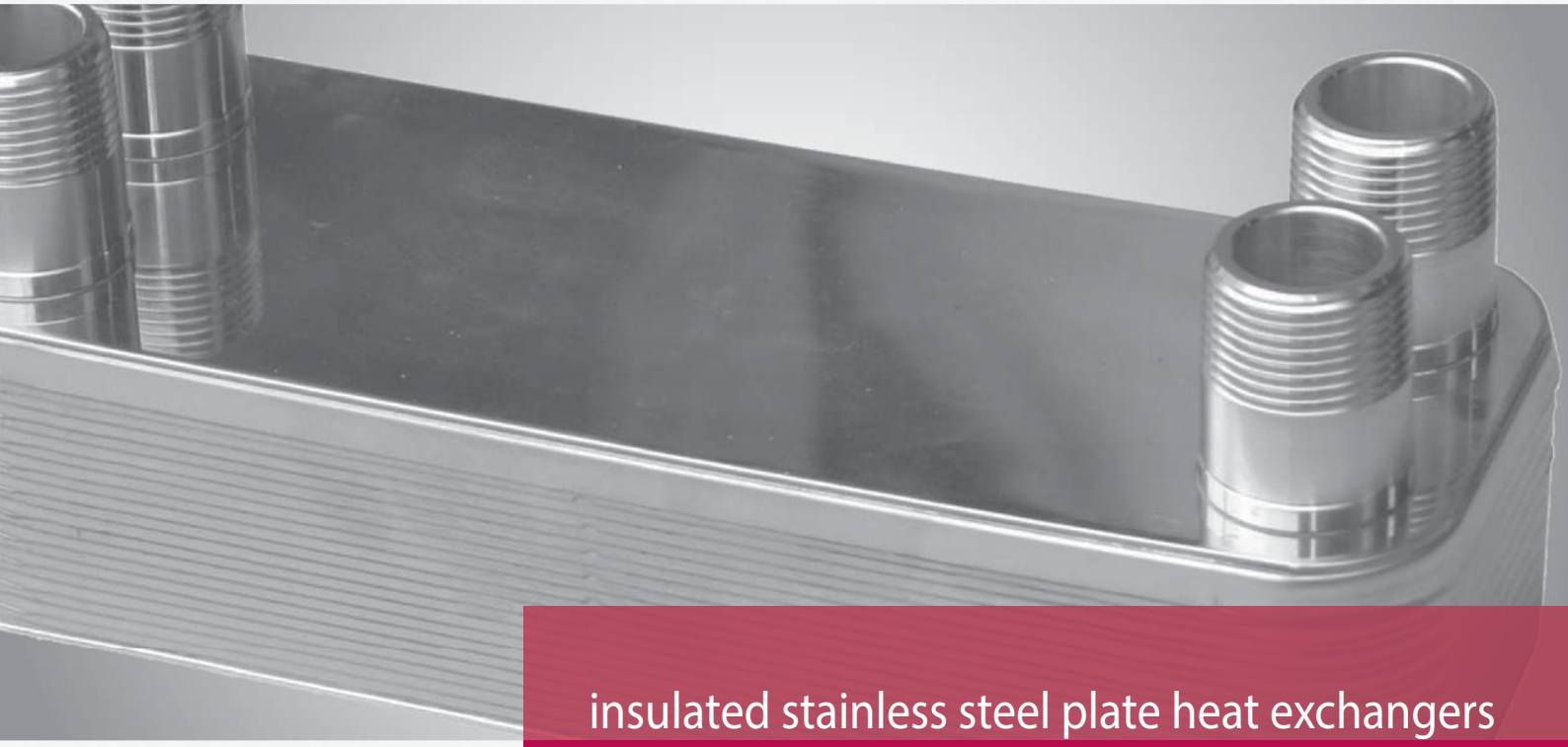
TECHNICAL CATALOGUE

Plate **Heat Exchangers**



insulated stainless steel plate heat exchangers
fresh water stations

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Energy-saving solutions

DV193 Plate Heat Exchanger

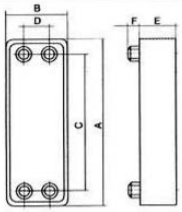
Plate heat exchangers designed for effective heat transfer between various fluids. They are made of thin pressed stainless-steel plates and soldered with brass. Thermal insulation in EPDM rubber that resists temperatures up to 175 C in short term is added on the heat exchangers, reducing thermal loss.

DV193 line is suitable primarily for **thermal stores or storage water heaters** heated by **solar thermal systems**.

