

Crown Boiler Company

Oil Vent Damper Supplemental Installation Instructions

Converts Select TWZ Series Boilers to High Efficiency TWD Series Boilers

These supplemental installation instructions are to be used in conjunction with the *TWZ Installation Instructions Manual* shipped with the boiler, as well as Field Control's Oil Vent Damper System manual. Follow these supplemental installation instructions and details outlined below unless directed otherwise. Where the TWZ installation instructions manual is missing or unavailable, please record the boiler model and serial number and contact Crown Boiler Company Customer Service at 215-535-8900 for replacement instructions.

WARNING

Prior to attempting any service on this boiler, read, understand and follow all instructions as outlined in this supplement and also the Installation, Operating, and Service Instructions which were provided with the boiler. Failure to follow all instructions in the proper order can cause personal injury or death.

Vent this boiler according to these supplemental instructions. Failure to do so may cause products of combustion to enter the home resulting in severe property damage, personal injury or death.

Insufficient Combustion Air Supply may result in the production and release of deadly carbon monoxide (CO) into the home which can cause severe personal injury or death.

Improper venting may result in property damage and the release of flue gases which contain deadly carbon monoxide (CO) into the home, which can cause severe personal injury, death, or substantial property damage.

Inspect existing chimney and vent connector for obstructions and deterioration before installing boiler. Failure to clean or replace perforated pipe or chimney liner will cause severe injury or death.

Unlisted Vent Dampers and obstructions in the vent pipe are prohibited. The Vent Damper supplied with this kit shall not be used to block the vent of any other appliance.

Installation is not complete unless the Blocked Vent Switch is installed and operating correctly. Failure to install the Blocked Vent Switch may result in dangerous levels of carbon monoxide (CO) during a blocked vent condition, which can cause severe personal injury or death.

NOTICE

The first closing cycle of the Oil Vent Damper may take up to 12 minutes. The capacitors on the Oil Vent Damper control board need to be fully charged before normal closure times of 3 minutes will occur.

A. General. These instructions contain information for ENERGY STAR® Program version 3.0 compliant boilers listed in Table 1 when equipped with the specified Field Controls Oil Vent Damper system (OVD) and at the specified firing rate.

B. Crown High Efficiency Kit Contents

1. Field Controls Oil Vent Damper System (OVD)
 - For TWD065 use Crown kit P/N 270601 which includes the OVD-6
 - For TWD075 use Crown kit P/N 270601 which includes the OVD-6
 - For TWD090 use Crown kit P/N 270602 which includes the OVD-7
 - For TWD125 use Crown kit P/N 270602 which includes the OVD-7
 - For TWD120 use Crown kit P/N 270603 which includes the OVD-8
2. Supplemental Installation Instructions
3. Orange wire nut
4. Conversion Label
5. AHRI Certificate of Product Ratings



TABLE 1: RATINGS

Original Boiler Model No.	Converted Boiler Model No. ⁽¹⁾	Burner Capacity		DOE Heating Capacity ⁽³⁾ (MBH)	Net AHRI Water Ratings ⁽⁴⁾ (MBH)	AFUE %
		GPH	MBH ⁽²⁾			
TWZ065	TWD065	0.65	91	80	70	88.1
TWZ075	TWD075	0.75	105	91	79	87.8
TWZ090	TWD090	0.90	126	111	97	88.2
TWZ125	TWD125	1.25	175	152	132	87.1
TWZ120	TWD120	1.20	168	147	128	87.5

⁽¹⁾ Boiler model with “D” designates Oil Vent Damper.

⁽²⁾ MBH refers to thousands of BTU per hour.

⁽³⁾ Based on standard test procedure prescribed by the United States Department of Energy at combustion conditions of 12.5% CO₂.

⁽⁴⁾ Net AHRI ratings are based on a piping and pickup allowance of 1.15.

D. Installation of OVD

1. Turn off the electrical power at the service switch, circuit breaker, or fuse.
2. Install OVD and Field Controls WMO-1 Blocked Vent Safety Shut-Off Switch (included) in accordance with Field Controls Oil Vent Damp System manual and Figures 1 and 2.
3. Venting Requirements
Vent installation shall be in accordance with the American National Standard ANSI/NFPA 31, “Installation of Oil Burning Equipment”, or the Canadian Standards Association CSA B139, “Installation Code for Oil Burning Equipment”, or applicable provisions of the local building codes.

and Solid Fuel Burning Appliances”, ANSI/NFPA 211 and/or National Building Code of Canada. Masonry chimney must be lined with listed chimney system. Listed clay flue lined masonry chimneys meet venting requirements.

- External chimneys are more susceptible to flue gas condensation due to colder outside air temperatures. To prevent corrosion due to flue gas condensation, use a listed corrosion-resistant metal liner in chimney.
- Oversized chimneys are more susceptible to flue gas condensation. To reduce the likelihood of flue gas condensation and ensure proper draft, use a properly sized listed metal liner in oversized chimney.

