfactory to Hatco in its sole discretion.

Hatco warrants the following Product components to be free from defects in materials and workmanship from the date of purchase (subject to the foregoing conditions) for the period(s) of time and on the conditions listed below:

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- c) **One (1) Year Parts and Labor PLUS Nine (9) Years Parts-Only Warranty on:**  
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## 2. LIMITATION OF REMEDIES AND DAMAGES

Hatco's liability and Buyer's exclusive remedy hereunder will be limited solely, at Hatco's option, to repair or replacement using new or refurbished parts or Product by Hatco or a Hatco-authorized service agency (other than where Buyer is located outside of the United States, Canada, United Kingdom, or Australia, in which case Hatco's liability and Buyer's exclusive remedy hereunder will be limited solely to replacement of part under warranty) with respect to any claim made within the applicable warranty period referred to above. Hatco reserves the right to accept or reject any such claim in whole or in part. In the context of this Limited Warranty, "refurbished" means a part or Product that has been returned to its original specifications by Hatco or a Hatco-authorized service agency. Hatco will not accept the return of any Product without prior written approval from Hatco, and all such approved returns shall be made at Buyer's sole expense. HATCO WILL NOT BE LIABLE, UNDER ANY CIRCUMSTANCES, FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, INCLUDING BUT NOT LIMITED TO LABOR COSTS OR LOST PROFITS RESULTING FROM THE USE OF OR INABILITY TO USE THE PRODUCTS OR FROM THE PRODUCTS BEING INCORPORATED IN OR BECOMING A COMPONENT OF ANY OTHER PRODUCT OR GOODS.

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