

Model	W4100	W4200	W4300
Connections	NPT	NPT	NPT
Tank Material	Carbon Steel	Cast Iron	Stainless Steel
Max Disch. Press.	50 PSIG	50 PSIG	50 PSIG
TMO/TMA	190°F	190°F	190°F
Options	Mechanical & electrical alternators; gauge glass; thermometer; discharge pressure gauges; isolation valves; magnetic starters; 1750 RPM motors; control panels; oversized or stainless steel receivers; high temperature components		



## Typical Applications

Used for general condensate return or for boiler feed applications. Available in Simplex or Duplex configurations with several different receiver sizes available.

## How It Works

### For Condensate Return Applications:

The float, which is connected to the switch assembly, rises when condensate enters the receiver tank. When the float rises above its set point, it energizes the motor on the pump. Once started, the pump will continue to run until the water level drops below the bottom position of the float switch. There it will de-energize the motor to shut off the pump. This cycle repeats as condensate begins to fill the receiver tank. On duplex systems the float switch is replaced with a Mechanical Alternator-Switch connected to a float. The Mechanical Alternator cycles use between the two pumps, allowing only one pump to run at a time under normal conditions. If the condensate reaches a high water level, both pumps will be activated.

### For Boiler Feed Applications:

For Boiler Feed units, the operation of the pump is controlled by the water level control device which is part of the boiler control package. When the boiler requires water, the pump switches on pumping water from the receiver into the boiler. On Duplex boiler feed units, an Electrical Alternator is used to activate one pump at a time in alternating fashion. The receiver tank also contains an internal make-up water valve actuated by a stainless steel float. This is used if the amount of condensate being returned to the receiver tank is inadequate.

## Sample Specifications

Pump(s) shall be of the centrifugal type with 2-piece closed bronze impeller, cast iron housing and stainless steel motor shaft. A flat perforated brass strainer shall be provided in the inlet of the pump.

## Installation

Place on an elevated, level and substantial foundation in a clean, dry and accessible area. Locate receiver tank inlet below lowest point of the condensate return lines.

## Features

- Fabricated steel receivers (W4100), Cast Iron (W4200), Stainless Steel (W4300)
- Simplex and duplex packages
- Bronze-fitted centrifugal pumps
- Energy-efficient 3450 RPM motors
- Automatic venting of mechanical seal
- Ceramic pump seal with carbon face
- Heavy-duty float switch
- All steel and iron receivers over 24 gallons include a threaded NPT overflow port

## Options

- Mechanical and Electrical Alternators
- Gauge Glass
- Thermometers
- Discharge Pressure Gauges
- Isolation valves
- Magnetic Starters with HOA Selector Switch
- 1750 RPM Motors
- Larger pumping capacities & higher discharge pressures
- Wide variety of control panels
- Oversized Receivers (45, 60 & 95 gallons)
- Stainless Steel Receivers
- High Temperature (250°F) Components

## Electric Condensate Pumps

### How to Order an Electric Condensate Return or Boiler Feed Pump

ELECTRIC PUMPS

#### Ordering Guidelines:

- 1) Decide on appropriate Receiver tank material for the application; W4100-Series with Steel Receiver tanks, W4200-Series with Cast Iron Receiver tanks or W4300 with Stainless Steel Receiver tanks.
- 2) Based on the particular application the **model selection charts** are separated on adjoining pages into either Boiler Feed or Condensate Return units. The proper pump model/size in GPM (gallons per minute) to suit the application and recommended receiver size for a Boiler Feed application is based on boiler size measured in Boiler Horsepower. The proper pump model size in GPM and recommended receiver size for a Condensate Return application is based on the Effective Direct Radiation (EDR) in square feet of the heating surfaces throughout the facility that the pump is expected to handle.
- 3) Select a pump discharge pressure that will exceed system back pressure, friction loss in piping and pressure in the boiler (in the case of a boiler feed pump). Selecting a pump with a significantly higher discharge pressure than required can cause pump to cavitate.
- 4) Decide if a Simplex (Single pump) unit is adequate or a Duplex (two pump) unit would be more appropriate in terms of system reliability and redundancy in the event of a pump failure.
- 5) Select Motor Phase and Voltage (reference chart). For smaller units under 1<sup>1/2</sup> hp Single phase motors may be desirable because of ease of installation. For units in excess of 1<sup>1/2</sup> hp, the more efficient and robust 3-phase motors are recommended.

