

Vitola VEM Retrofit

Retrofit Vitoflame 100 #2 oil burner for Vitola boilers (120V control only)

Please file in Service Binder

Safety and Installation Requirements

Please ensure that these instructions are read and understood before installation. Failure to comply with the instructions listed below can cause **product/property damage, severe personal injury, and/or loss of life.**

Working on the equipment

The installation, adjustment, service and maintenance of this product must be done by a **licensed professional heating contractor** who is qualified and experienced in the installation, service, and maintenance of hot water boilers. There are no user serviceable parts on the boiler, burner or control.

Ensure **main power** supply to equipment, the heating system, and all external controls has been **deactivated. Close main gas supply valve.** Take precautions in both instances to avoid accidental activation of power during service work.

It is not permissible to perform service work on any component part ensuring safe operation of the heating system. When replacing parts, use original Viessmann or Viessmann approved replacement parts.

Oil burner to Vitoflame 100

IMPORTANT

This is not a substitute for the original Viessmann Vitoflame 100 technical literature.

This document must be used in conjunction with the Vitoflame 100 technical literature.

The Vitoflame 100 literature contains all local/provincial/state safety rules, codes and regulations, which, if not followed, may cause property damage and/or personal injuries/death.

Guidelines: Retrofit Vitoflame 100 #2 oil burner for Vitola boilers. (120V control only)

Vitoflame 100 #2 oil burner is produced and tested as a burner for the Vitola 200 VB2 boilers with assumption that combustion air will be supplied from beneath original burner hood. The retrofit burner hood is smaller in size and therefore final burner adjustment (air gate) is necessary.

The retrofit burner can only be used with a 120V Viessmann control, which has a 7-pole 41 plug on the burner cable for direct connection to the Viessmann 120V boiler control.

Vitola boilers model/ size				
BEA	VNE	VBC	Input BTU/h	Burner Vitoflame 100 Part Number.
18	18	18	83000	7134 300
22	22	22	107000	7134 301
33	33	33	135000	7134 302
35	40	40	170000	7134 303
46	50	50	219000	7134 304
58	63	63	300000	7134 305

Parts supplied:

Vitoflame 100 burner VEM-series	- Part No. 7134 (300 to 305)
Retrofit burner hood for Vitoflame 100	- Part No. 7820 961
Support bracket (extension bolt)	- Part No. 7820 960
Stud M8	- Part No. 5151 165
Nuts M8	- Part No. 9026 007
Installation instruction	- Part No. 5354 801

Oil burner to Vitoflame 100 *(continued)*

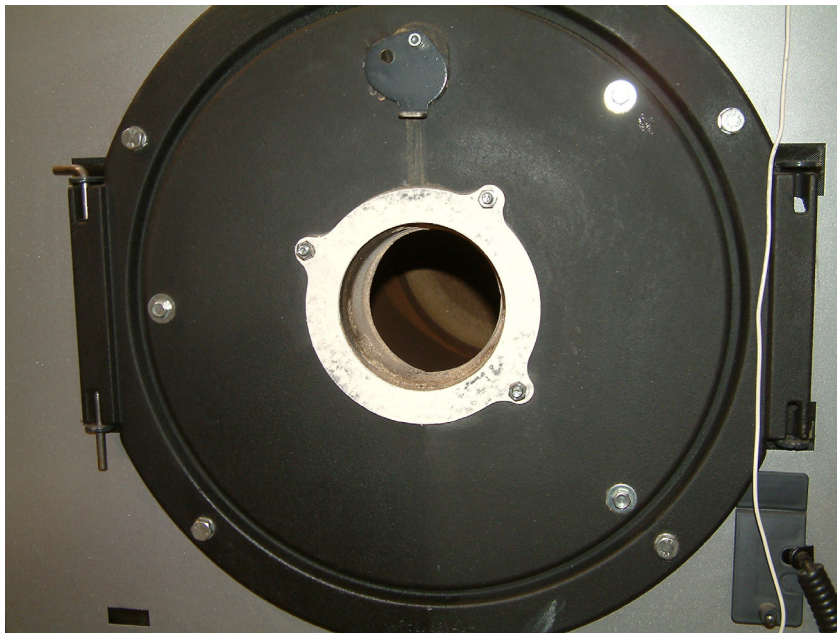


Fig. 1
Burner gasket (with three-bolt pattern).

