



Commercial Condensing
Gas-fired water boilers

Addendum Boiler Manual

KEEP THIS ADDENDUM WITH BOILER MANUAL

**This Addendum replaces or adds to items in the “SlimFit Boiler Manual”
(Part Number 550-100-116) and previously released Addendums.**

Code/Standard Clarification

In multiple locations throughout the SlimFit Boiler Manual, two codes were not referred to with their complete designation. Please see correct designation below:

- National Fuel Gas Code - ANSI Z223.1/NFPA54
- Natural Gas and Propane Installation Code - CAN/CSA B149.1

Additional Codes/Standards Requirements

Venting/combustion air piping - Installations must provide provisions for combustion and ventilation air in accordance with the section “Air for Combustion and Ventilation,” of the National Fuel Gas Code, ANSI Z223.1/NFPA 54, or Sections 8.2, 8.3, or 8.4 of Natural Gas and Propane Installation Code, CAN/CSA B149.1, or applicable provisions of the local building codes.

Appliances remaining on an existing common vent - Any improper operation of the common venting system should be corrected so the installation conforms with the National Fuel Gas Code, ANSI Z223.1/NFPA 54, and/or the Natural Gas and Propane Installation Code, CAN/CSA B149.1. When resizing any portion of the common venting system, the common venting should be resized to approach the minimum size as determined using the appropriate tables in Chapter 13 of the National Fuel Gas Code, ANSI Z223.1/NFPA 54, and/or the Natural Gas and Propane Installation Code, CAN/CSA B149.1.

Vent Termination Locations – the minimum distance from adjacent public walkways, adjacent buildings, openable windows and building openings shall not be less than those values specified in the National Fuel Gas Code, ANSI Z223.1/NFPA 54, and/or the Natural Gas and Propane Installation Code, CAN/CSA B149.1. Vent and air terminations must be installed at least 12 inches (0.31m) above grade and snow line. Consideration should be given to avoid possible damage caused by vent plumes and condensate when choosing a venting configuration and location. Maintain a distance of at least 4 ft (1.22 m) horizontally from, and in no case above or below, unless a 4 ft (1.22m) horizontal distance is maintained, from electrical meters, gas meters, regulators, and relief equipment.

Minimum Wall Thickness for vent penetration: None

Maximum Wall Thickness for vent penetration: 8 inches



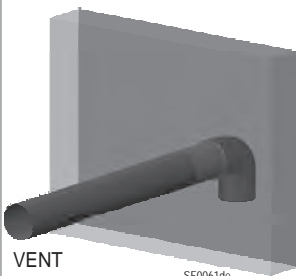
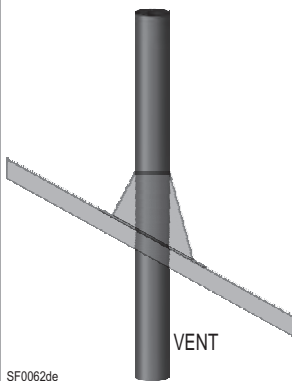
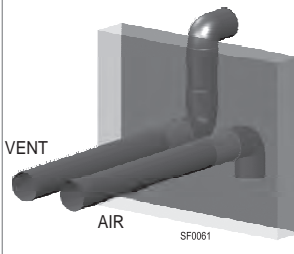
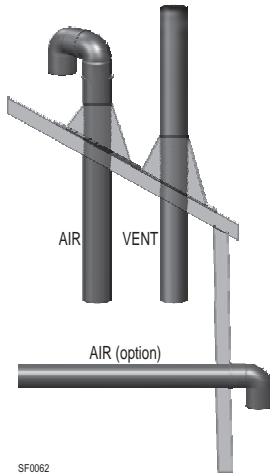
Label all wires prior to disconnection when serving controls. Wiring errors can cause improper and dangerous operation.



Verify operation after serving.

This Addendum adds Figure 27, page 30 in the “SlimFit Boiler Manual” (Part number 550-100-116).

