## Force 90+

## 96\% Efficient

## Power Direct-Vent Commercial Gas Water Heater

The 100,000 BTU Force $90{ }^{\text {TM }}$ light-duty commercial gas water heater is equipped with a fully submerged, spiral-shaped condensing heat exchanger and 50 gallons of storage capacity. This design provides much greater heat transfer surface than a standard straight flue tube, resulting in $96 \%$ thermal efficiency and higher hot water output than comparable $80 \%$ efficient water heaters. With a 22 " diameter, the Force $90+^{\text {TM }}$ can be installed in less space than a 75-gallon unit yet delivers greater recovery and lower operating costs.


## Power Direct-Vent Design for Installation Versatility

- Modular blower, with $120 \mathrm{~V}, 60 \mathrm{~Hz}$ electrical system ( 5 amps or less)
- Combined horizontal and vertical vent runs terminating through outside wall, using Schedule 40 PVC pipe as follows:
2 " pipe allows vent runs up to 20 equivalent feet
3" pipe allows vent runs up to 60 equivalent feet
$4^{\prime \prime}$ pipe allows vent runs up to 120 equivalent feet


## Available in Natural Gas or Propane

## Side-Mounted Taps for Recirculating Systems

- Hot and cold "side taps" allow the Force $90+{ }^{\text {TM }}$ to be used for "combination" systems for water heating plus space heating, radiant floor heating or other applications requiring a recirculating hot water loop
- Plugs for recirculating taps are factory installed


## Advanced Electronic Control

- Large LCD display
- Precise temperature control
- Advanced diagnostics

Glass Lined Tank with Two Magnesium Anode Rods

- Provides superior protection against corrosion
- Commercial-grade glass lining protects all "water side" tank surfaces plus inside of internal heat exchanger exposed to condensate


## Top-Fired Low-NOx Burner

- Reduces NOx emissions up to 33\%, complies with Southern California and Texas requirements


## Factory-Installed Temperature and Pressure Relief Valve

Maximum Hydrostatic Working Pressure: 150 psi
Meets ASHRAE/IESNA 90.1 (latest standard)

- Design-certified by UL (Underwriters Laboratories) according to ANSI Z21.10.3-CSA4.3 standards governing storage-type water heaters


## Three-Year Limited Tank Warranty

- Consult written warranty shipped with water heater or contact State for complete warranty information


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## SPECIFICATIONS

| MODEL NUMBER | BTU INPUT PER HOUR | $\begin{aligned} & \text { TANK } \\ & \text { SIZE } \\ & \text { GALLONS } \end{aligned}$ | RECOVERY-GALLONS <br> PER HOUR <br> AT DEGREE RISE |  |  | SHIPPING WEICHT LBS. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | $40^{\circ} \mathrm{F}$ | $100^{\circ} \mathrm{F}$ | $140{ }^{\circ} \mathrm{F}$ |  |
| SHE50 100NE | 100,000 | 50 | 291 | 116 | 83 | 255 |

Manifold Pressure: 4.0 inches w.c. ( .99 kPa ); All models-Maximum Supply Pressure: 14 inches w.c. ( 3.48 kPa ) Minimum Supply Pressure Natural Gas: 3.5 inches w.c. ( .87 kPa ). Minimum Pressure Propane: 8.0 inches w.c. ( 1.99 kPa ). Minimum Pressure must be maintained under both load and no-load (static and dynamic) conditions.

## DIMENSIONS

| SHE50 100NE | A | B | C | D | E | F |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| INCHES | $68-1 / 2$ | $49-1 / 4$ | 22 | $15-3 / 4$ | 3 | 8 |

Top inlet and outlet: $3 / 4^{\prime \prime}$ male NPT Side inlet and outlet: $3 / 4^{\prime \prime}$ female NPT Gas inlet: $1 / 2^{\prime \prime}$ NPT


FRONT VIEW

3"DIAMETER
PVC VENT/EXHAUST

*INSTALL IN ACCORDANCE WITH LOCAL CODES.

## SUGGESTED SPECIFICATION

(Natural or Propane) gas water heater(s) shall be State Force $90+{ }^{+1 M}$ model \# SHE50 100NE, with $96 \%$ thermal efficiency, a storage capacity of 50 gallons, an input rating of 100,000 BTU per hour, a recovery rating of 116 gallons per hour at $100^{\circ}$ rise and a maximum hydrostatic working pressure of 150 psi. Water heater(s) shall be of power direct-vent design, using $2^{\prime \prime}, 3^{\prime \prime}$ or $4^{\prime \prime}$ PVC pipe for horizontal and/or vertical vent runs. Water heater(s) shall have: 1: Seamless, glass lined steel tank construction and a spiral-shaped heat exchanger placed entirely inside the tank, which shall be glass lined on the flue gas side to protect against acidic condensate. 2: Advanced electronic control with large LCD display and advanced diagnostics. 3: A 3-year limited warranty against tank leaks. Water heater(s) shall meet or exceed ASHRAE/IESNA 90.1 (latest revision), and be design-certified by UL (Underwriters Laboratories) according to ANSI Z21.10.3-CSA4.3 standards governing storage tank water heaters.

For complete information on limited warranties, consult written warranty or contact the State Customer Care Center at 1800-365-0024.

State Industries, Inc. reserves the right to make product changes or improvements without prior notice.

For more information on State Water Heaters, contact:
State Water Heaters

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