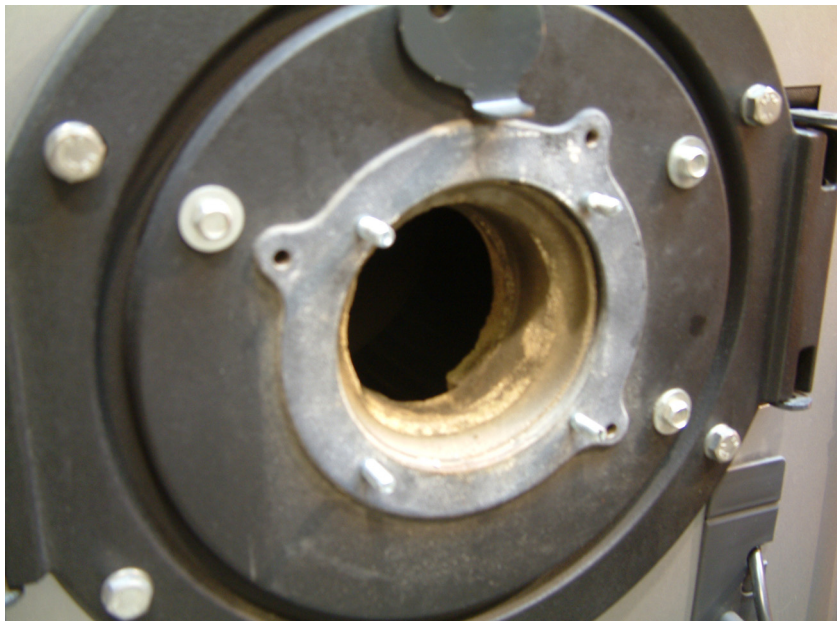


Fig. 2
Four-bolt door pattern.

1. Turn off power to the boiler and shut off fuel line.
2. Remove old burner.
3. Remove old Riello burner flange (if a Riello burner was installed).
4. Open boiler door.
5. Remove combustion chamber insert.
6. Clean out the boiler.
7. Inspect combustion chamber insert, replace if damaged.
8. Reinstall combustion chamber insert.
9. Close and tighten boiler door.
10. Burner ceramic gasket must be adapted to four-bolt pattern (BEA boilers only).
Install four burner mounting M8x30 studs into boiler door.
Press the ceramic gasket against the studs, drill out the marks with 8mm. or 5/16" drill bit.

Older Vitola boilers, **BEA** series, have boiler doors with only a four-bolt pattern for mounting the burner. Newer boilers, VNE and VBC series, have doors with a three- and four-bolt mounting pattern.

Oil burner to Vitoflame 100 *(continued)*



Fig. 3
Remove three bolts and remove mounting flange with blast tube.

The Vitoflame 100 mounting plate can be easily converted to four-bolt mounting pattern, if it is required (Fig. 3 to 8).

11. Remove three bolts and remove mounting flange with blast tube (mark position of the flange).
12. Punch or drill out the pre-cast profile mounting holes with ball peen hammer and finish the holes with round file.
13. Reinstall the mounting flange to the burner body.
14. Burner gasket must be adapted to four-bolt pattern.



Fig. 4
Punch or drill out the pre-cast profile mounting holes with ball peen hammer and finish the holes with round file.

Oil burner to Vitoflame 100 *(continued)*



Fig. 5
Punch out the pre-cast profile mounting holes with ball peen hammer.