Figure 27 SlimFit boiler venting and air piping — OPTIONS and PIPING LIMITS — The table below lists the acceptable vent/air pipe terminations described in this manual.

SlimFit Model	Pipe Size	SIDEWALL Direct Exhaust	VERTICAL Direct Exhaust	SIDEWALL Direct Vent (vent and air out sidewall)	VERTICAL Direct Vent (vertical or sidewall air)
					
		See page 37	See page 39	See page 43	See page 45
		Max/Min length, feet (note 1)	Max/Min length, feet (note 1)	Max/Min length, feet (note 1)	Max/Min length, feet (note 1)
SF1000	6"	100 max / 6 min	100 max / 6 min	100 max / 6 min	100 max / 6 min
	8"	DO NOT USE 8"	DO NOT USE 8"	150 max / 6 min	150 max / 6 min
SF1500	6"	DO NOT USE 6"	DO NOT USE 6"	DO NOT USE 6"	DO NOT USE 6"
	8"	100 max / 6 min	100 max / 6 min	100 max / 6 min	100 max / 6 min
SF2000	6"	DO NOT USE 6"	DO NOT USE 6"	DO NOT USE 6"	DO NOT USE 6"
	8"	100 max / 6 min	100 max / 6 min	100 max / 6 min	100 max / 6 min

REDUCE MAXIMUM VENT/AIR PIPE LENGTHS FOR ELBOWS

If the TOTAL number of elbows used in the vent and air piping and terminations is **more than two elbows in the vent piping and one elbow** in the air piping, **REDUCE** the maximum lengths above by the following lengths for each additional elbow (whether 45° or 90°).

6-inch vent/air piping — Reduce maximum allowable length by 15 feet for each additional elbow used.

8-inch vent/air piping — Reduce maximum allowable length by 7 feet for each additional elbow used.

NOTE: If the pipe manufacturer's equivalent lengths for elbows is LONGER than the values listed above, use the pipe manufacturer's value for length reduction per elbow instead.

Boilers will **derate** as vent/air pipe length increases — see Figure 119, page 126 for derate amount vs piping length.

This Addendum replaces Figure 28, page 31 in the “SlimFit Boiler Manual” (Part number 550-100-116).

Figure 28 Venting and air piping materials — Use only the materials listed below, ensuring that all materials meet local codes (see Figure 107, page 115 for vent/air part/kit numbers).

Items	Material	Supplier / Manufacturer	United States	Canada
Vent or air pipe and fittings	Polypropylene	Duravent / M&G – Polypro	Certified for Category IV and direct vent appliance venting	Plastic vent pipe must be certified to ULC S636 if required by local codes
		Centrotherm Eco Systems – InnoFlue® Single-wall	Certified for Category IV and direct vent appliance venting	Plastic vent pipe must be certified to ULC S636 if required by local codes
	AL29-4C stainless steel	Heat Fab, Inc. — Saf-T-Vent®	Certified for Category IV and direct vent appliance venting	Certified for Category IV and direct vent appliance venting
		Z-Flex, Inc. — Z-Vent II	Certified for Category IV and direct vent appliance venting	Certified for Category IV and direct vent appliance venting
		Dura-Vent — FasNSeal™	Certified for Category IV and direct vent appliance venting	Certified for Category IV and direct vent appliance venting
		Metal-Fab, Inc. — CORR/GUARD	Certified for Category IV and direct vent appliance venting	Certified for Category IV and direct vent appliance venting
	PVC Schedule 40 See Note 1 for additional requirements for using PVC on the exhaust. See Note 2.		ANSI/ASTM D1785	Plastic vent pipe must be certified to ULC S636 if required by local jurisdiction. Air pipe can be any of those listed at left if acceptable by local codes.
	PVC-DWV Schedule 40 See Note 1 for additional requirements for using PVC on the exhaust. See Note 2.		ANSI/ASTM D2665	Plastic vent pipe must be certified to ULC S636 if required by local jurisdiction. Air pipe can be any of those listed at left if acceptable by local codes.
	CPVC Schedule 40 See Note 2.		ANSI/ASTM F441	Plastic vent pipe must be certified to ULC S636 if required by local jurisdiction. Air pipe can be any of those listed at left if acceptable by local codes.
Primer and Cement	PVC		ANSI/ASTM D2564 (cement) ANSI/ASTM F656 (primer)	ULC S636 rated Primers and Cements
	CPVC		ANSI/ASTM F493 (cement) Primer that is approved for CPVC	ULC S636 rated Primers and Cements
	CPVC to PVC transition		Use only a Primer and Cement that is suitable for joining CPVC and PVC pipe.	ULC S636 rated Primers and Cements

