



Alfa Laval Hot Water Loop

Water heating and circulation system

Introduction

The Alfa Laval Hot Water Loop is a steam-heated system that delivers heat to equipment in marine, offshore and onshore applications. It ensures a constant temperature and can be used anywhere hot water is needed.

Application

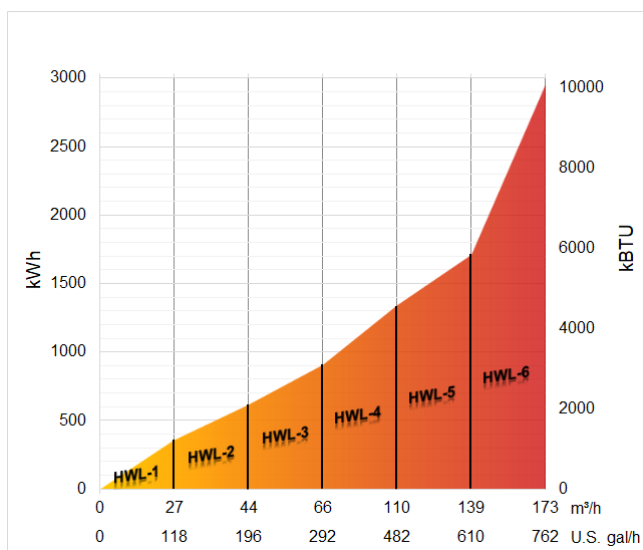
The Hot Water Loop can be used in numerous applications, but it is commonly applied in engine preheating or fresh water generation. By keeping the water temperature consistent, it ensures maximum fresh water production at all times.

Benefits

- Easy and inexpensive installation
- Flexible and compact design
- Reliable operation due to self-adjusting steam regulation equipment
- Easy operation and maintenance
- Reduced time and cost associated with preheating of engines or other equipment

Capacity range

The Hot Water Loop (HWL) comes in six sizes, covering the capacity ranges shown here.



Design

The Hot Water Loop is configured according to customer need using one main module and two optional modules.

The main module consists of:

- Plate heat exchanger with insulation
- Steam temperature control valve and controller
- Steam trap



The two optional modules consist of:

- Hot water pump and motor with manometer set
- Motor starter



- Bypass piping system with isolation valves



Installation

The Hot Water Loop is delivered as a plug-and-play system. It is intended to be installed in connection with a heating system, acting either as a supplement to the system or as the main heating source.



- | | |
|--------------------------|----------------------|
| A. Hot water inlet | B. Hot water outlet |
| C. Steam inlet | D. Condensate outlet |
| E. Preheating connection | |

Working principle

The water in the Hot Water Loop is heated by means of steam. The amount of steam is regulated by a steam control valve, based on the set point of a temperature controller mounted in the hot water outlet line. A hot water pump ensures a constant flow to the Hot Water Loop heat exchanger and makes recirculation possible when the engine is at low load or stopped. This pump must be running when the Hot Water Loop is used for engine preheating. A blinded flange connection makes it possible to connect the Hot Water Loop for various heating or preheating purposes. Four example setups are shown in the figures below.

- | | |
|-------------------------------------|----------------------------------|
| 1. Hot Water Loop / preheater pump | 2. Hot Water Loop heat exchanger |
| 3. Fresh water generator | 4. Hot Water Loop bypass valve |
| 5. Hot water throttling valve | 6. Preheating valve |
| 7. Engine temperature control valve | 8. Main cooler |
| 9. Engine hot water pump | 10. Engine |

