Registered Heating Business

Hoval

Responsibility for Energy and Environment

Pre-commissioning & site details checklist

UltraOil® Hot Water Boilers

(Valid for all sizes)

This sheet must be completed and returned before any visits can be booked into Hoval diary. The accompanying checklist MUST be completed and returned at least 3 working days prior to site visit.		
Name (person who filled in this form).		
Site Name		
Site Address		
Post Code.		
Details of primary site contact	Name	
	Email	
	Phone	
Details of secondary site contact	Name	
	Email	
	Phone	
Boiler model(s)		
No of appliances		
Boiler ID No. **(1200+ 6 digits): If Known**		
Proposed date of required site visit		
Installer company name		
OFTEC registered company details		
Site Information required		
Is a site induction required?		
What are the site induction requirements e.g. time place duration etc.		
Location of boiler plant room e.g. basement, top floor etc.		
Is there parking on site, if not where?		
Required documentation		
Nearest A&E to site		

Northgate | Newark-on-Trent | NG24 1JN | UK
Phone: (01636) 672711 (option 3).
Email: service.uk@hoval.com Web: www.hoval.co.uk

System

All electrical work must be completed up to Hoval control panel including any associated external sensors. ***All boilers are to be fitted with a separate safety interlock and control (enable). A combined enable and safety interlock may not be acceptable .***	☐ Yes ☐ No			
Is the heating system filled and vented?	☐ Yes ☐ No			
Is the heating water quality checked and in line with Hoval's recommendations? (see appendix 2).	☐ Yes ☐ No			
Are the boilers installed on an unvented system, or a system on an open vent with a minimum of 15 meters (1.5 Bar), head above the boilers?	☐ Yes ☐ No			
What is the cold fill pressure of the heating system?	Bar			
Suitable safety valve(s) fitted at correct point, together with associated discharge pipe work piped to a safe location.	Size mm		Pressure bar	
Are the boilers connected to a BMS system?	☐ Yes ☐ No			
How are the boilers being controlled (please state) See note above on safety interlocks	**0-10v Firing rate** ☐	**BMS enabled** ☐	**Modbus** ☐	**Others please state**
	0-10v Set point ☐	**Hoval Gateway** ☐		
Other manufacturers equipment has been installed and commissioned as necessary i.e. Pressure units, pumps and B.M.S	☐ Yes ☐ No			

Flue System/Ventilation

Is the flue system installed correctly?	☐ Yes ☐ No	
Type of flue system? *If the boilers are in a D formation, please refer to appendix 1*		
Is the flue system gas/watertight?	☐ Yes ☐ No	
Has the flue system been commissioned? *Certificates available for inspection*	☐ Yes ☐ No	
Flue commissioning certificate number		
Is the Safety interlock fitted in line with current regulations?	☐ Yes ☐ No	
Is each boiler fitted with the required flue sample test point which can be sealed? *(Commissioning engineer will not drill a sample point in the flue)*	☐ Yes ☐ No	
Ventilation installed in accordance with current regulations (type of ventilation). If the correct ventilation is not installed the boilers will not be commissioned.	☐ Yes ☐ No	Type of ventilation installed.

