HEAT HERO DIRECT
TECHNICAL MANUAL

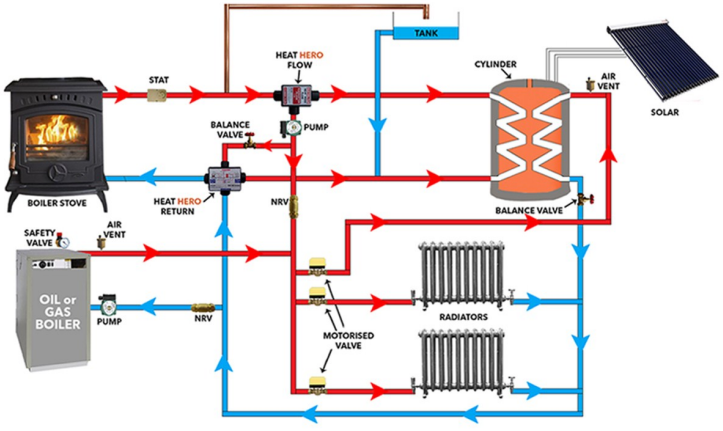
- OPEN VENTED GRAVITY FULLY PUMPED HEATING SYSTEM
- DIRECT HEAT TO RADIATORS & DHW
- NO HEAT EXCHANGER ON SOLID FUEL BOILER
- NO NEED TO DIG UP FLOORS
- NO NEED TO CHANGE CYLINDER
- BUILT IN 44KW COOLING LOOP
- EASILY INSTALLED

HEAT HERO INNOVATIVE PRODUCTS

VISIT VIDEO HEATHERO.IE

HEAT HERO GRAVITY

- HIGHER EFFICIENCY
- STRONGER CIRCULATION
- DHW FULLY PUMPED
- BETTER HEAT TRANSFER
- EASILY INSTALLED



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Understanding Solid Fuel Boilers

A solid fuel boiler can achieve twice the heat of an oil or gas boiler and will not turn off automatically. Efficiency can only be achieved with strong circulation and fast heat transfer.

This is not possible when an open vent is installed in front of the circulating pump or a heat exchanger is installed on the solid fuel boiler.

Heat Hero solves this problem and allows you get full efficiency from your solid fuel boiler.

HEAT HERO DIRECT

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HEAT HERO DIRECT DESCRIPTION

Heat Hero Direct operates at 0.7 par of pressure and has strong circulation. It is designed to control single or dual solid fuel heating systems and directly circulate the water from the solid fuel boiler to the radiators and DHW with out the use of an Heat exchanger. Safety is guaranteed with an open vent, a built in 44KW cooling loop and an optional gravity circuit to the radiators.

Up until now heat exchangers were used to control and transfer the heat from a solid fuel boiler to the radiators and domestic hot water. Because a solid fuel boiler is a non-controllable heat source a heat exchanger is a very inefficient and problematic way to transfer heat. Heat exchangers work fully efficiently on controlled heat sources like a high pressure gas boiler. Solid fuel boilers can only achieve full efficiency with direct strong circulation.

Heat Hero Direct does not use a heat exchanger. It circulates the water safely with pressure and strong circulation directly to the radiators and DHW as required. It is the most efficient controlled solid fuel heating system on the market that allows the solid fuel boiler inter-link with oil or gas boilers and operate fully efficiently within the manufacturer's recommendations.

It is important that this information booklet is read and understood fully before installation.

***This unit MUST only be installed by a fully qualified person who understands and adheres to all relevant regulations.**

CAUTION - HEAT HERO DIRECT MUST NOT BE INSTALLED AS A CONCEALED UNIT

The following instructions are given to help the installer ensure a safe and efficient