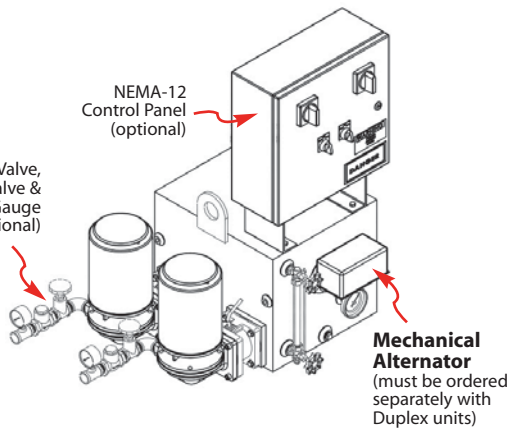
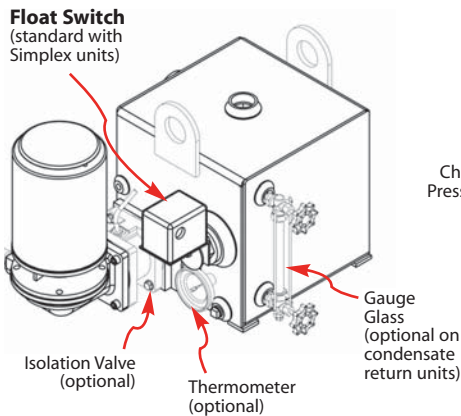
Example Model Code: **W4142JD-3P230**  
(Pump Unit)

Duplex Condensate Return Pump, 3 GPM flow rate & 40 PSI discharge pressure & 15 gallon receiver, 1hp, 230 VAC, 60Hz, 3-Phase motor.

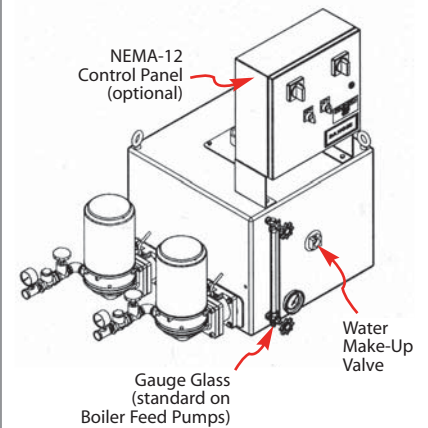
Example Model Code: **MECH-ALT-N1**  
(Mechanical Alternator)

Note: Since a Duplex pump was chosen, a Mechanical Alternator must be purchased separately to replace the standard Float Switch.

#### Condensate Return



#### Boiler Feed



#### Phase & Voltage Codes for Standard 60/50 Hz Motors

Motor Phase & Voltage	60 Hz Motor Code	50 Hz Motor Code
Single Phase	115 VAC	<b>1P115</b>
	208 VAC	<b>1P208</b>
	230 VAC	<b>1P230</b>
Three Phase	208 VAC	<b>3P208</b>
	230 VAC	<b>3P230</b>
	460 VAC	<b>3P460</b>
	575 VAC	<b>3P575</b>

#### Codes for Specialty Motors (add as a Suffix)

Option	Suffix Code
Totally Enclosed Fan Cooled (1/2 to 3 hp)	<b>TEFC</b>
Explosion Proof – 1/2, 3/4, 1 hp	<b>EP1</b>
Explosion Proof – 1 <sup>1/2</sup> & 2 hp	<b>EP2</b>
Explosion Proof – 3 hp	<b>EP3</b>

## How to Order an Electric Condensate Return or Boiler Feed Pump



ELECTRIC PUMPS

### Mechanical Alternator For Duplex Condensate Return Pump Only

Replaces the standard float switch on Duplex Condensate Return Units. Must be ordered separately.



On Duplex units, the standard float switch is replaced with a Mechanical Alternator float switch to alternate operation between the two pumps. Must be ordered separately. An Electric Alternator is also an option.

For Duplex Pumps must choose either:

A Mechanical Alternator or 2-Level Float Switch with the Electric Alternator Option on NEMA-12 Control Panel

Mechanical Alternator & Float Switches	Model Code
<b>Mechanical Alternator - NEMA 1</b> (replaces Float Switch on Duplex pumps)	<b>MECH-ALT-N1</b>
<b>Mechanical Alternator - NEMA 4</b> (replaces Float Switch on Duplex)	<b>MECH-ALT-N4</b>
<b>Mechanical Alternator - Explosion Proof</b> (replaces Float Switch on Duplex)	<b>MECH-ALT-EP</b>
<b>2-Level Float Switch</b> – (required when using an Electrical Alternator - Reference NEMA-12 Control Panel)*	<b>FLOAT-SWITCH-2L</b>
(Option) High-Level Auxiliary Contacts for Mechanical Alternator	<b>CONTACTS-HLA</b>

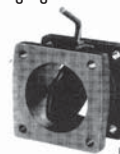
\* 2-level float switch not required with Duplex Boiler Feed Units

