

**Modul-plus**  
Domestic Hot Water Calorifier

**Hoval**

Responsibility for energy and environment

**Continuous output range 1750 to 10000 l/hr**



## Why choose Modul-plus?

The Modul-plus calorifier is designed to operate with the full range of Hoval boilers. It is available in seven model sizes covering DHW outputs up to 10,000 litres/hr at 90°C primary feed.

Thanks to its unique design Modul-plus provides rapid temperature recovery and constant high efficiency heat transfer making it a popular choice for hotels, leisure centres, sports halls and large commercial properties.

### Economical



#### Cost efficient

- **Guaranteed continuous hot water** production at peak times
- **Low power consumption** thanks to the innovative construction
- **Efficient operation** due to the patented rippled heat transfer surface

### Ecological



#### Technologically advanced

- **Legionella resistant design** due to the temperature control
- **Compact dimensions** allow a smaller boiler room with less pipe work and fittings
- **Long life** by the use of stainless steel

### Easy to use



#### Simple handling

- **Very light weight** allowing easy installation
- **The modular units are mounted** on a common steel section base frame giving low unit floor loading and not requiring any special foundation
- **Low maintenance** with resistance to scale formation on the heat transfer surface thanks to the rippled surface design

### Sophisticated



#### Compact and flexible

- **Modular construction** based on cell principle enables greater flexibility and able to meet the precise requirements
- **Modul-plus types** are able to handle chloride contents up to 300mg / litre
- **Demand-oriented, efficient solution** available in seven sizes and with the option of cascading

The Modul-plus range offers numerous innovative construction details that make it the perfect choice for upgrades and new installations.

At Hoval we have the perfect system for almost any requirement.