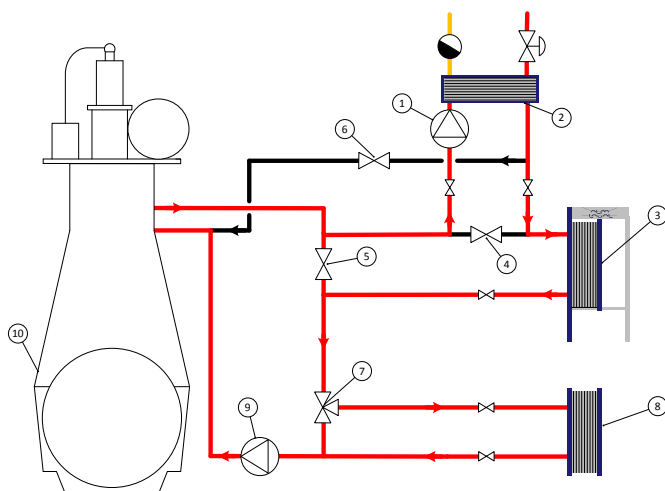


Fig. 1 — Fresh water production with engine heat and steam

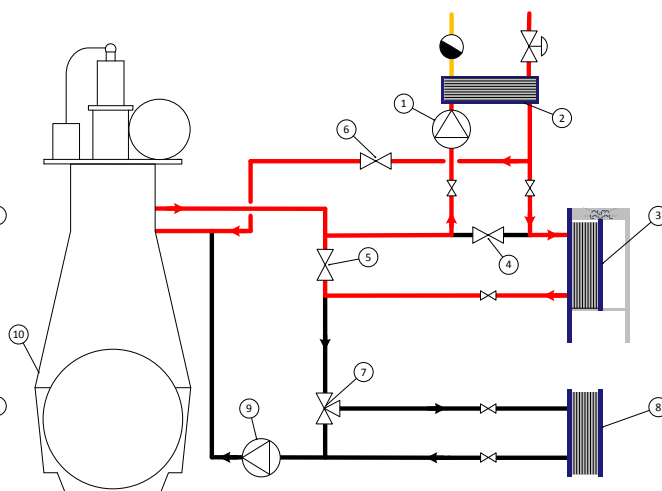


Fig. 2 — Engine preheating and fresh water production with steam