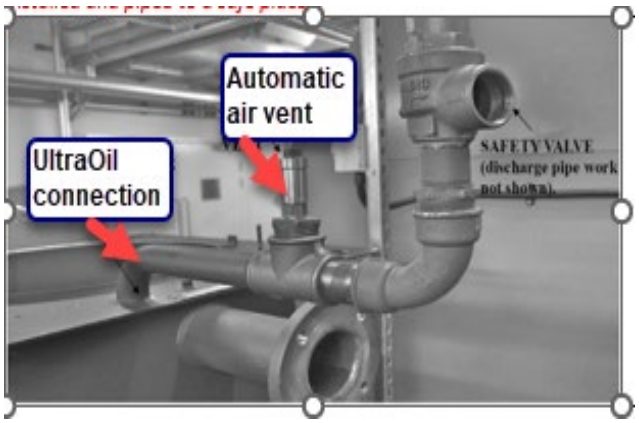
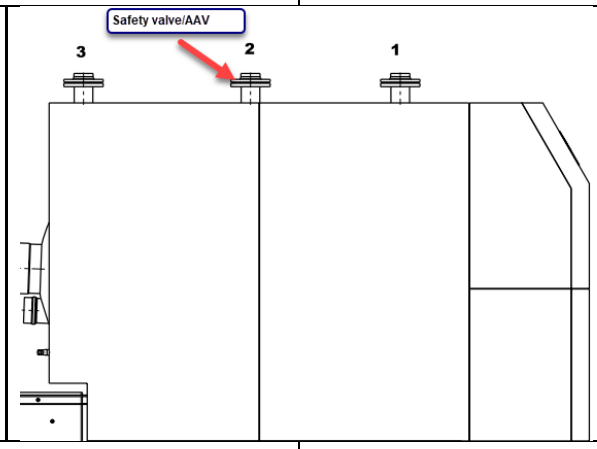
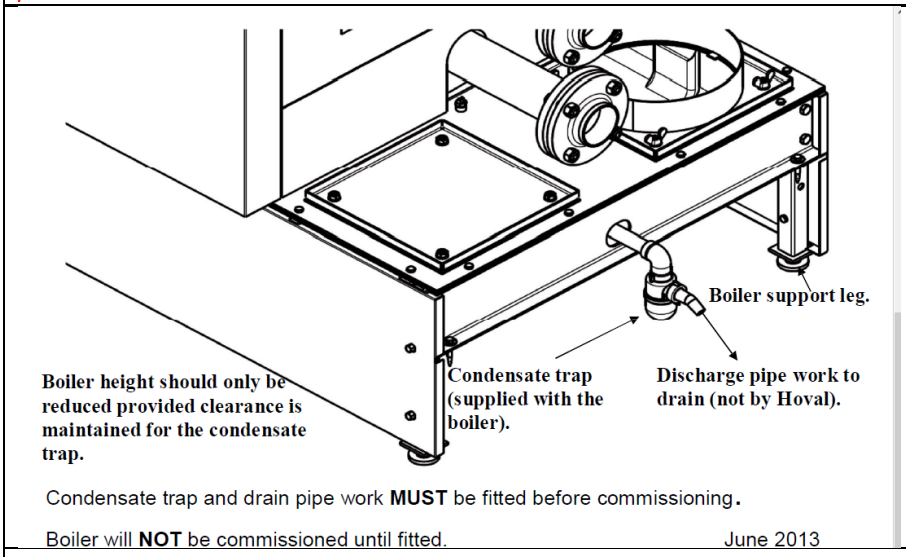
Air supply free area mm^2	High level	mm^2
	Low level	mm^2
Mechanical air supply Volume M/sec	Supply air	M/sec
	Extract air	M/sec

OIL SUPPLY

Type of Oil. **Warning** **Heating oil** only should be used. Kerosine should not be used. Failure to have to correct fuel will lead to the boilers not being commissioned.	
Oil tank risk assessment must be carried out by others/installer/plant owner. Has this been carried out and the finding recorded?	☐ Yes ☐ No
Is there a plant isolation oil valve fitted?	☐ Yes ☐ No
Is there an oil filter fitted to each appliance? A GOK combination unit Hoval part number 2073716 is recommended for each boiler.	☐ Yes ☐ No
Has a 2-pipe system been installed for the burner? See Service notice 4215/01-09/21 Appendix 3	☐ Yes ☐ No
Has the oil been drawn up to the burner	☐ Yes ☐ No
Is there sufficient oil to commission the boilers? All boilers have the capacity to run for 2 hours continually	☐ Yes ☐ No

Please Note-: The UltraOil® boiler and burner should not be fired before the commissioning visits.
Only qualified persons should commission the appliance.
Using the wrong fuel could lead the boiler warranty being void.

