Narrative for Planning Condition 38 discharge.

> Condition 38 can only be partially discharged as further details are required including a maintenance plan detailing how the CHP and catalytic converter will be serviced and maintained to ensure the CHP continues to meet the required emissions targets throughout its lifetime

Skanska, on behalf of the client, have been in correspondence with the CHP manufacturer (specified by the Building Services Consultant) and detailed in the plant and equipment schedules regarding the N0x emissions of their machine.

Skanska had a preferred method for N0x control and that was to include for real time measurement of the N0x emissions from the Combined Heat & Power (CHP) plant and provide this data to the building management system. The building management system would have an interlock built into the software to prevent the machine from running if the N0x exceeded the limit of <95 mg/Nm^3. From the correspondence, it has become clear that real time measurement of N0x is not yet viable due to the sensor technology not being robust enough to have a reasonable service life. Although sensor technology is developing, nothing viable exists today.

The manufacturer has explained that although N0x cannot be measured successfully in real time the N0x can, and is measured at time of service along with 0^2 and $C0^2$. These are routinely measured during the service interval, usually every 1,000 hrs (approx. every 8 weeks). Detailed on page 2 is a the after sales and service briefing document and detailed on page 3 is CHP service report document, which informs the technical parameters checked at the service. It can be seen from the service report document that there is a section specifically for emissions and N0x is specifically detailed.

The client has requested that full maintenance package options are to be provided and will engage with the manufacturer to ensure that the CHP plant is properly serviced at the intended service intervals following completion and occupation of the development St.Giles Circus.

Our Approach

We take pride in our ability to look after our customers with our range of support services from enquiry through to after sales and maintenance. Our continued support ensures that the products are commissioned and operated to provide effective, efficient performance and a long life.

Spares

All costs for original spare parts and associated labour are included in the warranty period. We maintain comprehensive stocks of commonly used spare parts which are available for next day delivery. Recommended spares lists are available on request. Contact us now on 01636 593 412 or via e-mail spares@hoval.co.uk

Service Support

We will contact you before your service visit is due to arrange a convenient time for our service engineer to call.

Hoval Service

Hoval Hotline
01636 672 711

Technical Support

In order to find out how you can benefit from Hoval's Technical support, e-mail us on boilertechnical@hoval.co.uk

Comprehensive Maintenance

We offer a full service package encompassing the boiler, burner and boiler controls to deliver the following benefits:

- Optimised control settings for enhanced comfort with low operating costs
- Reduced energy consumption and carbon emissions
- Early defect detection and timely wear checks to ensure safe operation

UltraGas® Condensing Gas Boilers

Maintenance of Biomass Boilers and CHP

Biomass boilers and combined heat and power (CHP) plant require specialist knowledge to ensure optimum performance. We have many years' experience of designing and maintaining these systems, resulting in:

- Precise control to maintain outputs while reducing running costs and emissions.
- Harmonised integration between different heat sources.

STU and BioLyt biomass wood pellet boilers and PowerBloc CHP combined heat and power units

Hoval

An expert partner

Along with our local partners we help our customers to select innovative solutions such as heat pumps, biomass boilers, solar thermal panels, CHP engines as well as gas and oil boilers.

We have a national network of installers and service engineers that will help ensure that you get the best out of your equipment.

Hoval Ltd
Northgate
Newark-on-Trent
Nottinghamshire
NG24 1JN
United Kingdom

Phone 01636 672 711
Fax 01636 673 532
email aftersales@hoval.co.uk
www.hoval.co.uk

After Sales and Service

Heating and Cooling Equipment

Value Added Services

Hoval

All Round Service
Adding Value to Our Products

Hoval service extends beyond the purchase and installation of your heating and indoor climate solutions. Our team of fully qualified service engineers are on hand to meet your after sales support requirements.

We welcome our lasting duty of care as it ensures our products deliver safe, trouble-free operation.

The level of after sales care available can be tailored to meet a variety of requirements in support of your Hoval equipment.

Standard and Extended Warranties

Delivery of our products to site is just the beginning. We will support you through installation, commissioning and ongoing maintenance to ensure you continue to enjoy the benefits of reliable and efficient performance.

All of our products come with a 18 month warranty as standard from date of delivery or 12 months from date of first commissioning (whichever ends sooner).

Extended warranties may be available on request.

Commissioning and Servicing

When purchasing boilers and related equipment from Hoval, you can choose commissioning and servicing packages to suit.

When you engage us to commission and service your Hoval equipment you can rest assured that we will deliver optimum performance from the first day of operation, with prolonged product life and minimum environmental impact.

Contact the Hoval Hotline for further details in reference to After Sales Service.