Technical Data

MATERIAL	AISI 316L
MAX. WORKING PRESSURE	29.4 bar
MAX. WORKING TEMPERATURE	150°C permanent, 175°C short term (1hour)
CONNECTION DEIMENSIONS	3/4“ M

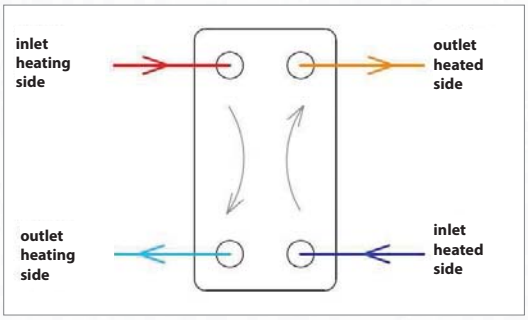
Drawing



Dimensions with insulation

HEIGHT (A)	223 mm
WIDTH (B)	113 mm
PITCH (C)	154 mm
PITCH (D)	42 mm
THICKNESS (E)	by model see table below
SOCKET HEIGHT (F)	20 mm

Connection Diagram

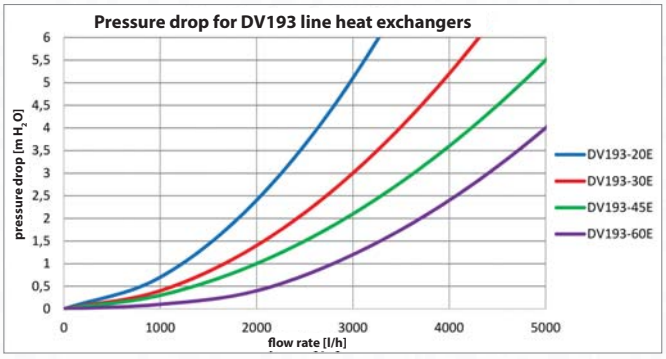


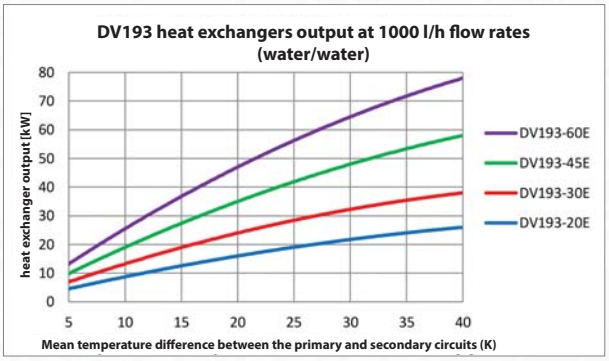
Models

		DV193-20E	DV193-30E	DV193-45E	DV193-60E
NUMBER OF PLATES	--	20	30	45	60
HEAT TRANSFER SURFACE AREA	sqm	0.28	0.42	0.63	0.84
FLUID VOLUME	l	0.32	0.45	0.62	0.87
WEIGHT - WITH/WITHOUT INSULATION	kg	1.7/1.6	2.2/2.1	2.9/2.8	3.7/3.6
THICKNESS (E)	mm	85	109	144	179
MAX. RECOMMENDED SURFACE AREA OF SOLAR PANELS*	sqm	6	10	16	21
CODE	--	9548	9549	9550	9551

** at Δt_{mean} = 10 K, the primary side – Solarten, flow rate = 1 l/min per sqm, secondary side = water, flow rate = min. 1000 l/h*

Graphs





DV285 Plate Heat Exchanger

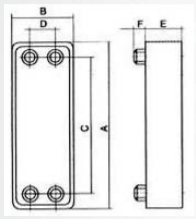
Plate heat exchangers designed for effective heat transfer between various fluids. They are made of thin pressed stainless-steel plates and soldered with brass. Thermal insulation in EPDM rubber that resists temperatures up to 175 C in short term is added on the heat exchangers, reducing thermal loss.