- ii. Type L vent or a factory built chimney that complies with the Type HT requirements of ANSI/UL 103. Install in accordance with listing and manufacturer’s instructions.
- b. Vent Connector shall be of any of the following and of the same size as the outlet for this oil-fired boiler.
 - i. Type L or a factory built chimney material that complies with the Type HT requirements of ANSI/UL 103. Install in accordance with listing and manufacturer’s instructions.

WARNING

The use of a vent damper will reduce the off-cycle losses which will result in lower flue gas temperatures and may cause condensation in the chimney. If condensation occurs, the chimney will need to be relined with a listed corrosion - resistant metal liner and a Type L or other corrosion - resistant metal chimney connector must be used.

- a. Install any of the following for this oil-fired boiler:
 - i. Masonry or metal chimney. Build and install in accordance with local buildings codes; or local authority having jurisdiction; or “Standards for Chimney, Fireplace, Vents,

- ii. Steel pipe having resistance to corrosion and heat with a minimum wall thickness of 24 Gauge (0.024”).

WARNING

Failure to properly wire electrical connections to the boiler may result in serious physical harm.

Never jump out or make inoperative any safety or operating controls.

4. Wiring

Wire installation shall be in accordance with the National Fire Protection Association NFPA 70, “National Electrical Code”, or the Canadian Standards Association CSA C22.1, “Canadian Electrical Code Part 1”, or applicable provisions of the local building codes.

- a. Install the OVD wiring in accordance with Figure 2 and Field Control’s Oil Vent Damper System manual.

- i. Terminate the Black wire from the OVD to the L1 terminal on the Boiler Control.
 - ii. Terminate the White wire from the OVD to the L2 terminal on the Boiler Control.
 - iii. Remove the Black wire connected to the B1 tab terminal of the Boiler Control. Cut the female quick disconnect connector off and remove the wire insulation. Wire nut the Black wire to the Yellow/Black wire from the OVD with the orange wire nut provided.
 - iv. Connect the quick disconnect on the Orange wire from the OVD to the B1 tab terminal of the Boiler Control.
 - v. Terminate the Green Ground wire from the OVD to the Boiler Control’s ground screw.
- b. Refer to the boiler’s installation instructions for additional boiler wiring instructions.