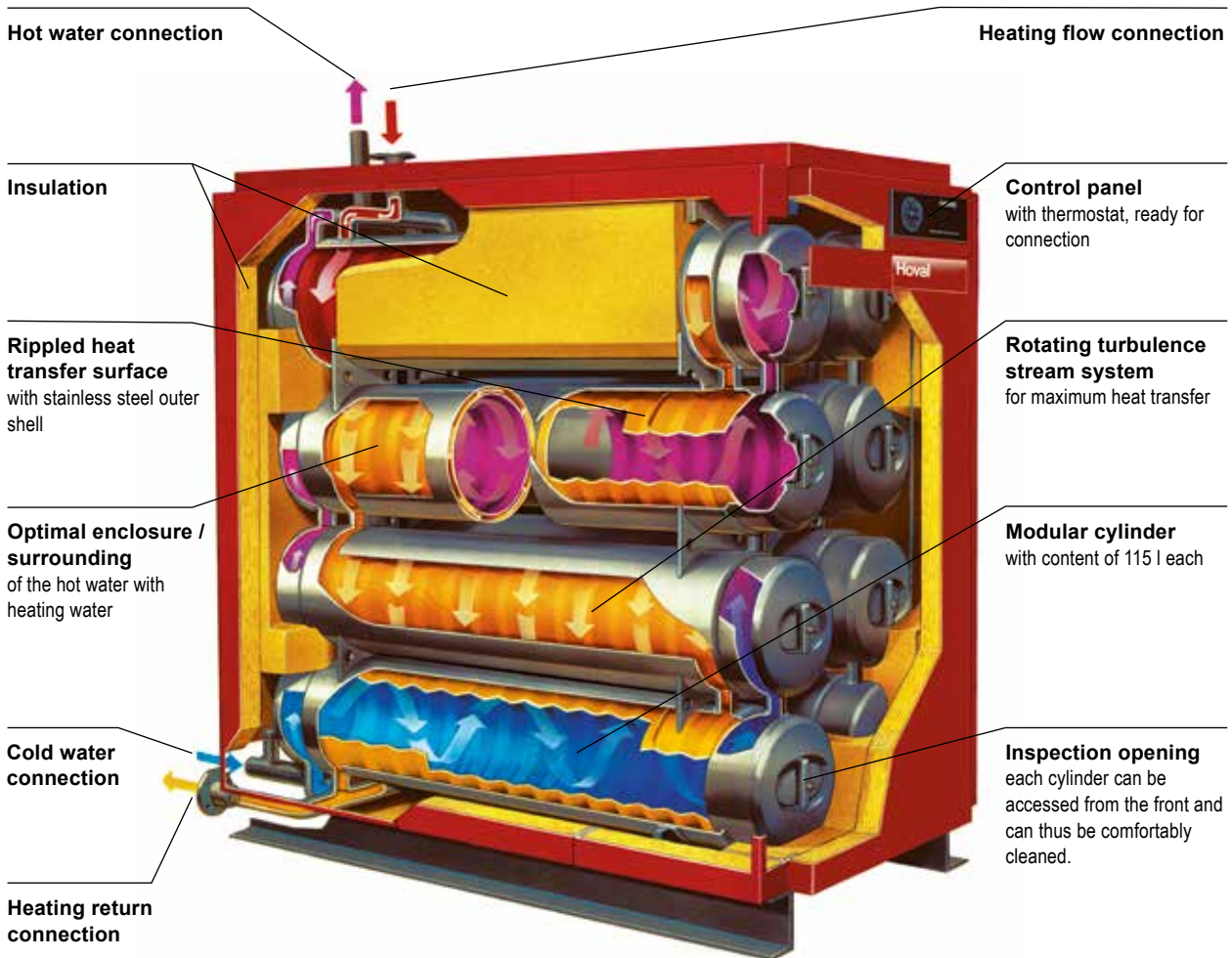


**Modul-plus**

For supplying high quantity domestic hot water demand in hotels, leisure centres, sports halls and large commercial properties. Suitable for multiple installation with up to 10,000 litres per hour from each unit.

# Modul-plus

## High output DHW calorifier



Technical data Hoval Modul-plus		(F21)	(F31)	(F41)	(F51)	(F32)	(F42)	(F52)
Max. continuous output at 60°C	l/hr*	1300	2400	3200	3950	4800	5400	7400
Max. peak output at 60°C l/10 min	min*	390	545	800	1035	1090	1480	2015
Max. continuous output at 60°C	l/hr**	1960	3300	4150	5250	6600	7000	10000
Max. peak output at 60°C l/10 min	min**	455	625	875	1185	1230	1650	2315
Width	mm	530	530	530	530	885	885	885
Height (excluding connections)	mm	1615	1615	1800	2160	1615	1800	2160
Depth (excluding connections)	mm	1905	1905	1905	1905	1905	1905	1905
Storage content	l	230	345	460	575	690	920	1150
Heating surface	m <sup>2</sup>	2.84	4.26	5.68	7.1	8.52	11.36	14.2
Weight (without casing)	kg	165	215	265	315	370	470	570

\* based on 10°C cold water feed and 80°C boiler flow temperature

subject to alterations

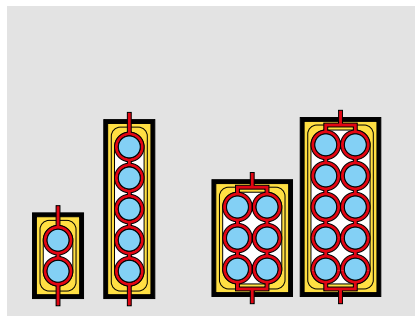
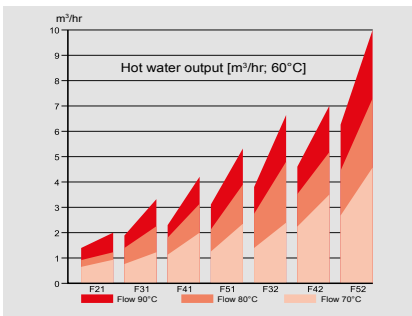
\*\* based on 10°C cold water feed and 90°C boiler flow temperature

Standard model		High pressure model *		
	Operating pressure (bar)	Test pressure (bar)	Operating pressure (bar)	Test pressure (bar)
Primary side	5	7.5	8	12
Secondary side	6	12	10	15

\* To meet the requirements of DEO spec. 036, high pressure primary water units can be fitted with a bursting disc.

# Modul-plus

## Versatile, efficient and sophisticated



### Versatile Application

The Hoval Modul-plus covers a huge range of applications - whether it is a hotel, hospital, sports centre, manufacturing plant. It is just as capable supplying a 300-unit housing development as an apartment building with 12 flats.