Notes:



1. PVC can only be used on the exhaust of a boiler after 10 linear feet of CPVC pipe. All fittings within the first 10 feet must be CPVC. See Figure 1, page 4.
2. For CPVC/PVC, See page 7, Figure 107 for SlimFit adapters to connect boiler connection to CPVC/PVC pipe.



Every joint on vent and air piping must include a locking collar. Failure to supply locking collars could result in vent/air piping leakage. All PVC and CPVC joints should be permanently joined using the suitable primer and cement for the vent material.

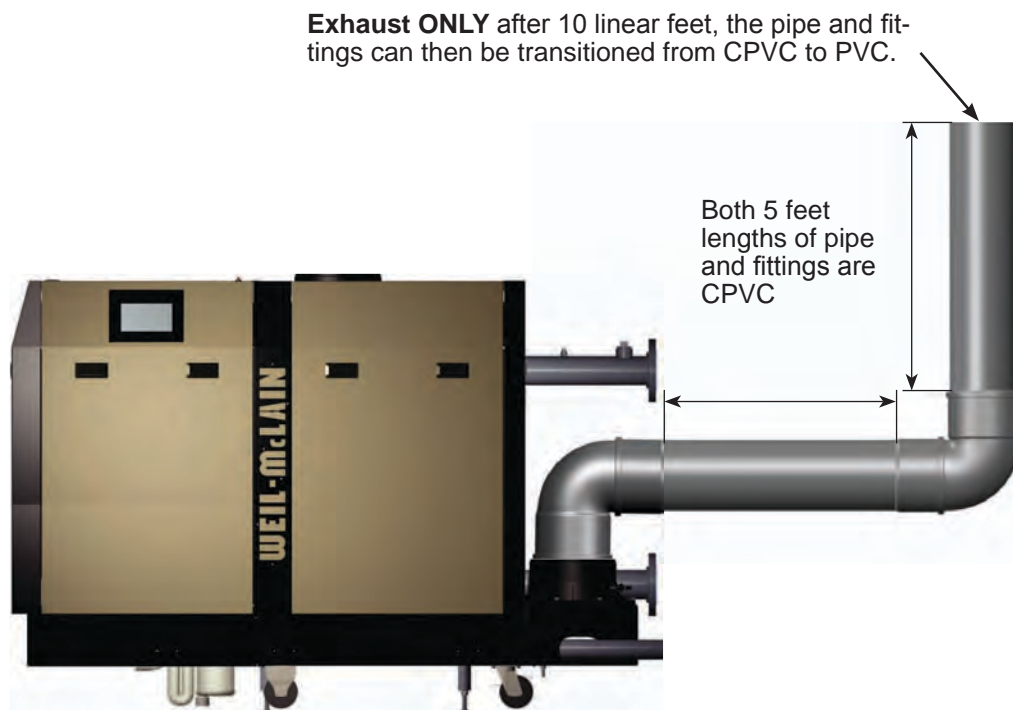


DO NOT USE: Cellular core PVC (ASTM F891), cellular core CPVC, or Radel® (polyphenolsulfone) pipe or any other material not listed in the table above.



DO NOT mix piping from different pipe manufacturers unless using adapters specifically designed for the purpose by the manufacturer.

Figure 28 PVC Venting allowed per requirements specified below.



