

Heating and Boilers – B1/B2

English for Plumbers | Intermediate to Upper Intermediate

Name: _____

Date: _____

Score: _____ / 56

Note: Exercise 8 (Listening) is completed using the interactive online lesson only.

Vocabulary

Term	Meaning	Example
heat exchanger	the component inside a boiler that transfers heat from the burner to the water	"The heat exchanger has scaled up and needs descaling or replacing."
condensate pipe	the pipe that carries acidic waste water produced by a condensing boiler to the drain	"In cold weather the condensate pipe can freeze and shut the boiler down."
modulating burner	a burner that adjusts its output level to match the heating demand	"A modulating burner is more efficient than one that simply switches on and off."
zone valve	a motorised valve that controls hot water flow to a specific area of the heating system	"The upstairs zone valve is not opening. The bedrooms are cold."
inhibitor	a chemical added to the heating system water to prevent corrosion and scale	"Check the inhibitor level annually and top up if necessary."
power flush	a process that forces water at high velocity through the system to remove sludge and debris	"A power flush will clear the sludge that is causing the cold spots on the radiators."
magnetic filter	a device fitted to the return pipe that captures metal particles before they reach the boiler	"A magnetic filter should be fitted on every new boiler installation."
bypass valve	a valve that maintains minimum water flow through the boiler when all zone valves are closed	"Without a bypass valve the boiler can overheat when all radiators are turned off."
expansion vessel	a sealed tank that absorbs pressure fluctuations as water expands when heated	"The expansion vessel has lost its charge. The system pressure keeps rising."
flue terminal	the fitting at the end of the flue pipe on the outside wall that expels combustion gases	"Check the flue terminal is clear of obstruction. A blocked terminal will shut the boiler down."
interlock	a wiring arrangement that prevents the boiler from firing unless there is an actual demand	"Interlocking the boiler with the zone valves prevents unnecessary heating cycles."
diverter valve	a valve in a combi boiler that directs hot water to either the radiators or the hot water tap	"The diverter valve is stuck on heating, so there is no hot water at the tap."

scale reducer	a device fitted to the cold water inlet to reduce limescale build-up inside the boiler	"Fit a scale reducer on the mains inlet in hard water areas."
programmer	a timer unit that sets when the heating and hot water switch on and off	"Set the programmer to heat the house from six to eight in the morning."
TRV	a thermostatic radiator valve that controls the heat output of an individual radiator	"Turn the TRV down in rooms that overheat."

Exercise 1 - True or False?

Read each sentence. Write True or False on the line.

1. A heat exchanger transfers heat from the burner to the water inside the boiler. _____
2. A condensate pipe carries clean water into the boiler from the mains. _____
3. A magnetic filter captures metal particles before they reach the boiler. _____
4. A diverter valve in a combi boiler directs hot water to either the radiators or the tap. _____
5. A power flush removes sludge and debris from the heating system. _____
6. An expansion vessel reduces limescale build-up inside the boiler. _____
7. Interlocking the boiler with zone valves prevents unnecessary heating cycles. _____
8. A TRV controls the heat output of the entire heating system. _____

Exercise 2 - Multiple Choice

Circle the correct word or phrase.

1. The condensate pipe has frozen, which is why the ____ has shut down.
TRV / boiler / inhibitor / zone valve
2. The radiators have cold spots at the bottom. Book a ____ to remove the sludge.
interlock / power flush / scale reducer / programmer
3. The ____ is stuck on heating mode. There is no hot water at the kitchen tap.
expansion vessel / diverter valve / zone valve / magnetic filter
4. Fit a ____ on the return pipe to catch any metal particles before they damage the boiler.
flue terminal / scale reducer / magnetic filter / bypass valve
5. The system pressure keeps climbing. The ____ has probably lost its charge.
TRV / programmer / inhibitor / expansion vessel
6. Check the ____ is clear. If it is blocked by debris, the boiler will lock out.
flue terminal / zone valve / condensate pipe / interlock
7. Turn the ____ down in the bedroom. It is too warm in there at night.
bypass valve / programmer / TRV / inhibitor
8. Without a ____, the boiler can overheat when all the radiators are closed off.
heat exchanger / diverter valve / scale reducer / bypass valve

Exercise 3 - Matching

Match each term (1-8) with the correct description (A-H).