Modul-plus can easily be integrated with other Hoval equipment as well as other makes of boilers.



### Small Footprint

The Hoval Modul-plus requires less space than conventional calorifiers due to its high flow output. The calorifier can be placed directly next to the boiler with closely coupled pipe work. This reduces the installation and maintenance costs.



### Low Running Costs

The Hoval Modul-plus is distinguished by a high efficiency due to its contrary flow system. The low flow resistance allows operation with a single, small dimensioned loading pump. This reduces energy consumption as well as investment costs.



### The Cell Principle

Central to Hoval Modul-plus are the integrated high grade steel heating cylinders. The water content of each modular unit is 115 l and 1.42 m<sup>2</sup> of heating surface ensures an efficient heat transfer for each cylinder. The large storage capacity guarantees an extra-ordinary high 10-minute output and the generous heating surface provides a high constant output.

Modular construction allows for one or two vertical banks of horizontal cylinders with up to five cylinders stacked vertically.

The single or twin banks of cylinders are delivered with the insulated casing separately packed and have a width suitable for passing through a standard door. The insulated casing is easily fitted at site by the installer, after the units have been connected and hydraulically tested.

Each cylinder is made up from a high grade stainless steel inner vessel with a rippled surface surrounded by a mild steel outer shell containing the primary water.

The bare cylinders are wrapped in a metallic backed insulation blanket and are then cased with insulation lined steel panels with an easy clean painted.

The modular units are mounted on a common steel section base frame giving low unit floor loading and not requiring any special foundation.



### Anti Legionella

The safe temperature for water storage is considered to be a minimum of 60°C to prevent the risk of legionella bacteria contamination. For kitchen and similar duties requiring 60°C water, the supply can be direct from the calorifier. For washing and showering duties which require a 42°C supply, mixing or blending with cold water, external to the calorifier at the point of use, is required and will increase the secondary outputs by 40-50%.

The inner wall temperatures on the secondary side are only marginally lower than the heating flow temperature due to the turbulent nature of the heat transfer. Thus the cultivation of a bio-film in which legionella or other bacteria growth can occur is significantly reduced. Moreover, safe flowing of the whole contents and the prevention of dead zones is guaranteed thanks to the low hydraulics.



### High Chloride Content Approved

All Modul-plus types are approved up to a chloride content for domestic hot water with a maximum of 300 mg/litre.

Sacrificial or Correx permanent anodes must be used where water chloride content is above 100 mg/litre. These anodes are available at extra cost as needed on a case-by-case basis.



### Efficient Operation

Efficient operation is provided by the patented rippled heat transfer surface which gives rapid regeneration of secondary water temperature, even after complete draw-off. The ripple design has four key features:

- It provides an extended heat transfer surface within the compact cylinder.
- It creates turbulence on the primary water side to enhance heat transfer.
- It reduces any scale adherence to the cylinder wall by enhancing the natural flexing arising from temperature variations in the cylinder.
- It enlarges the heating surface, making it suitable for operation with lower temperature primary feed water, as provided by condensing boilers.



### Temperature Control

A panel is provided in the casing, containing a dial thermometer and a thermostat controlling the main DHW temperature. This is adjustable between 60°C - 80°C. The thermostat sensor is located to sense the average temperature throughout the bank of modules.