### Accessory Items

Condensate Return Pumps (ordered separately)	
For SIMPLEX and DUPLEX pumps	Model Code
Gauge Glass for Steel Tank	<b>GAUGE-GLASS-ST</b>
Gauge Glass for Cast Iron Tank	<b>GAUGE-GLASS-CI</b>
Isolation Valve	<b>ISO-VALVE</b>
Dial Thermometer	<b>DIAL-THERM</b>
Discharge Pressure Gauge	<b>PRESS-GAUGE-D</b>
Discharge Check Valve	<b>CHECK VALVE-D</b>
Float Switch - NEMA 4 (for Simplex Unit)	<b>FLOAT-SWITCH-N4</b>
Float Switch - Explosion Proof (for Simplex Unit)	<b>FLOAT-SWITCH-EP</b>

Boiler Feed Pumps (ordered separately)	
For SIMPLEX and DUPLEX pumps	Model Code
Isolation Valve	<b>ISO-VALVE</b>
Dial Thermometer	<b>DIAL-THERM</b>
Discharge Pressure Gauge	<b>PRESS-GAUGE-D</b>
Discharge Check Valve	<b>CHECK VALVE-D</b>

Gauge glass is standard on boiler feed pumps.



#### Isolation Valve

Allows pump and motor to be removed without draining condensate.

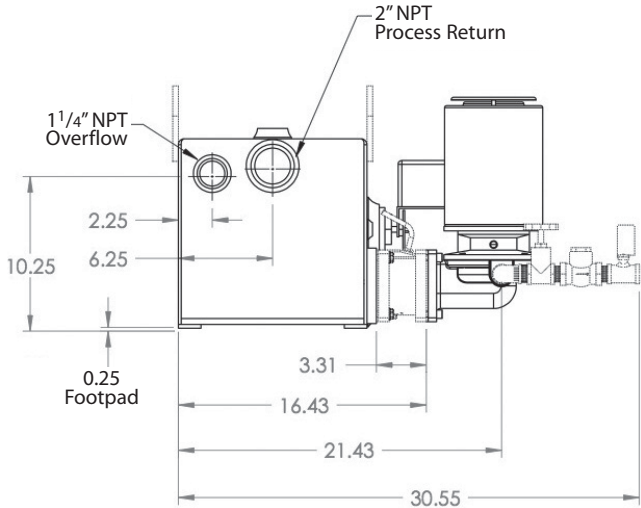
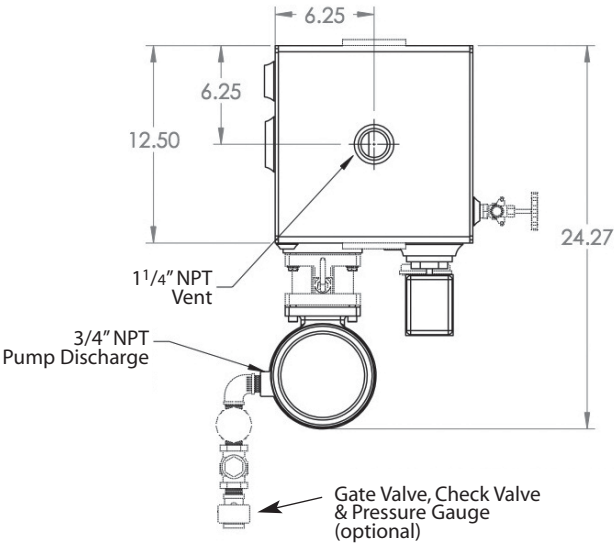
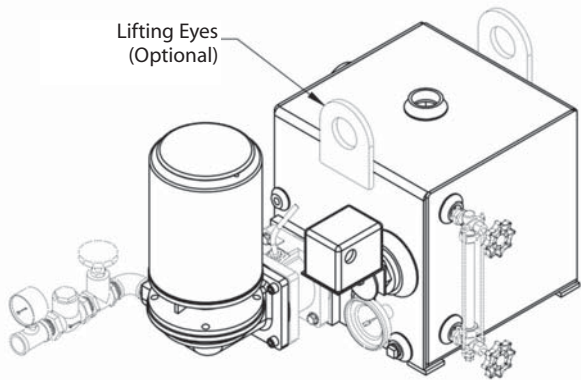
# W4100 & W4300

Electric Pump

## Condensate Return Pumps

ELECTRIC PUMPS

**G SIMPLEX** • 8 Gallon Receiver  
**4100** • Steel Receiver  
**4300** • Stainless Steel Receiver



**G SIMPLEX** • 15 Gallon Receiver  
**4100** • Steel Receiver  
**4300** • Stainless Steel Receiver