Fig. 6
Broken pre-cast hole

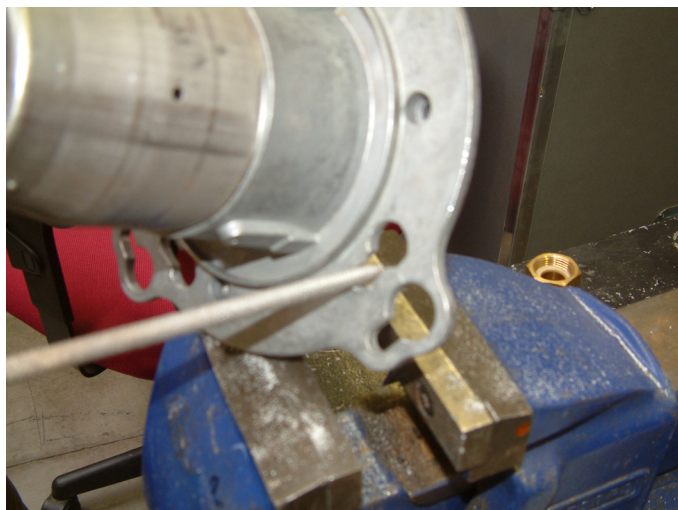


Fig. 7
Finish the holes with round file.



Fig. 8
Mounting flange adapted to four-hole pattern.

Oil burner to Vitoflame 100 *(continued)*

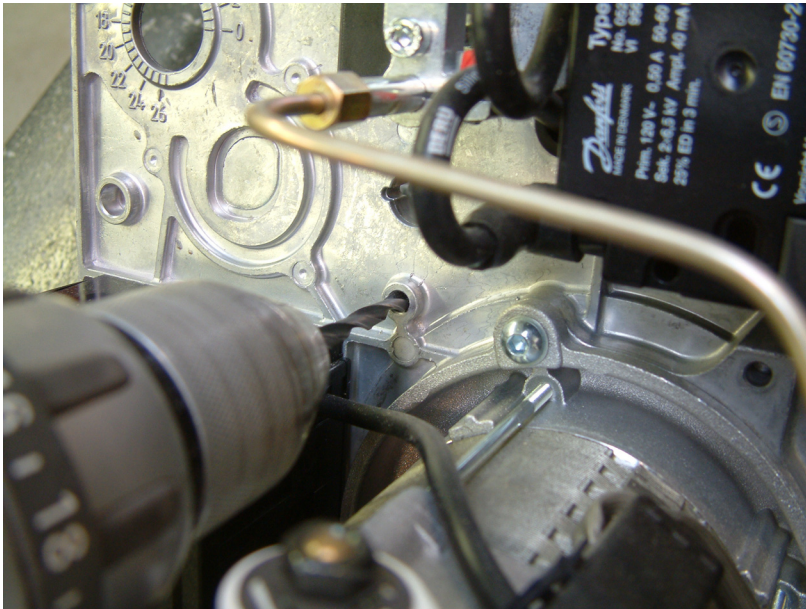


Fig. 9
Using 5mm. drill bit (or 13/64") drill out the hole

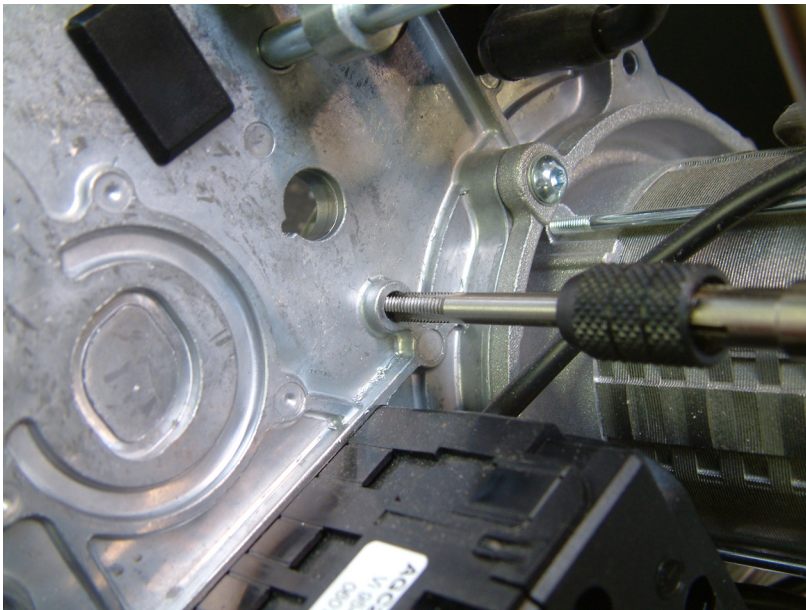


Fig. 10
Use M6x1 thread tap, cut the thread in the plate.