PVC can only be used on the exhaust of a boiler after 10 linear feet of CPVC pipe. All fittings within the first 10 feet must be CPVC.

This Addendum adds to Figure 119, page 126 in the “SlimFit Boiler Manual” (Part number 550-100-116).

Figure 119 Derate due to vent/air piping length (graphs show maximum firing rate as % of rated input)

Determine vent/air piping equivalent length (feet) from Figure 27, page 30 — Use the length for L in the equations.				
Boiler	Derate % for Direct Exhaust		Derate % for Direct Vent	
	6" vent piping	8" vent piping	6" vent/air piping	8" vent/air piping
SFI000	Derate % = $0.08 \times L$ Example: If L=75 feet, Derate % = $.08 \times 75 = 6.0\%$	NOT ALLOWED	Derate % = $3.0 + (0.08 \times L)$ Example: If L=60 feet, Derate % = $3.0 + .08 \times 60 = 7.8\%$	Derate % = $0.04 \times L$ Example: If L=125 feet, Derate % = $.04 \times 125 = 5.0\%$
	NOT ALLOWED		NOT ALLOWED	Derate % = $0.05 \times L$ Example: If L=80 feet, Derate % = $.05 \times 80 = 4.0\%$
SFI500	NOT ALLOWED	Derate % = $0.03 \times L$ Example: If L=75 feet, Derate % = $.03 \times 75 = 2.3\%$	NOT ALLOWED	Derate % = $0.05 \times L$ Example: If L=80 feet, Derate % = $.05 \times 80 = 4.0\%$
SF2000	NOT ALLOWED	Derate % = $0.05 \times L$ Example: If L=95 feet, Derate % = $.05 \times 95 = 4.8\%$	NOT ALLOWED	Derate % = $0.07 \times L$ Example: If L=60 feet, Derate % = $.07 \times 60 = 4.2\%$
		NOT ALLOWED		NOT ALLOWED



Failure to follow all instructions can result in flue gas spillage and carbon monoxide emissions, causing severe personal injury or death.