Boilers

Automatic Air Vents are fitted in the appropriate position and system filled and fully vented. *The Hoval engineer will not commission the boiler if the automatic air vent and safety valves are not fitted and installed correctly.*	☐ Yes ☐ No
 	
Manufactures supplied condensate trap fitted. *If the manufactures supplied syphon traps are not fitted, commissioning cannot take place*	☐ Yes ☐ No
 Condensate trap and drain pipe work **MUST** be fitted before commissioning. Boiler will **NOT** be commissioned until fitted. June 2013	Should the boiler support legs NOT be used, the manufactures supplied **condensate trap must** still be used, if required the boiler may be installed on a plinth or the floor cut out to accommodate the supplied trap.
Suitable access around the boilers for commissioning/servicing	☐ Yes ☐ No
Clearance around the boiler as per manufactures instructions	☐ Yes ☐ No
Sufficient lighting in plant room installed and working?	☐ Yes ☐ No
Sufficient heat load is available to fire the boiler for commissioning. *This should be sufficient to allow all boilers to run on high fire for 30 minutes uninterrupted.*	☐ Yes ☐ No

Signed on behalf of the installer:	Date:

NOTE: IF THIS CHECKLIST IS NOT FULLY COMPLETED AND RETURNED TO HOVAL THIS WILL DELAY COMMISSIONING TAKING PLACE.

Appendix 1

Mounting / Montaggio

Flue gas over pressure set / Kit collettore fumi in pressione
UltraOil® (320D,400D)

Hoval

⚠ The power supply to the flue gas flaps must be guaranteed before commissioning of the boiler (plug connection created).

ⓘ The clamps (C, Figure 01) of the flue gas connection kit must be firmly tightened.

Mounting UltraOil® (320D-400D):

1. Installation of the two boilers according to the dimension sheet of the manual 4 214 045.
2. Using the clamps (C), mount the flue gas connection kits as shown in the drawing and in the following order:
   - Flue gas connection kit (1)
   - Seals (2), see detail B!
   - Flue gas flaps (3)
     Note the correct direction of installation, see detail!

     ⓘ The flue gas flap on the left side must be mounted in mirror-inverted position!
   - Flue gas connection T-pieces (4)
   - Covers (5)
3. Slide the pre-assembled flue gas connection kits onto the flue gas outlet (6) and fix in place using the clamps (C).
4. Insert the cables (7) of the flue gas flaps into the control detail A as shown in the drawing.
5. Connect the plugs of the flue gas flaps as shown in the diagram (detail A).
6. Mount and adjust the flue support (11).
7. Mount the siphon (12) on the flue gas collector.

⚠ L'alimentazione elettrica per le valvole dei fumi deve essere garantita prima della messa in funzione della caldaia (creato collegamento con spina).

ⓘ Le staffe (C, figura 01) dei raccordi fumi devono essere serrate saldamente.

Montaggio UltraOil® (320D-400D):

1. Installazione delle due caldaie secondo le indicazioni del manuale 4 214 045.
2. Montare i raccordi fumi secondo il disegno mediante staffe (C) nel seguente ordine di successione:
   - Raccordo fumi (1)
   - Guarnizioni (2), vedere dettaglio B!
   - Valvole dei fumi (3)
     Direzione di montaggio osservare dettaglio B!

     ⓘ La valvola dei fumi sul lato sinistro deve essere montata in modo specularmente opposto!
   - Raccordi fumi a T (4)
   - Coperchi (5)
3. Spingere i raccordi fumi premontati sull'uscita fumi (6) e montare mediante staffe (C).
4. Portare i cavi (7) delle valvole dei fumi nei comandi secondo il disegno dettaglio A.
5. Collegare i connettori delle valvole dei fumi secondo lo schema (dettaglio A).
6. Montare e regolare il supporto camino (11).
7. Montare il sifone (12) al collettore fumi.