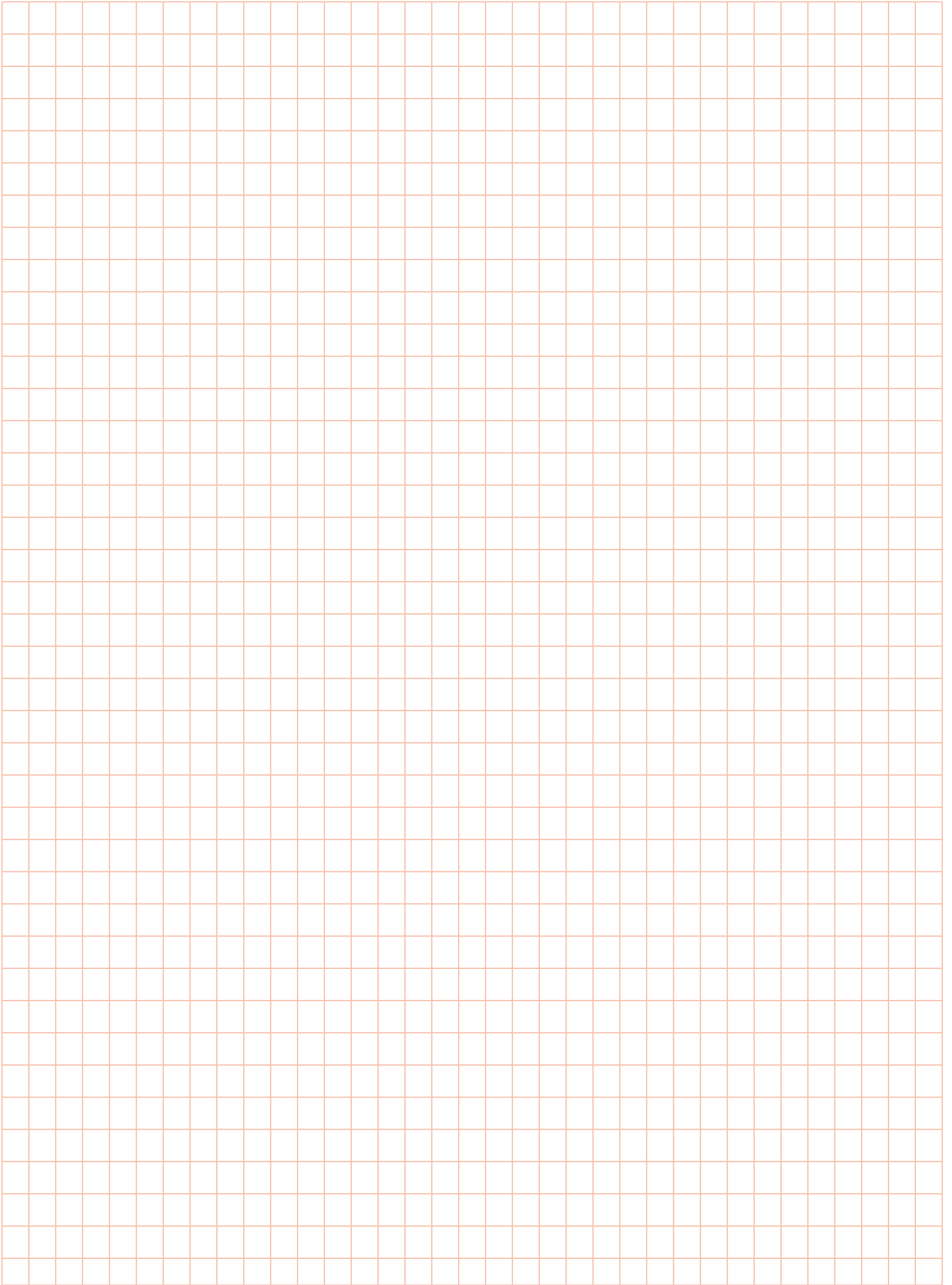
The installer is required to make the wiring connection from the control panel to the pump or regulating valve, controlling the primary water supply.



### Maintenance and Servicing

Access for internal examination is through hand hole inspection covers at each end of the cylinder. The shallow rippled surface of the stainless secondary cylinder is designed to minimise scale formation on the heat transfer surface. However where severe scaling does occur chemical cleaning may be used. After any prolonged period out of service, a thorough flushing of the secondary cylinders is recommended prior to re-commissioning. The secondary side of the unit can be fully drained via the cold feed pipe inlet at the base of the unit.

# Notes



# An expert partner



## One-stop shopping

With us you can easily incorporate gas, oil, heat pump, solar, CHP, or biomass energy solutions into your heating system.



## Technical advice

We are happy to assist you and your planning partners in developing intelligent systems, allowing you to take advantage of our expertise and the experience of our specialists.



## After sales

For specialist commissioning and maintenance of your Hoval equipment, contact our service and spares department or our service partner in your area.

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Responsibility for energy and environment

Hoval follows a policy of continued improvement and reserves the right to change specifications without notice.

# Hoval