DV285 line is suitable primarily for **pool heating by a solar thermal system, boiler or a heat pump, and for instantaneous DHW heating (in a thermal store or boiler).**

Technical Data

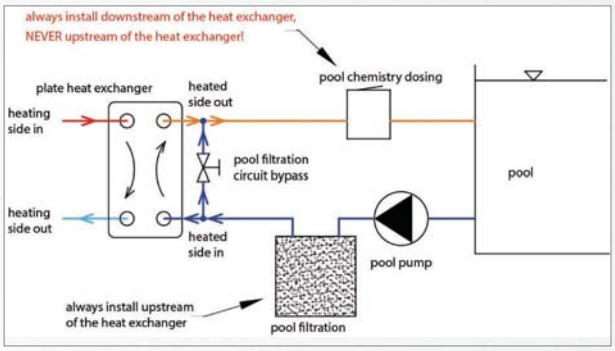
MATERIAL	AISI 316L
MAX. WORKING PRESSURE	29.4 bar
MAX. WORKING TEMPERATURE	150°C permanent, 175°C short term (1hour)
CONNECTION DEIMENSIONS	1" M

Drawing



Dimensions with insulation	
HEIGHT (A)	310 mm
WIDTH (B)	130 mm
PITCH (C)	230 mm
PITCH (D)	50 mm
THICKNESS (E)	by model see table below
SOCKET HEIGHT (F)	18 mm

Connection Diagram

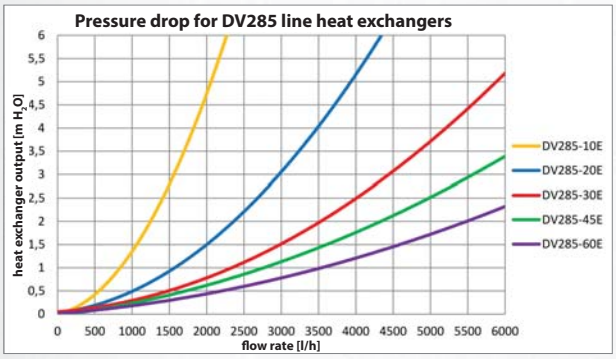


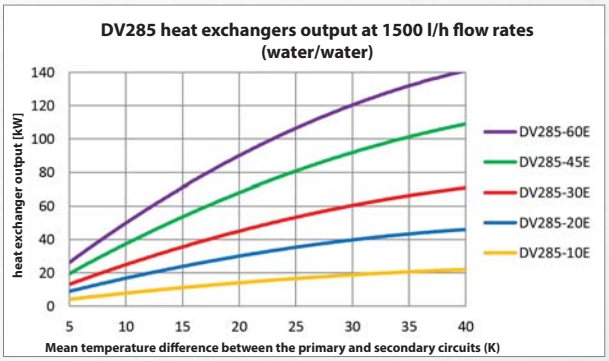
Models

		DV285-10E	DV285-20E	DV285-30E	DV285-45E	DV285-60E
NUMBER OF PLATES	--	10	20	30	45	60
HEAT TRANSFER SURFACE AREA	sqm	0.27	0.54	0.81	1.22	1.62
FLUID VOLUME	l	0.34	0.60	0.85	1.28	1.65
WEIGHT - WITH/WITHOUT INSULATION	kg	2.4/2.3	3.3/3.2	5.1/5.0	5.5/5.4	7.0/6.9
THICKNESS (E)	mm	79	102	129	160	203
MAX. RECOMMENDED SURFACE AREA OF SOLAR PANELS*	sqm	4	10	15	23	31
CODE	--	9552	9553	9554	9555	9556

** at Δt_{mean} = 10 K, the primary side – Solarten, flow rate = 1 l/min per sqm, secondary side = water, flow rate = min. 1500 l/h*

Graphs





DV503 Stainless Steel Plate Heat Exchangers

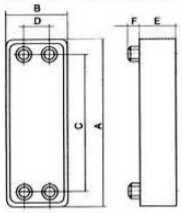
Plate heat exchangers designed for efficient heat transfer between various fluids. They are made of thin, pressed high quality stainless-steel sheets and soldered with copper. In order to reduce heat loss they are fitted with EPDM insulation that resists up to 175°C temperature in short term.

Considering its design, the DV503 series is suitable for **continuous hot water heating or large solar thermal systems**. We calculate the heat exchanger size on an individual basis upon request, based on specific parameters of the heating system in question.