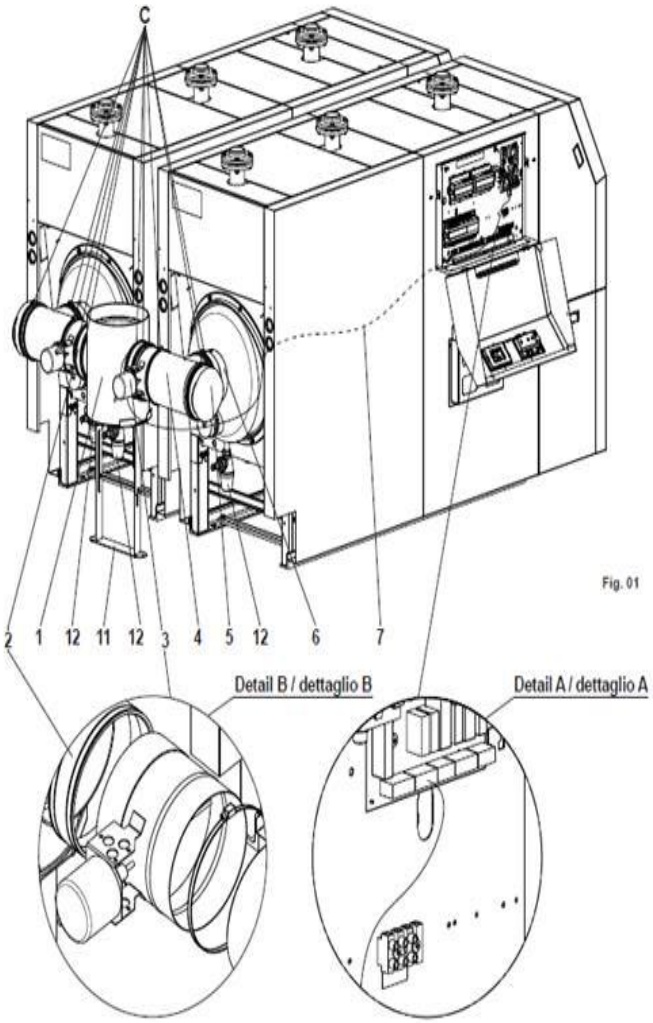


Fig. 01

4 214 033 / 00 - 12/14 Subject to change / Con riserva di modifica EN/IT

Appendix 2

Hoval UK Fill and Replacement Water Quality

IMPORTANT. Reference should be made to the following.

BSRIA BG29/2020 Pre-Commission Cleaning of Pipework Systems 6th Edition.

BSRIA BG50/2021 Water Treatment for Closed Heating and Cooling Systems. 2nd Edition.

VDI 2035 part 1, Scale formation in drinking water and water heating systems.

VDI 2035 part 2, Prevention of damage in water heating installations water-side corrosion.

BS EN 14868 2005, Protection of metallic materials against corrosion – Guidance on the assessment of corrosion likelihood in closed water circulation systems.

CIBSE Heat Networks Code of Practise for the UK **CP1 2020 Annex E**

CIBSE Design Guide Heat Networks 2021

From the Introduction of BG50 edition2.
"In closed heating and cooling systems, problems with corrosion, scale, sedimentation and biofouling can result in energy wastage, poor system performance, and the need for early replacement of plant and components. It is therefore essential to prevent such problems by eliminating the root causes of such phenomena through proper design, construction, maintenance and monitoring. In particular, minimising oxygen ingress is essential"

The above emphasises the absolute necessity for the correct management of all fill and replacement water used in closed heating systems. The documents referenced set out the methods that can be adopted to avoid damaging the heating equipment along with all the other system components.

In the instance of a heating boiler, usually the boiler surfaces are the hottest part of the closed system and so a prime location for damage when necessary precautions are not undertaken.

It is therefore vital that the design, installation and on-going maintenance of closed heating systems account for the quality of the initial fill water, and any make up that, from time to time, may be necessary.