15. Install the burner on the boiler door.

Some Vitoflame 100 burners come not finished for the retrofit application. The hole for the extension bolt is not finished. The field installer has to finish the front burner plate.

16. Remove primary control from sub-base.
17. Remove front burner plate (four snap on locks).
18. Using 5mm. drill bit (or 13/64") drill hole, Fig.9.
19. Use M6x1 thread tap, cut the thread in the plate, Fig.10.
20. Clean all aluminum cuts.

Oil burner to Vitoflame 100 *(continued)*

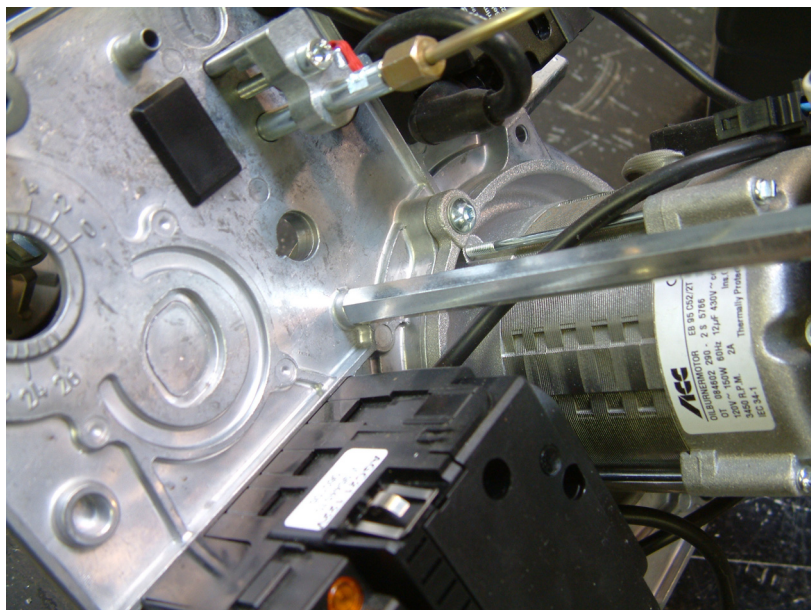


Fig. 11
Install extension bolt.



Fig. 12
Tighten the extension bolt.

21. Install extension bolt (Part No. 7820 960) and tighten it, Fig. 11 and 12.
22. Route oil hoses and power cable into strain relief, Fig. 11 and 12.
23. Install extension piece on primary control reset button.
24. Connect power cable with 7-pole plug to burner control sub-base (Fig. 5).
25. For #2 oil-fired burner the CO₂ level should be around 11.0 ÷ 13.0%, and CO < 25 ppm. Smoke test "0" or trace "1" on Bacharach scale.
26. Log the final setting results and attach printout from analyzer to test sheet on the last page.

Oil burner to Vitoflame 100 *(continued)*



Fig. 13
Route oil hoses and power cable into strain relief. Install burner hood.

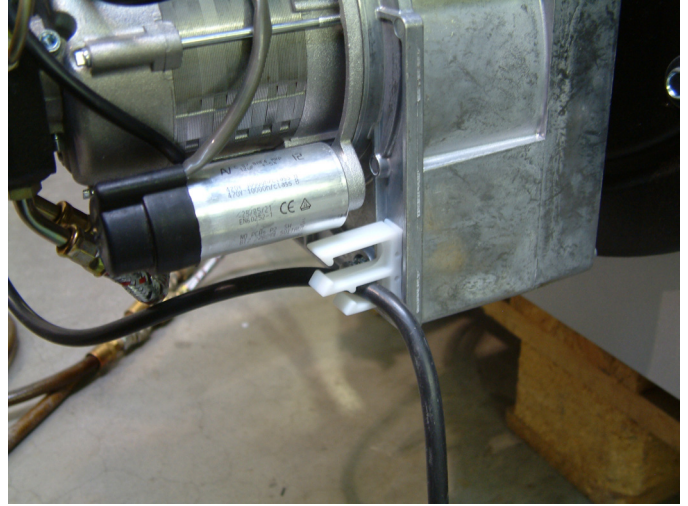


Fig. 14
Route power cable with "41 Plug" into strain relief.