- | | |
|--------------------------|--|
| 1. heat exchanger ____ | A. A wiring configuration that prevents the boiler from operating unless a genuine heating demand exists |
| 2. zone valve ____ | B. The boiler component that transfers thermal energy from combustion gases to the system water |
| 3. power flush ____ | C. A device that attracts and retains ferrous particles from circulating system water |
| 4. diverter valve ____ | D. A high-velocity water process used to remove accumulated sludge and debris from a heating system |
| 5. expansion vessel ____ | E. A pressurised tank that accommodates the increase in water volume as it is heated |
| 6. magnetic filter ____ | F. A valve in a combination boiler that switches hot water between the central heating and domestic hot water circuits |
| 7. interlock ____ | G. A motorised valve that opens or closes to control hot water flow to a particular heating circuit |
| 8. TRV ____ | H. A radiator valve with a built-in sensor that regulates the temperature of an individual room |

Exercise 4 - Gap Fill

Write the correct word in each gap. The word is given in brackets.

- The _____ on the upstairs circuit is not opening. Check the wiring and the actuator head. (zone valve)
- Add the correct dose of _____ to the system water to protect against corrosion. (inhibitor)
- A _____ should be installed on the mains inlet in areas with hard water. (scale reducer)
- The _____ pipe must have a slight fall towards the drain to prevent it freezing. (condensate)
- A _____ is more efficient because it varies its output to match demand. (modulating burner)
- Set the _____ to bring the heating on thirty minutes before the occupants wake up. (programmer)
- Without an _____, the boiler fires even when no heat is needed, wasting energy. (interlock)
- The _____ has scaled up badly and is no longer transferring heat efficiently. (heat exchanger)

Exercise 5 - Word Order

Put the words in the correct order.

- Check / clear / terminal / is / the / flue

- filter / magnetic / return / the / pipe / Fit / a / on

- is / The / diverter / stuck / the / valve

- system / clear / a / Book / power / flush / to / the

5. Turn / the / down / in / the / TRV / bedroom

6. at / six / on / programmer / the / come / to / Set

7. to / system / Add / water / the / inhibitor / the

8. vessel / it / has / charge / Replace / the / its / expansion / lost

Exercise 6 - Word Sort

Write each term in the correct column.

Terms: interlock | modulating burner | diverter valve | expansion vessel | condensate pipe | heat exchanger
| magnetic filter | TRV

Boiler Components	System Controls and Protection

Exercise 7 - Complete the Conversation

Choose the correct word or phrase to complete each gap.

Engineer: The system has not been serviced for three years. Check the _____ level first.
(diverter valve / programmer / inhibitor / TRV)

Plumber: Low. I will dose it now. The radiators also have cold spots. I would recommend a
_____.
(flue terminal / scale reducer / power flush / interlock)

Engineer: Agreed. Is there a _____ fitted on the return pipe?
(expansion vessel / bypass valve / zone valve / magnetic filter)

Plumber: No. I will fit one today. The _____ pressure is also low. It needs recharging.
(condensate pipe / heat exchanger / expansion vessel / TRV)

Engineer: Good. The client says there is no hot water at the kitchen tap but the heating works fine.

Plumber: That sounds like a faulty _____. It is not switching over to the hot water circuit.
(diverter valve / modulating burner / programmer / interlock)

Engineer: Replace it. Also check the _____ terminal outside. It looked partially blocked.
(zone valve / flue terminal / bypass valve / scale reducer)

Plumber: Will do. And I will set the _____ to the correct times before I leave.
(inhibitor / magnetic filter / expansion vessel / programmer)

TEACHER ANSWER KEY — DO NOT DISTRIBUTE TO STUDENTS

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Teacher Answer Key

Note: Exercise 8 (Listening) is online only and not included in this PDF.

Exercise 1

1. True
2. False
3. True
4. True
5. True
6. False
7. True
8. False

Exercise 2

1. boiler
2. power flush
3. diverter valve
4. magnetic filter
5. expansion vessel
6. flue terminal
7. TRV
8. bypass valve

Exercise 3

1. heat exchanger -> B
2. zone valve -> G
3. power flush -> D
4. diverter valve -> F
5. expansion vessel -> E
6. magnetic filter -> C
7. interlock -> A
8. TRV -> H

Exercise 4

1. zone valve
2. inhibitor
3. scale reducer
4. condensate

5. modulating burner
6. programmer
7. interlock
8. heat exchanger

Exercise 5

1. Check the flue terminal is clear
2. Fit a magnetic filter on the return pipe
3. The diverter valve is stuck
4. Book a power flush to clear the system
5. Turn the TRV down in the bedroom
6. Set the programmer to come on at six
7. Add the inhibitor to the system water
8. Replace the expansion vessel it has lost its charge

Exercise 6

Boiler Components: heat exchanger, condensate pipe, modulating burner, diverter valve
System Controls and Protection: magnetic filter, expansion vessel, interlock, TRV

Exercise 7

Engineer: inhibitor
Plumber: power flush
Engineer: magnetic filter
Plumber: expansion vessel
Plumber: diverter valve
Engineer: flue terminal
Plumber: programmer