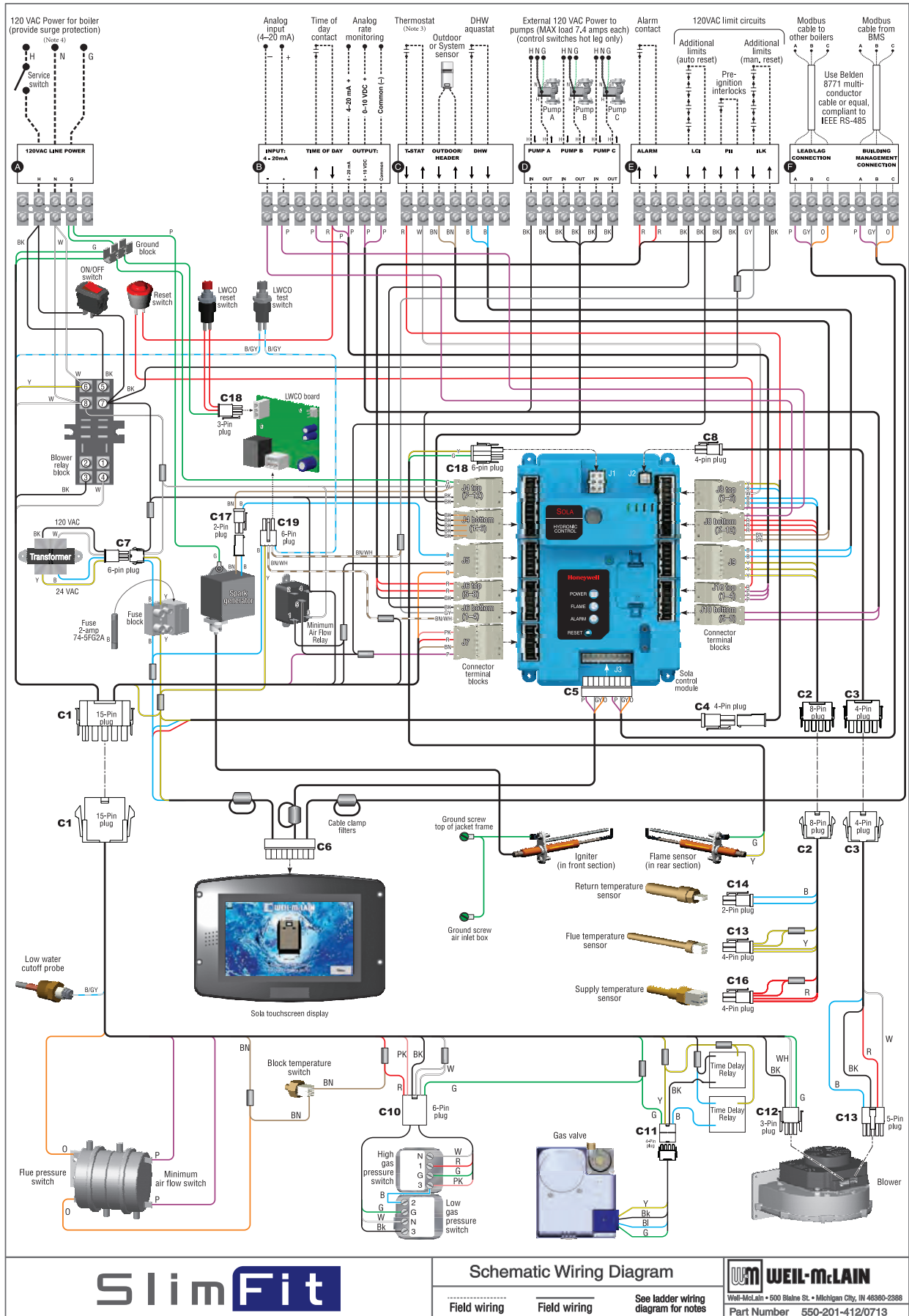


This document must only be used by a qualified heating installer/service technician. Read all instructions, including this addendum and the Boiler Manual, before installing. Perform steps in the order given. Failure to comply could result in severe personal injury, death or substantial property damage.