Installers and operators must ensure appropriate measures are taken to limit any scaling, corrosion, or biofouling that may occur within the system. Additionally, it is important that Oxygen ingress is, wherever possible, prevented. Dissolved Oxygen must be closely monitored so that the correct water chemistry can be managed on an ongoing basis.

Raw water is unlikely to be suitable for use in a commercial heating system in the UK, it will need to be treated either physically or chemically to eliminate the potential for corrosion and scaling on boiler and system surfaces and to prevent any biological fouling caused by bacteria.

We suggest that installers refer to the advice set out in the Reference documents indicated and follow the procedures outlined in these documents in relation to the water quality used for both initial fill and any subsequent make up that might be introduced into the system and Hoval boilers.

A Water Treatment specialist should be consulted to advise on the most appropriate methods to be undertaken prior to filling the system.

Where the local water hardness dictates, a level of pre-treatment may be necessary to either partially soften or demineralise (or deionise) the water. This to limit the mineral content that might then go on to form scale on the boiler surfaces. The Water Treatment specialist should review the quality of the proposed fill water at an early stage and advise.

In the UK chemical inhibitors are commonly used to restrict dissolved Oxygen in the water – to limit its impact and reduce potential corrosion - and may also prevent any mineral hardness precipitating and forming a scale on hotter surfaces. Scaling can lead to localised overheating and potential subsequent damage.

An alternate approach is to continually remove dissolved oxygen from the circulating water. This does not address possible mineral content and some pre-treatment or inhibiting chemicals of the fill water may still be necessary. Fully demineralising may be necessary depending on the method adapted.

In both cases it is important to limit the introduction of fresh make up water as this can impact on the concentration of any inhibitors and will re-introduce mineral hardness along with dissolved Oxygen and/or Carbon Dioxide into the circulating water. If left unchecked this can lead to damage.

It is normal to ensure careful control of the pH of the system water, **for steel and stainless- steel** boilers this would be a **pH of 8.2 to 10** (after 10-12 weeks of operation) but a **lower pH of 8.0 to 8.5** is necessary if there are **Aluminium alloys** in contact with the water.

Only the Hoval TopGas boiler models have an Aluminium Heat Exchanger.

Hoval UltraGas, UltraOil, Max3plus, Max3, SRplus, STplus, THW, STU and BioLyt boilers are all fabricated from either steel or stainless steel.

The electrical conductivity is also commonly used as an indicator of water quality. The measure and any limits that should be observed will depend on the quality of the fill water, and the level of minerals it contains, along with the methods adopted to control the water chemistry. Sudden changes in conductivity can indicate changes in system water quality, so continuous monitoring is advised.

Monitoring for changes will of course flag potential issues. Investigation and remedial action to correct any imbalance should then be made in this event.

The quality of the heating water must be checked and documented periodically.

Our trade association ICOM (Industrial and Commercial Energy Association) produced a water treatment guide for systems like your own and they recommended monitoring frequencies as follows.

- Within 14 days of first fill and pressure test.
- Within 14 days of pre commissioning cleaning.
- Whenever the make- up supply water quality is changed – good practise to include a water meter on the supply to detect any unexpected additions.
- In line with the recommendation of the water treatment expert.
- The water quality should be checked **at least** quarterly - records of results, tests and procedures should be properly logged to monitor any changes or trends.

Example frameworks for water sampling record keeping are detailed in the BG29/2020 document.

The water treatment provider should be able to confirm that either the inhibitor(s) and biocide(s) products are correctly applied to be able to maintain the water quality on an ongoing basis, or that the system water is being correctly managed to ensure compliance with the installation design.

A site's water treatment regime must be in place prior to the first equipment commissioning visit.