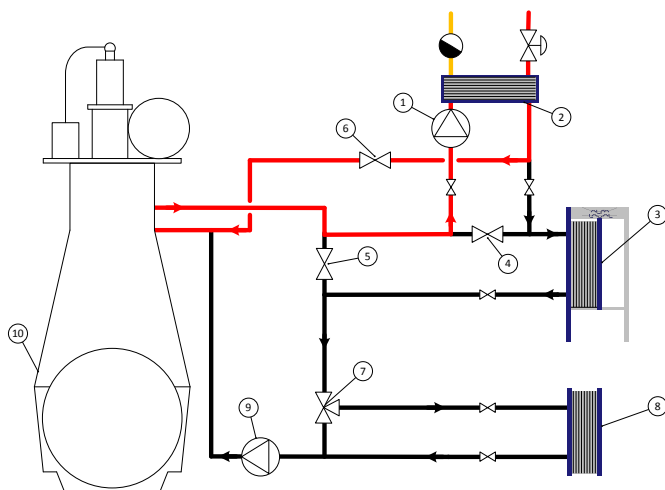


Fig. 3 — Engine preheating with steam

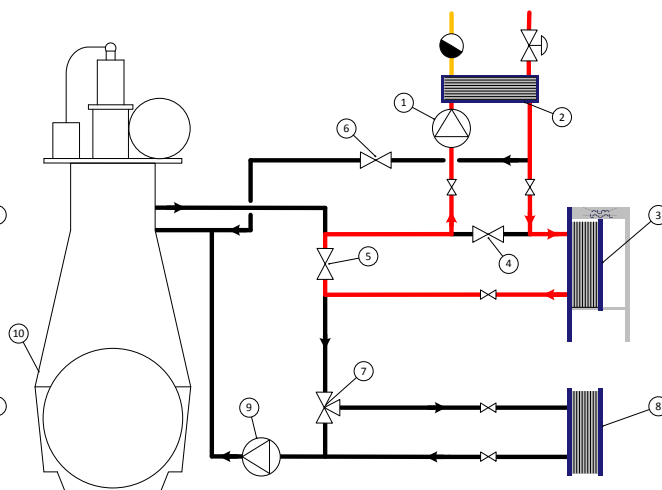
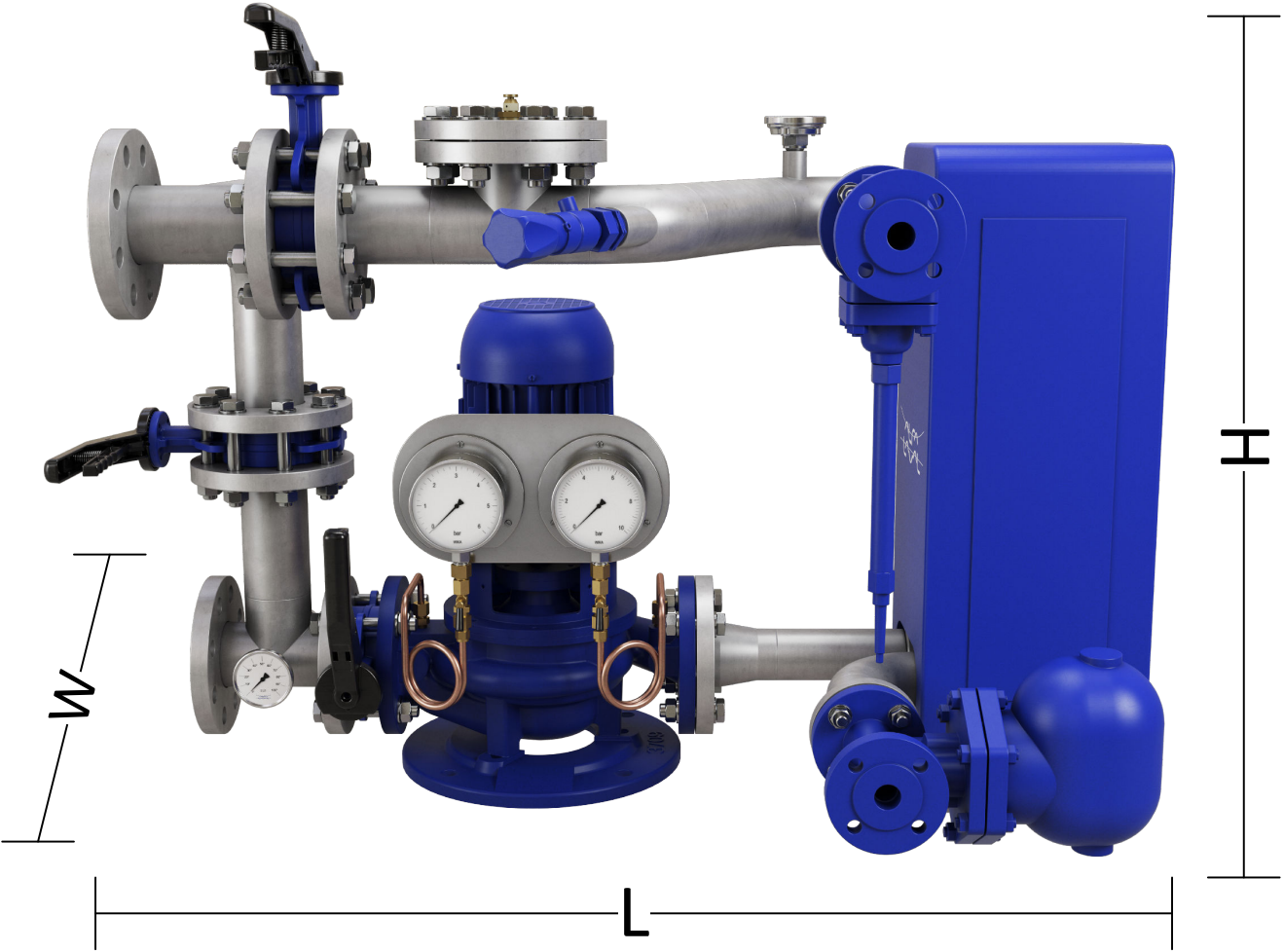


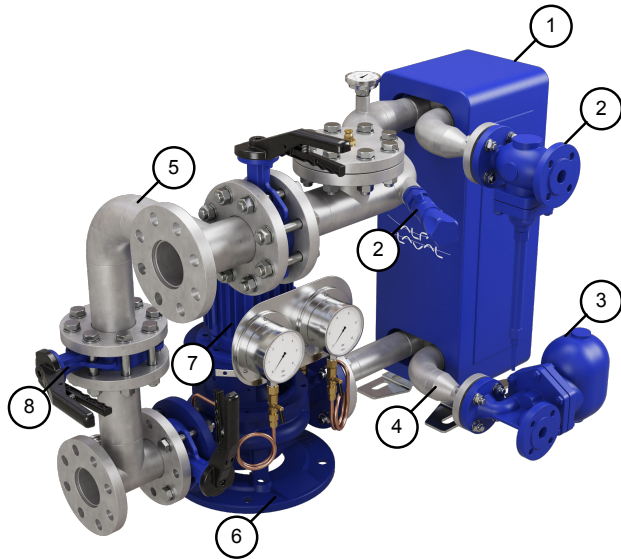
Fig. 4 — Fresh water production with steam