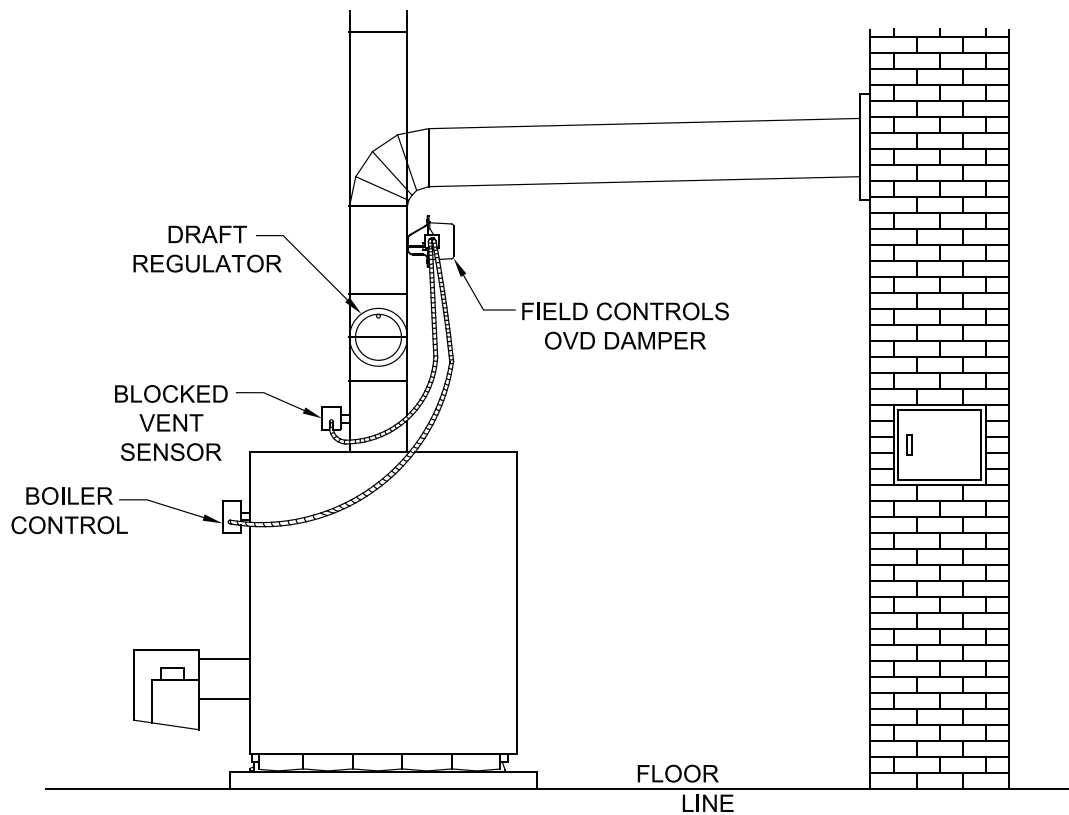


Figure 1: Installation of OVD

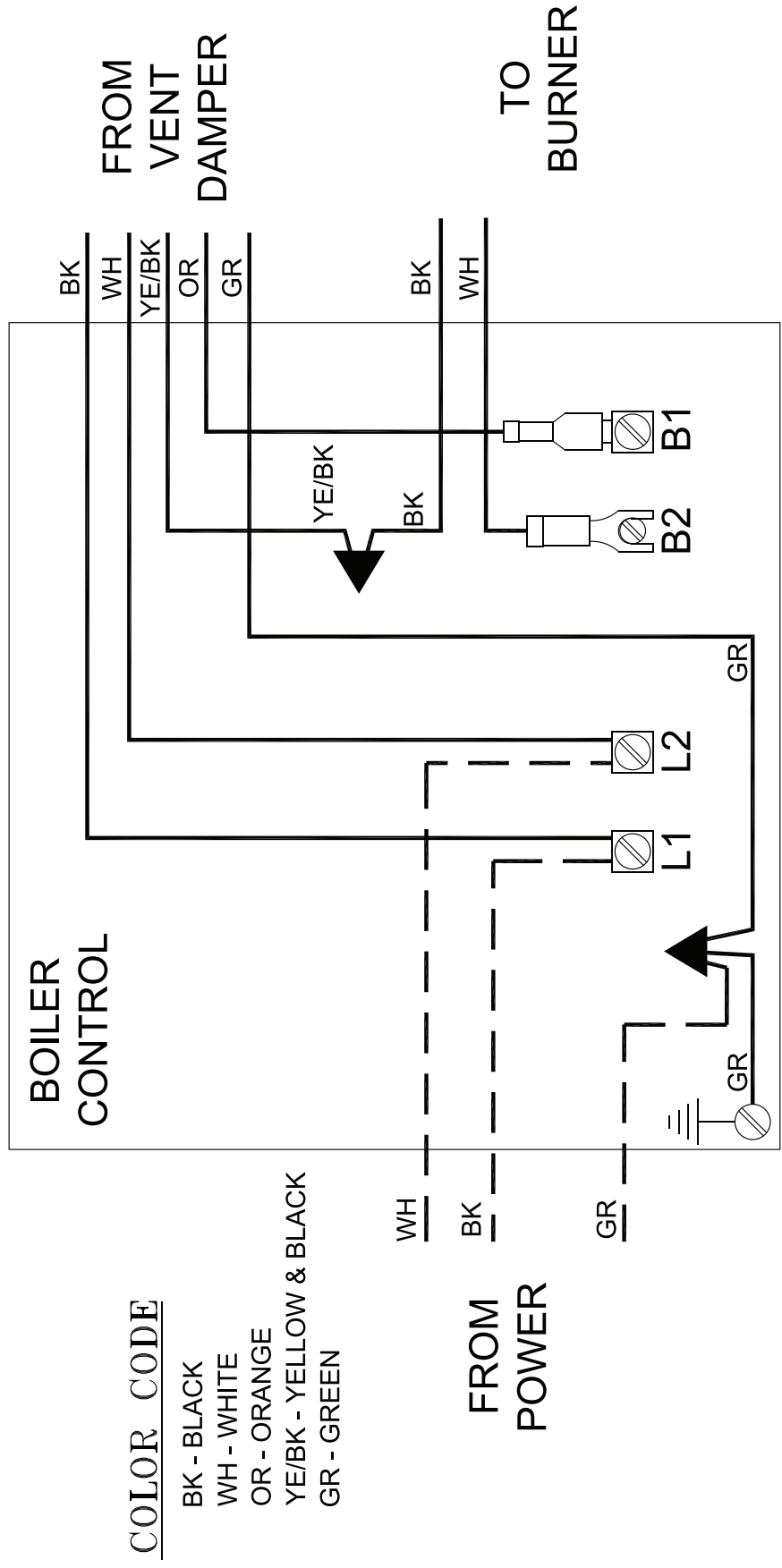


Figure 2: Wiring Diagram

E. Burner Setup

1. Refer to TWZ Installation Instructions for Burner setup and Draft Requirements.

F. Conversion Label Placement

1. Adhere the Conversion Label with the appropriate model number on the boiler jacket adjacent to the existing Rating Label on the boiler.

G. Refer to boilers installation instructions for additional installation requirements.



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