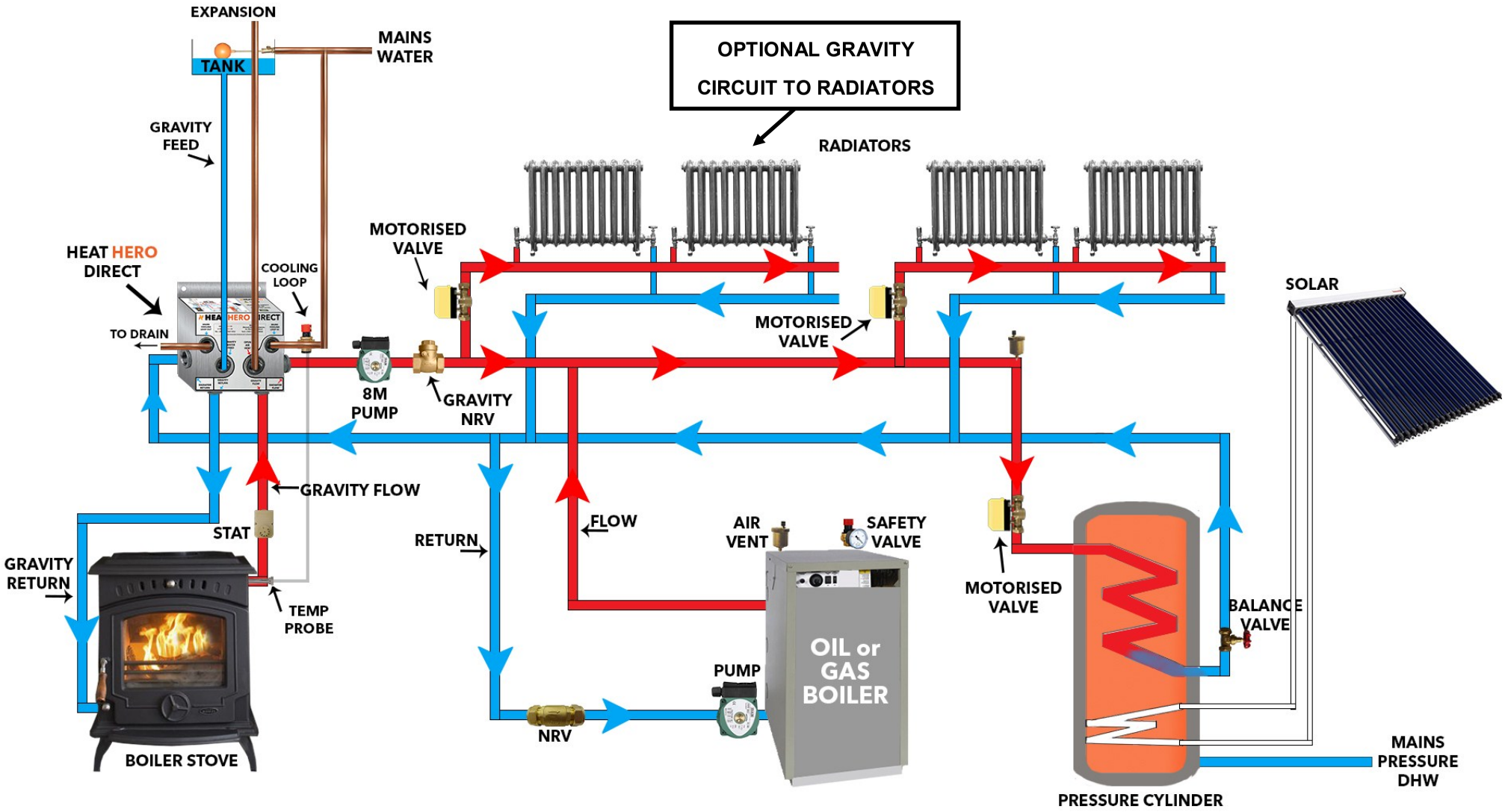
IMPORTANT - INSTRUCTIONS BEFORE LIGHTING THE STOVE:

1. Make sure the system is full of water.
2. Make sure that all of the valves are open.
3. Turn On and Off the circulating pump to clear any air in the heating system.
4. Turn On the circulating pump and light the stove slowly until radiators start to heat.
5. The solid fuel circulation pump should be turned up to the maximum speed and the pipe thermostat should be set 50°-55°.

INSTALLATION INSTRUCTIONS FOR DUAL HEATING SYSTEM:

- **Heat Hero Direct** is installed above the solid fuel boiler to allow gravity pass through the solid fuel boiler and Heat Hero Direct.
- **The pipe thermostat** must be of good quality and should be fitted as close to the solid fuel boiler as per diagrams. (Caution should be taken that the heat from the stove does not damage the workings of the pipe thermostat.)
- **The circulation pump** should be an 8m Head pump and should be fitted beside the Heat Hero Direct.
- **The Cold Feed** must be connected to the Heat Hero Direct Port 5 (see page 6).
- The **Heating Storage Tank** should be a minimum of 1m above the highest point of the heating System (e.g. above the Heat Hero Direct or above the radiators)
- **Expansion pipe** of minimum ¾ " diameter must be connected to the Heat Hero Direct Port 6 (see page 6) and piped to the heating tank as per diagram.
- **The Non return Valves** should be of good quality and installed as per the diagram.
- **Auto air vents** should be of good quality and installed as per the diagram.
- **Blow off valves** should be installed at the secondary heat source.
- **Heating Zones** If a heating system is zoned, At least one radiator zone must open automatically when the solid fuel thermostat turns on the circulating pump.
- **Pressurised Cylinder** Heat Hero Direct can be connected with solar and a DHW pressurised cylinder safely and efficiently.
- **44KW Cooling Loop** is built into the Heat Hero Direct. If the solid fuel boiler heats above 99° the liquid filled temperature probe will open the thermal safety valve and mains water will cool the gravity circuit and the solid fuel boiler.
- With Heat Hero Direct a solid fuel boiler, pressure cylinder, solar and oil or gas boiler can operate fully efficiently together within the manufacturers recommendations.

DIAGRAM SHOWING HEAT HERO DIRECT IN A DUAL HEATING SYSTEM CONNECTED TO AN OIL OR GAS BOILER WITH A PRESSURE CYLINDER, SOLAR AND RADIATORS