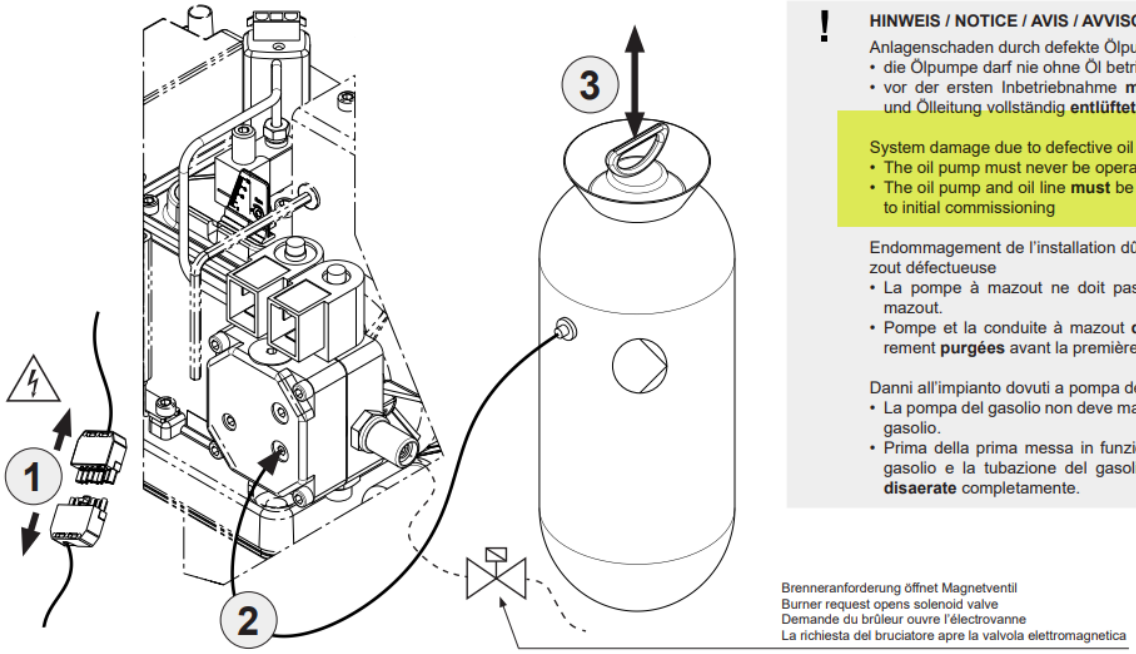
In systems with ongoing oxygen ingress or where regular make up water is anticipated then isolating the boilers from the rest of the system, by utilising a plate heat exchanger, will offer the greatest protection to the boilers.

Appendix 3

Hinweis / Notice / Avis / Avviso

Entlüftung Ölbrenner / Oil burner ventilation / Purge brûleur à mazout / Disaerazione bruciatore a gasolio

Hoval



HINWEIS / NOTICE / AVIS / AVVISO

Anlagenschaden durch defekte Ölpumpe
- die Ölpumpe darf nie ohne Öl betrieben werden
- vor der ersten Inbetriebnahme **muss** die Ölpumpe und Ölleitung vollständig **entlüftet** werden

System damage due to defective oil pump
- The oil pump must never be operated without oil
- The oil pump and oil line **must** be **vented** in full prior to initial commissioning

Endommagement de l'installation dû à la pompe à mazout défectueuse
- La pompe à mazout ne doit pas fonctionner sans mazout.
- Pompe et la conduite à mazout **doivent** être entièrement **purgées** avant la première mise en service.

Danni all'impianto dovuti a pompa del gasolio difettosa
- La pompa del gasolio non deve mai funzionare senza gasolio.
- Prima della prima messa in funzione, la pompa del gasolio e la tubazione del gasolio **devono** essere **disaerate** completamente.

Brenneranforderung öffnet Magnetventil
Burner request opens solenoid valve
Demande du brûleur ouvre l'électrovanne
La richiesta del bruciatore apre la valvola elettromagnetica

4 215 923 / 01 - 09/21

Änderungen vorbehalten / Subject to modifications
Modifications réservées / Con riserva di modifica

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