Technical Data

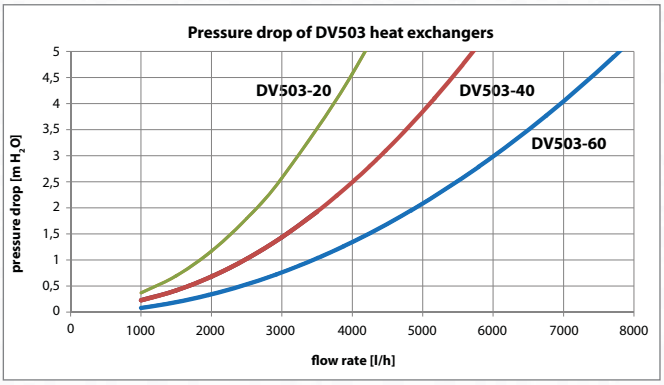
MATERIAL	AISI 316L
MAX. WORKING PRESSURE	12 bar
MAX. WORKING TEMPERATURE	permanent 150 °C, short term (1 h) 175 °C
CONNECTION SIZE	1" M

Drawing



Dimensions with insulation	
HEIGHT (A)	533 mm
WIDTH (B)	153 mm
PITCH (C)	445 mm
PITCH (D)	70 mm
THICKNESS (E)	by model see chart below
PORT LENGTH (F)	23 mm

Chart



Models

		DV503-20E	DV503-40E	DV503-60E
NUMBER OF PLATES	--	20	40	60
HEAT TRANSFER SURFACE AREA	sqm	1.1	2.2	3.3
FLUID VOLUME	l	1.2	2.3	3.4
WEIGHT WITH/WITHOUT INSULATION	kg	11/9	14/13	19/17
THICKNESS (E)	mm	105	146	195
CODE	--	11 045	10 495	10 496

DV800 Stainless Steel Plate Heat Exchangers

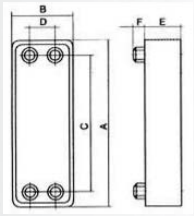
Plate heat exchangers designed for efficient heat transfer between various fluids. They are made of thin, pressed high quality stainless-steel sheets and soldered with copper. In order to reduce heat loss they are fitted with EPDM insulation that resists up to 175°C temperature in short term.

Considering its design, the DV800 series is suitable for **large solar thermal systems, district heating transfer stations, or high-output systems**. We calculate the heat exchanger size on an individual basis upon request, based on specific parameters of the heating system in question.

Technical Data

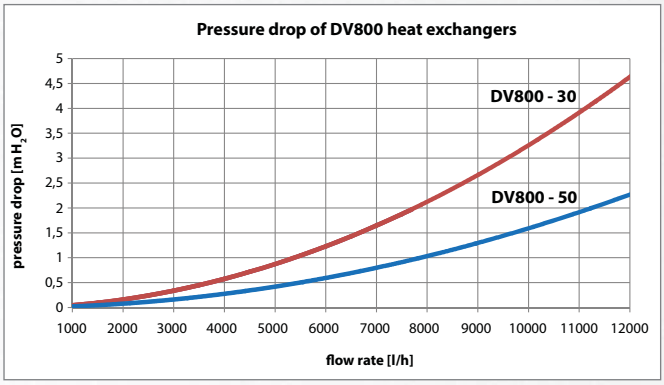
MATERIAL	AISI 316L
MAX. WORKING PRESSURE	by model see chart below
MAX. WORKING TEMPERATURE	permanent 150 °C, short term (1 h) 175 °C
CONNECTION SIZE	2“ M

Drawing



Dimensions with insulation	
HEIGHT (A)	605 mm
WIDTH (B)	310 mm
PITCH (C)	475 mm
PITCH (D)	185 mm
THICKNESS (E)	by model see chart below
PORT LENGTH (F)	35 mm

Chart



Models

		DV800-30E	DV800-50E
NUMBER OF PLATES	--	30	50
HEAT TRANSFER SURFACE AREA	sqm	4.8	8.0
FLUID VOLUME	l	4.4	7.7
WEIGHT WITH/WITHOUT INSULATION	kg	34/31	47/44
THICKNESS (E)	mm	115	165
MAX. WORKING PRESSURE	bar	10	6
CODE	--	10 490	10 491

CS FRESH Water Station

Fresh water station designed to supply instantaneous hot water through a plate heat exchanger with electronic temperature control, supplying hot water of the desired temperature at any flow. The flowrate, temperature and output are displayed on the integrated FWC3 controller. Domestic hot water passing through the fresh water station is heated from heating water in a thermal store that gets heated by a solar thermal system, heat pump or a wood-, pellet- or biomass boiler etc. It can be fitted with a DHW recirculation pump as an option.

Technical Data

FLOW RATE	2 – 40 l/min
MAX. PERMISSIBLE PRESSURE	6 bar
WORKING TEMPERATURE	2 ÷ 95 °C
DHW PRESSURE DROP at 40 l/min. flow rate	0.5 bar
VOLTAGE	230 V 50 Hz
MAX. POWER INPUT	200 W
CONNECTION POINTS	3/4“ M
DIMENSIONS	398 × 500 × 207 mm

Tankless water heating eliminates formation of Legionella bacteria and minimizes any heat loss.