Dimensions



Type	Hz	Units	Module version dimensions [L x W x H] (Weight)		
			Plate heat exchanger	Plate heat exchanger with pump and motor	Plate heat exchanger with pump, motor and bypass
HWL-1	50	mm (kg)	911 x 635 x 769 (81)	911 x 707 x 769 (158)	1237 x 70 x 843 (195)
		in (lbs)	35.9 x 25 x 30.3 (178.6)	35.9 x 27.8 x 30.3 (348.3)	48.7 x 2.8 x 33.2 (429.9)
	60	mm (kg)	911 x 635 x 769 (81)	911 x 707 x 769 (158)	1237 x 70 x 843 (195)
		in (lbs)	35.9 x 25 x 30.3 (178.6)	35.9 x 27.8 x 30.3 (348.3)	48.7 x 2.8 x 33.2 (429.9)
HWL-2	50	mm (kg)	1039 x 668 x 784 (97)	1039 x 737 x 784 (183)	1365 x 737 x 858 (223)
		in (lbs)	40.9 x 26.3 x 30.9 (213.8)	40.9 x 29 x 30.9 (403.4)	53.7 x 29 x 33.8 (491.6)
	60	mm (kg)	1000 x 661 x 769 (96)	940 x 37 x 769 (177)	1326 x 737 x 843 (214)
		in (lbs)	39.4 x 26 x 30.3 (211.6)	37 x 1.5 x 30.3 (390.2)	52.2 x 29 x 33.2 (471.8)
HWL-3	50	mm (kg)	1218 x 729 x 784 (151)	1218 x 849 x 784 (276)	1544 x 849 x 858 (317)
		in (lbs)	48 x 28.7 x 30.9 (332.9)	48 x 33.4 x 30.9 (608.5)	60.8 x 33.4 x 33.8 (698.9)
	60	mm (kg)	1179 x 721 x 769 (150)	1179 x 849 x 769 (270)	1505 x 849 x 843 (308)
		in (lbs)	46.4 x 28.4 x 30.3 (330.7)	46.4 x 33.4 x 30.3 (595.2)	59.3 x 33.4 x 33.2 (679)
HWL-4	50	mm (kg)	1302 x 924 x 1189 (249)	1415 x 1004 x 1270 (475)	1778 x 1004 x 1381 (543)
		in (lbs)	51.3 x 36.4 x 46.8 (549)	55.7 x 39.5 x 50 (1047.2)	70 x 39.5 x 54.4 (1197.1)
	60	mm (kg)	1302 x 924 x 1189 (249)	1415 x 1004 x 1270 (475)	1778 x 1004 x 1381 (543)
		in (lbs)	51.3 x 36.4 x 46.8 (549)	55.7 x 39.5 x 50 (1047.2)	70 x 39.5 x 54.4 (1197.1)
HWL-5	50	mm (kg)	1349 x 924 x 1219 (302)	1450 x 1050 x 1319 (641)	1863 x 1050 x 1411 (716)
		in (lbs)	53.1 x 36.4 x 48 (665.8)	57.1 x 41.3 x 51.9 (1413.2)	73.3 x 41.3 x 55.6 (1578.5)
	60	mm (kg)	1349 x 924 x 1189 (286)	1415 x 1004 x 1270 (511)	1778 x 1004 x 1381 (579)
		in (lbs)	53.1 x 36.4 x 46.8 (630.5)	55.7 x 39.5 x 50 (1126.6)	70 x 39.5 x 54.4 (1276.5)
HWL-6	50	mm (kg)	1417 x 1020 x 1219 (346)	1450 x 1147 x 1319 (691)	1863 x 1147 x 1411 (767)
		in (lbs)	55.8 x 40.2 x 48 (762.8)	57.1 x 45.2 x 51.9 (1523.4)	73.3 x 45.2 x 55.6 (1690.9)
	60	mm (kg)	1417 x 1020 x 1219 (346)	1450 x 1147 x 1319 (691)	1863 x 1147 x 1411 (767)
		in (lbs)	55.8 x 40.2 x 48 (762.8)	57.1 x 45.2 x 51.9 (1523.4)	73.3 x 45.2 x 55.6 (1690.9)

Material data



Parts	Material
1. Plate heat exchanger	Stainless steel
2. Steam valve and controller	
Body (HWL-1/-2/-3/-4)	Carbon steel (painted)
Body (HWL-5/-6)	SG Iron (painted)
Seat	Stainless steel
Controller pocket	Stainless steel
3. Steam trap	
Body	SG iron (painted)
Internals	Stainless steel
4. Heat exchanger connections	Stainless steel
5. Pipes	Carbon steel (painted)
6. Pump	
House	Cast iron
Impeller	Aluminium bronze
Shaft	Stainless steel
7. Motor	Cast iron (painted)
8. Butterfly valves	
Body	Cast Iron (painted)
Disc	Stainless steel
Seat	Nitrile rubber
Base frame (HWL-4,-5,-6)	Carbon steel (painted)

Electrical data

Power supply:

- 50 Hz : 3 x 220–240 V / 3 x 380–415 V / 3 x 600–690 V
- 60 Hz : 3 x 220 V / 3 x 440–480 V / 3 x 690 V

Certifications and classification

Alfa Laval hot water loop are manufactured in accordance with following standards, rules and regulations:

- Pressure Equipment Directive (PED) 2014/68/EU
- IEC 60092 standard for electrical installations on ships
- ISO 9001 standard for quality management systems
- ISO 14001 standard for environmental management systems
- Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships
 - Supplier Declaration of Conformity (SDoC)
 - Material declaration (MD)

The Hot Water Loop has type, design or drawing approval from all major members of the International Association of Classification Societies (IACS).

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