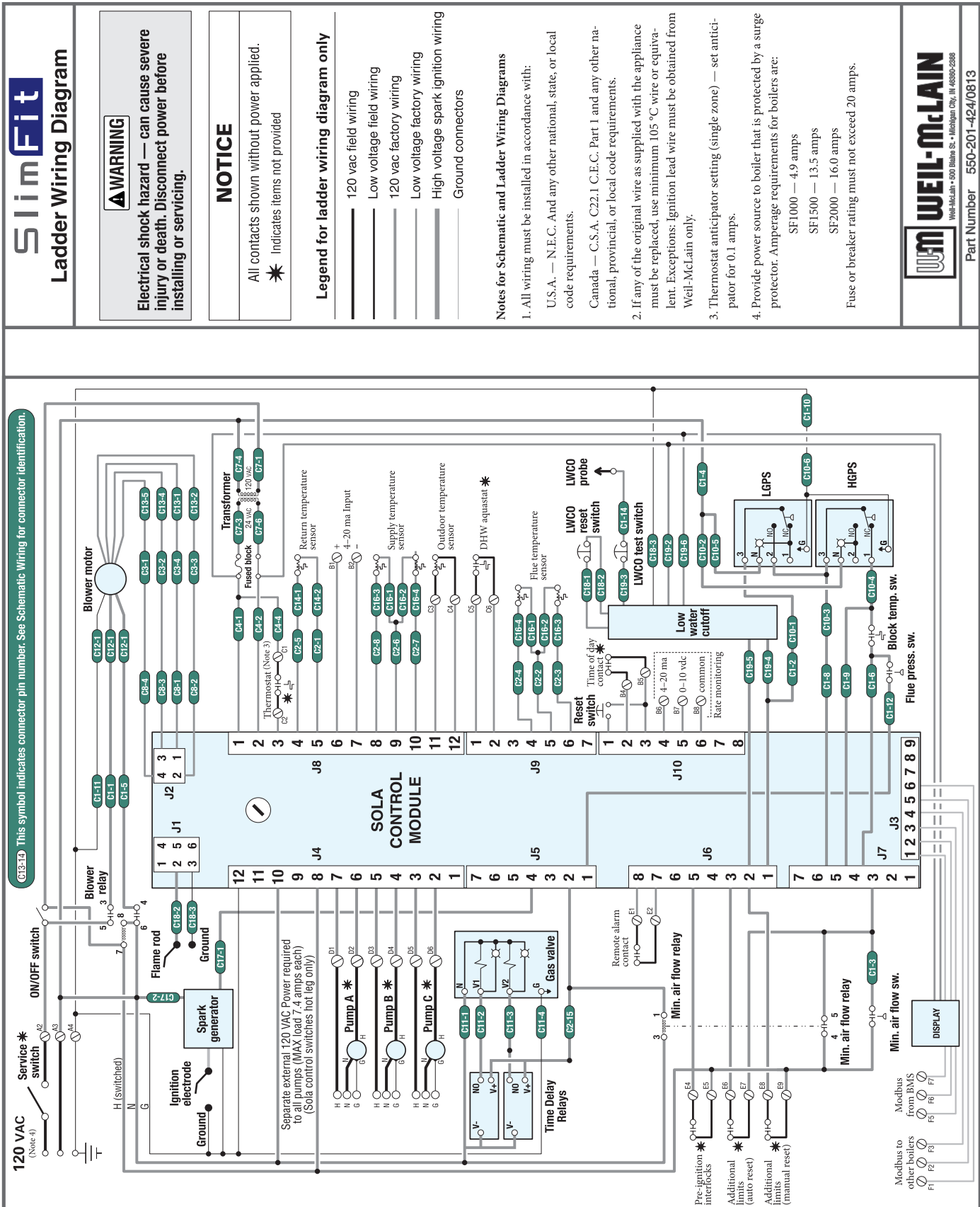


Installation must comply with local requirements and with the National Fuel Gas Code, ANSI Z223.1/NFPA54 for U.S. installations or CSA B149.1 or B149.2 for Canadian installations.

Schematic Wiring Diagram replaces Figure 56 on page 52 and 53



Ladder Wiring Diagram replaces Figure 57 on page 54 and 55



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Part Number 550-201-424/0813

This Addendum adds to Figure 107, page 115 in the “SlimFit Boiler Manual” (Part number 550-100-116).

Figure 107 Miscellaneous parts and kits

Item	Description	Part Number
7	Pressure/Temperature Gauge 1/4 NPT 0-75 PSI (for 30 - 50 PSIG relief valves)	383-000-000
	Pressure/Temperature Gauge 1/4 NPT 0-150 PSI (for 80 - 100 PSIG relief valves)	570-218-055
8	SlimFit Vent/Air Adapter 6 Inch CPVC/PVC – Converts boiler connection to CPVC/PVC diameter.	560-907-739
9	SlimFit Vent/Air Adapter 8 Inch CPVC/PVC – Converts boiler connection to CPVC/PVC diameter.	560-907-738

This Addendum adds to Figure 114, page 122 in the “SlimFit Boiler Manual” (Part number 550-100-116).

Figure 114 Controls

Item	Description	Part Number
130	Pressure switch kit (Pressure switches, hoses, hardware)	383-600-308
290	Time delay relay kit (single)	383-600-309
300	Harness-Wiring Low Water Cutoff Reset	591-391-766
310	Harness-Wiring Flame Sensor	591-391-767
320	Harness-Wiring Blower Control	591-391-768
330	Harness-Wiring Ground	591-391-770
340	Harness-Wiring Gas Pressure Switch	591-391-771
350	Harness-Wiring Main Bottom	591-391-773
360	Harness-Wiring Main Top	591-391-774
370	Harness-Wiring Auxilliary Bottom	591-391-775
380	Harness-Wiring Auxilliary Top	591-391-776