01636 672 711 aftersales@hoval.co.uk

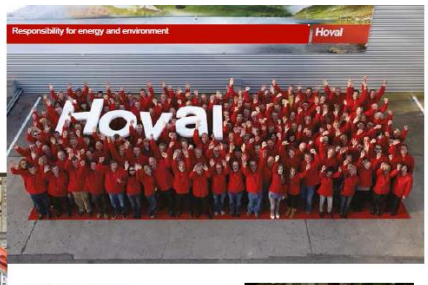
Always Here for You

We understand the importance of maintaining a comfortable indoor environment and availability of hot water. Therefore our after sales service is available 365 days[1] of the year.

Furthermore, as the manufacturer, we have fast access to spares for both past and current products.

Our service desk can be reached on:
01636 593 413.

(1) On-site support not available on Christmas Day, Boxing Day or New Year's Day.



Peace of Mind

In order to provide expert commissioning, maintenance and fault finding, all our service engineers are Gas Safe registered and receive continuous training to ensure they are up to speed with the latest products, technical developments and legislative requirements.

Service Contracts

By choosing Hoval equipment, you have laid a solid base for reliable, economical and environmentally friendly heating for many years to come. However, even the best products require regular care to maintain efficiency and reliability to maximise your return on investment. With one of our service contracts, tailored to your needs, you can do just that.

Reliability

Leave the maintenance of your Hoval equipment to experts by opting-in for a service contract. You will receive regular maintenance visits followed by a full service report.

Planning for your equipment to be serviced will enable you to accurately budget over the years. We have a variety of pricing plans on offer to ensure you choose the right plan for you and your equipment.

To find out how you can benefit from our Service Contracts please contact: aftersales@hoval.co.uk

Pricing Plans

Hoval Hold PLAN

Hoval Hold Plan

Take out a Hoval Hold Plan on your equipment for either two or three years and you will save money by 'holding' the first year's price for the following years. Includes:

- Phone support
- Discounted spare parts*

*After the first year of your Hoval Hold Plan, you will benefit from a discount on any spare parts.

Hoval Pay as you go PLAN

Hoval Pay As You Go Plan

Pay annually for a service package that includes:

- Plant inspection visit
- Major service visit
- Interim service visit (if applicable)

With the Hoval Pay As You Go Plan you receive a service solution that is optimally tailored to your individual needs.

Hoval Seasonal off peak PLAN

Hoval Seasonal Off Peak Plan

Schedule your boiler for servicing from the first of April to the thirty-first of July and benefit from a 10% discount against our standard service price.

Your Hoval boiler will be checked, serviced and fine-tuned for optimum performance by the Hoval service engineers.

Pre-winter inspection visits can be arranged on request.

To view our extra After Sales and Service packages, please visit our website www.hoval.co.uk

Hoval

Combined Heat and Power Service Report

Hoval

Engineer	
Date	
Site Address	

SAP Job Number	
Functional Location	
Appliance Serial Number	
Equipment Number	
Service Level	

PLEASE TAKE SPECIAL NOTE: - The heating system water quality should be in accordance with Hoval's requirements as detailed in the Technical and Installation Manual supplied with the Combined heat and power plant.

CHP Overview Pre-Service			
Energy produced to date	kWh	Coolant inlet temperature	°C
Current set-point	kW	Coolant outlet temperature	°C
Total hours run	Hours	Coolant pressure	Bar
Service hours	Hours	Oil temperature	°C
Total starts		Oil pressure	Bar
Battery Voltage	V	Oil level (sump)	%
Exhaust temperature bank 1	°C	Lambda set-point	λ
Exhaust temperature bank 2	°C	Lambda current value	λ

CHP Overview	
Current set-point	kW
Gas inlet pressure	mbar
Gas flow rate	m^3/h
Cabin temperature	°C
Battery voltage	V

Emissions	
CO_2	%
O_2	%
NO_X	mg/m
Lambda set-point	λ
Lambda current value	λ
Lambda analyser reading	λ
Lambda calibration (yes / no)	
Gas mixer	%
Throttle valve	%
Output Controller	%

Engine Values	
Oil temperature	°C
Oil pressure	bar
Coolant inlet temperature	°C
Coolant outlet temperature	°C
Coolant pressure	bar
Crank case pressure	mbar
Air inlet pressure	mbar
Engine speed 1	Rpm
Engine speed 2	Rpm
Exhaust temperate bank 1	°C
Exhaust temperate bank 2	°C
Pre-cat exhaust temperature	°C
Post-cat exhaust temperature	°C
Post heat exchanger exhaust temperature	°C
Post-cat exhaust back pressure	mbar
Post heat exchanger exhaust back pressure	mbar
Intercooler mixture temperature	°C
Intercooler mixture pressure	mbar

Findings	
Has the appliance been installed to the relevant standards and manufacturers instructions?	Select
Is the appliance safe to use?	Select
If the appliance is not safe to use, how has it been classified?	Select
Has a warning notice been raised and label attached to the appliance?	Select
Has the appliance been disconnected from the fuel supply	Select
Is further work required?	Select