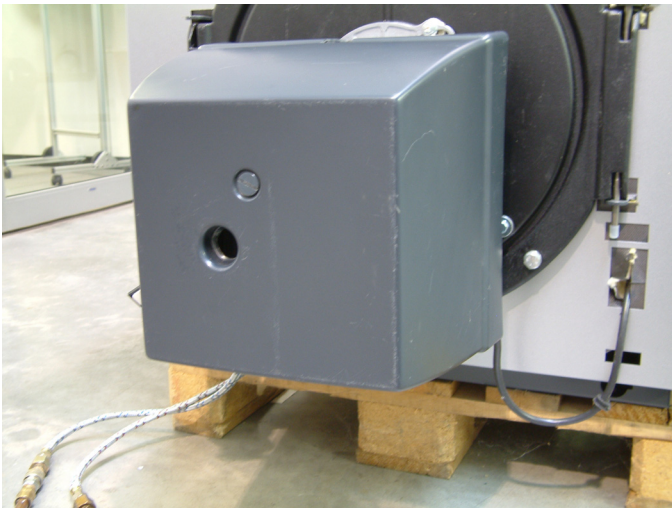


Fig. 15

Attention Installer!

The Vitoflame 100 burners are set up and tested as per Vitola VB2- 200 boiler with proper input, the older Vitola boilers might be slightly different than the present VB2 boiler, therefore a combustion test and adjustment of the burner is required.

The retrofit application must be installed according to present national codes, in Canada "B-139 Installation code for oil burning equipment", in the USA use "NFPA 31 Standard for the installation code for oil burning equipment".

For Canadian installation only, check local code requirements for blocked vent safety switch.

Burner Test Sheet



Vitoflame 100, VEM

for Vitola 200

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CAUTION

Do not overfire or underfire burner. Factory settings to be verified or changed by qualified heating contractor, depending on field measured combustion results.

Factory Calibrations

Burner Model No.:

Burner Serial No.:

Burner tested by:

Date:

_____ for VB2-_____

Burner Model	VEM-18	VEM-22	VEM-33	VEM-40	VEM-50	VEM-63
Input Btu/h	83 000	107 000	135 000	170 000	219 000	300 000
Nozzle - Steinen	0.40 x 45°S	0.60 x 45°S	0.75 x 45°S	1.00 x 45°S	1.25 x 45°S	1.65 x 45°S
Nozzle - Hago	0.40 x 45°B	0.60 x 45°B	0.75 x 45°B	1.00 x 45°B	1.25 x 45°B	n.a.
Oil Discharge Pressure ¹	240 psig	170 psig	170 psig	180 psig	180 psig	175 psig
Fan Discharge Pressure (Air)	1.0 "w.c.	1.0 "w.c.	1.1 "w.c.	0.75 "w.c.	1.2 "w.c.	1.15 "w.c.
Air Gate	5.5	7.5	9	9.5	11	19
Turbulator	4.5	7	9	11	12	23
Two-Pipe Bypass Plug	Installed	Installed	Installed	Installed	Installed	Installed

¹The oil pressure may deviate from the stated values due to nozzle tolerances and varying oil consistency.

Checkmarks indicate burner tested.

The above specifications are for 0-2000 ft. above sea level.

CAUTION

The burner settings above do not guarantee safe operation. Burner settings serve to help provide smooth operation at initial start-up.

Technical data

Fuel No. 2 fuel oil or lighter
Average high
heat value 140 MBH/USG

Specifications

Smoke spot 0-1
Draft regulator M-6"
Overfire draft +0.01 "w.c.
Min. breeching draft -0.02 "w.c.
CO₂ % range 12-13%

See reverse for information on burner test results and verification of results.



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Technical information subject to change without notice

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