Models

CODE 9717 – incl. DHW recirculation

CODE 9913 – no DHW recirculation

Components

- **Plate heat exchanger** made of AISI 316 stainless steel. Thanks to a large heat transfer surface, a large amount of heat can be transferred. The heat exchanger can be dismounted easily for servicing or cleaning through the opening in the insulation on the right-hand side.
- Primary circuit **circulation pump** with special electronics that controls its speed, from the min. 12% speed to the max. selected speed, ensuring the desired temperature to be maintained (e.g. 45°C).
- **Momentary flow rate** is measured by the VFS digital flowmeter, and the pump speed is adjusted by the controller so that hot water of the desired temperature can be supplied by the fresh water station under any flow rate.

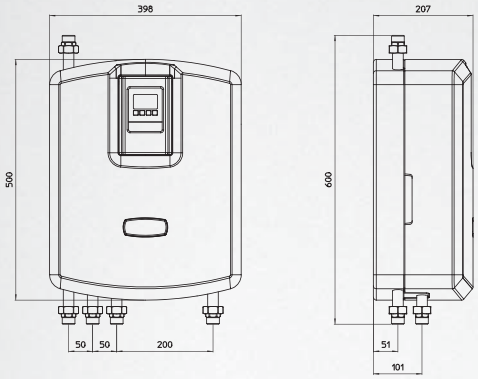
- **FWC3 Controller**
  - Clear graphic and text information
  - Simple display of measured values
  - Monitoring and analysis of system behaviour
  - Vast menu with interactive descriptions
  - Part of menu can be locked
  - Special functions for limiting heat loss through DHW recirculation
- Connection pipes
- Metal mounting plate
- Thermoinsulating case
- Recirculation pump (option)

TECHNICAL DATA FOR FWC3 CONTROLLER

CONSUMPTION	2 VA
SWITCHING OUTPUT	
ELECTRONIC RELAY R1 MECHANICAL RELAY R2	min. 20 W, max. 120 W for AC3 max. 460 W for C1 / 185 W for AC3
IP RATING	IP40
PROTECTION CLASS	II
SENSOR INPUTS	3x Pt1000, 1x flowmeter with a PT1000 sensor
DISPLAY	fully graphic, 128 × 64 dots

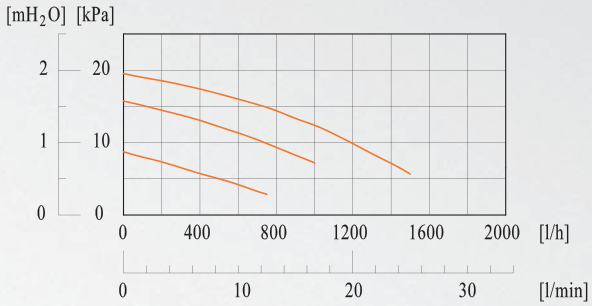
The Fresh Water Station can be installed directly on a tank or a nearby wall. The installation is quick and simple.