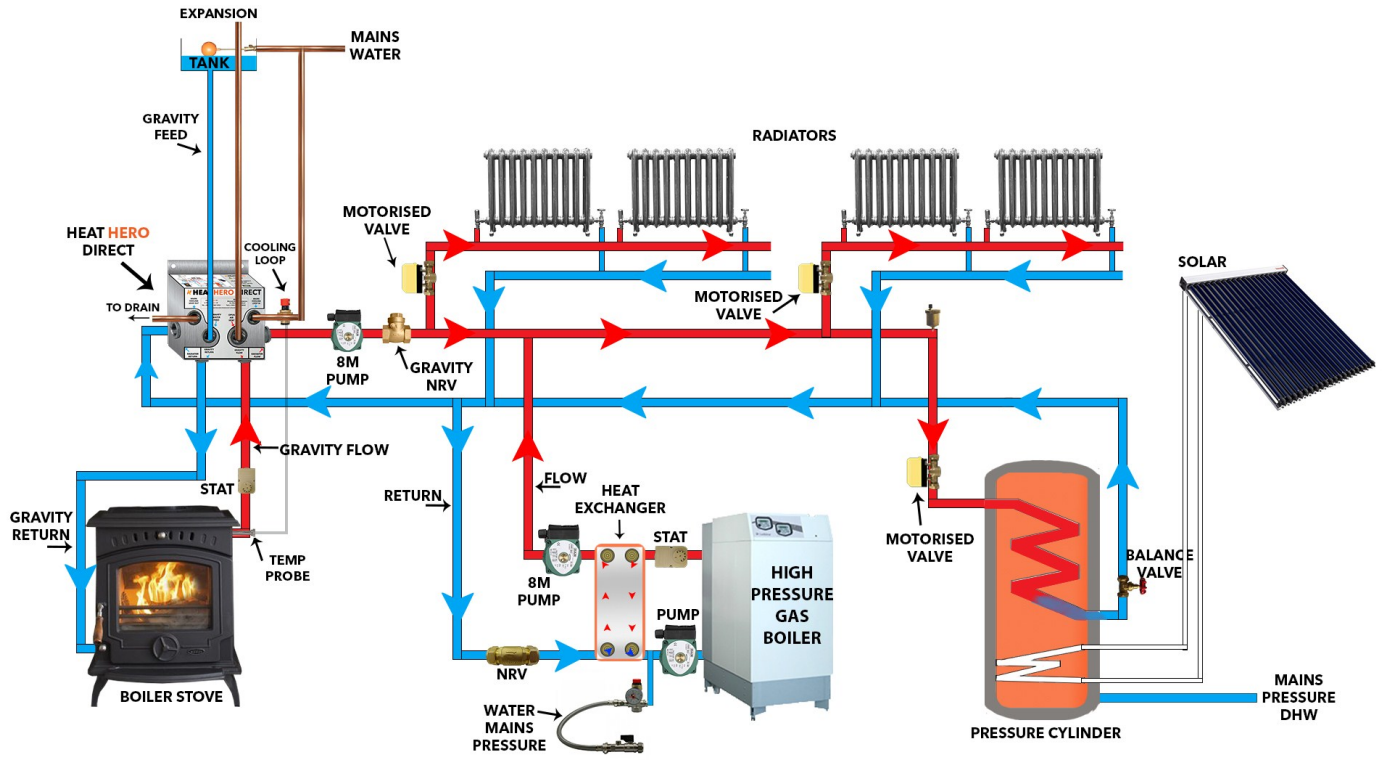


See detailed Video on website www.heathero.ie

HEAT HERO DIRECT CONNECTED TO A HIGH PRESSURE GAS BOILER

A high pressure gas boiler can be connected efficiently to a solid fuel boiler by installing a heat exchanger on the gas boiler as shown in the diagram below. A gas boiler is a controlled heat source which will allow a heat exchanger operate at its full 98% efficiency. A heat exchanger **CAN NOT** operate at its full efficiency when connected to a solid fuel boiler because a solid fuel boiler is a non-controllable heat source that can achieve twice the heat of an oil or gas boiler. When Heat Hero Direct is installed the water circulates from the Solid Fuel Boiler directly to the radiators, underfloor heating and DHW without going through a heat exchanger achieving full efficiency and good heat transfer throughout the home.

DIAGRAM SHOWS HEAT HERO DIRECT CONNECTING A SOLID FUEL BOILER TO A HIGH PRESSURE GAS BOILER USING A HEAT EXCHANGER ON THE GAS BOILER



AFRISO Thermal Safety Valve TAS 03

The AFRISO thermal safety valve TAS 03 is used for thermal protection of sealed or open solid fuel heating systems as per EN 12828 with a heating capacity of up to 100 kW (86,000 kcal). The thermal safety valve consists of a valve housing, a valve, two independent bellow type displacement probes with liquid-filled temperature probes and a pocket. The pocket is installed in the upper part of the boiler. The capillary tube (1,300 or 4,000 mm) integrated in the pocket is protected by a flexible metal hose. The thermal safety valve is connected to the hot water outlet of the water heater or to the inlet of the safety heat exchanger. If the response temperature of 99 °C is exceeded, the heat expansion of the silicone oil in the probe system causes a stroke via the bellows which opens the valve to supply cooling water from the mains system. This keeps the maximum permissible temperature in the boiler from being exceeded. If one of the temperature probes fails, the second temperature probe provides redundancy. Correct operation of the thermal safety valve TAS 03 can be verified quickly and easily by simply pressing the valve head. TAS 03 can be mounted horizontally or vertically. It must be ensured that hazards caused by hot water or vapour at the free outlet of the discharge line into the funnel are excluded. The thermal safety valve TAS 03 is suitable for operating temperatures from 5 to 115 °C and an operating pressure of up to 10 bar. Connections include two G¾ female threads for the pocket and a G½ male thread.

44 Kw Stainless Steel Heat Exchanger used for Cooling Loop

Number of plates 20
Length / Width / Height
(without connections, in mm) 191 / 73 / 51,8
Max. flow 4 m³ / h
Connecting height 12 mm
Capacity 0,018 l per plate = 0,36 Litre
Effective exchange surface 0,012 m² per plate = ca. 0,24 m²
Temperature range -195°C up to +225 °C
Temperature range 20 bar
Power max. 44 kW
Plate material stainless steel AISI 304
Connecting piece material stainless steel AISI 304
Circulation F1 -> F3 / F4 -> F2

GENERAL TECHNICAL INFORMATION HEAT HERO DIRECT

TECHNICAL DATA – HEAT HERO DIRECT

Maximum test pressure	6 Bar
Maximum work pressure	4 Bar
Maximum Heat Capacity	44 KW
Material	Mild Steel

Overall Length	205 mm
Overall Depth	85 mm
Overall Height	180 mm
Overall Weight	2.8 KG

PORT 1	1'' BSP FEMALE	Gravity Return
PORT 2	1" BSP FEMALE	Gravity Flow
PORT 3	1" BSP FEMALE	Radiator Flow
PORT 4	1" BSP FEMALE	Radiator Return
PORT 5	3/4'' BSP FEMALE	Gravity Water Feed
PORT 6	1'' BSP FEMALE	Open Air Vent
PORT 7	1/2" BSP FEMALE	Mains Cooling Loop Out
PORT 8	1/2" BSP FEMALE	Mains Cooling Loop In