Dimensions

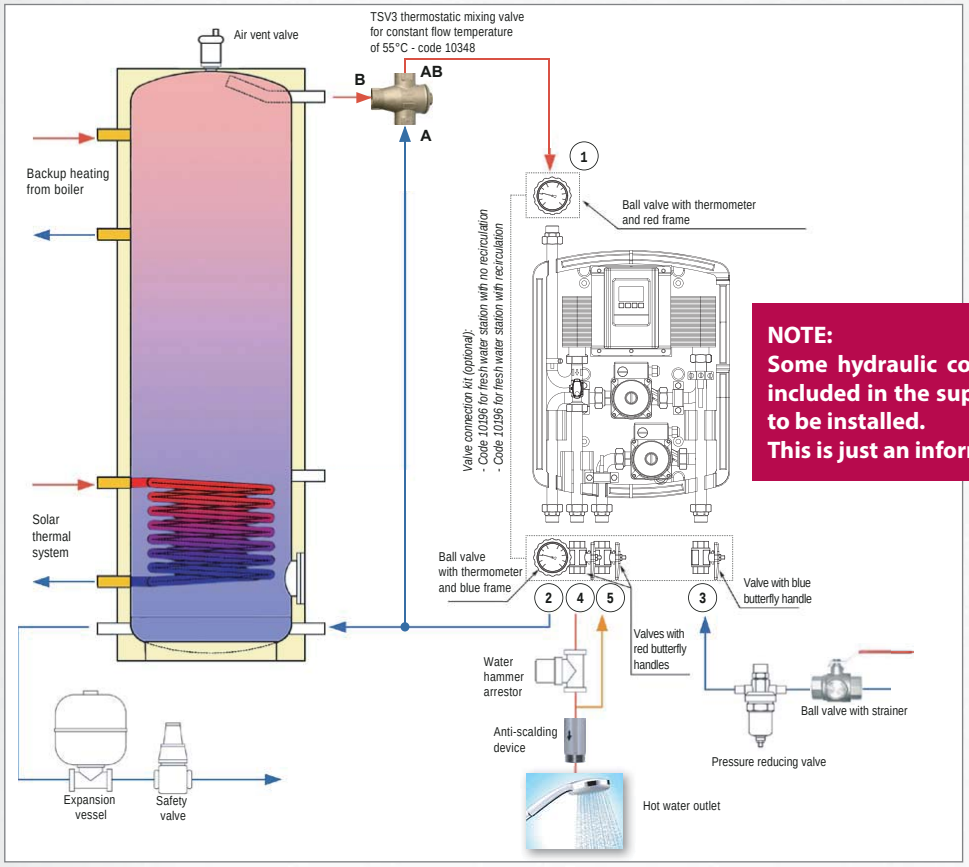


Pressure Drop Chart

- for optional recirculation pump



Connection Diagram



NOTE:
Some hydraulic components in this diagram are not included in the supply but are strongly recommended to be installed.
This is just an informative diagram.

① Primary circuit inlet

The temperature into the storage tank must be at least by 5K higher than the desired DHW temperature. Higher temperature difference will allow to extend the delivery time of hot water. Do not let the tank flow temperature exceed 70°C (at the inlet into a pump station from a thermal store or from a thermostatic valve) in order to avoid limescale formation on the secondary side of the plate exchanger, or install a thermostatic valve with a max. flow temperature up to 70°C (recommended TSV3B 55°C – code 10348) if necessary.

② Primary circuit outlet

Due to the large plate heat exchanger and electronic pump speed control, the returning water is of low temperature. That increases the efficiency of the solar thermal system and the COP of the heat pump used. This all brings also bigger volumes of hot water available.

③ Secondary circuit inlet - cold water

④ Secondary circuit outlet - hot water

⑤ Recirculation (model code 9717 only)

KITS WITH PLATE HEAT EXCHANGERS

KITS WITH WILO YONOS CIRCULATION PUMP

DV193 or DV285 plate heat exchangers in kit with a high efficiency WILO YONOS PARA pump

Heat exchangers with high efficiency circulation pumps	Code
DV193-20E, insulated, and Wilo Yonos Para 25/1-6 circulation pump	13 198
DV193-30E, insulated, and Wilo Yonos Para 25/1-6 circulation pump	13 199
DV193-45E, insulated, and Wilo Yonos Para 25/1-6 circulation pump	13 200
DV193-60E, insulated, and Wilo Yonos Para 25/1-6 circulation pump	13 201
DV285-10E, insulated, and Wilo Yonos Para 25/1-6 circulation pump	13 202
DV285-20E, insulated, and Wilo Yonos Para 25/1-6 circulation pump	13 203
DV285-30E, insulated, and Wilo Yonos Para 25/1-6 circulation pump	13 204
DV285-45E, insulated, and Wilo Yonos Para 25/1-6 circulation pump	13 205
DV285-60E, insulated, and Wilo Yonos Para 25/1-6 circulation pump	13 206

CONNECTION KITS TO SOLAR PUMP STATIONS

DV193 plate heat exchanger, circulation pump and insulated connection piping.

The kits differ in the heat exchanger output and circulation pump model. The kits with Wilo ST 25/7 pump are suitable for solar DHW heating in storage water heaters, the kits with Wilo Star Z NOVA pumps are intended to heat water for space heating in thermal stores.

Heat exchangers with solar pump station connection kit	Code
DV193-20E with Wilo ST 25/7 pump and pump station connection kit	10 530
DV193-30E with Wilo ST 25/7 pump and pump station connection kit	10 531
DV193-20E with Wilo Star Z NOVA pump and pump station connection kit	10 532
DV193-30E with Wilo Star Z NOVA pump and pump station connection kit	10 533

Kit with a heating water pump.

Kit with a drinking water pump.

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