

SEPARATION UNIT

SERIES SKx100



SKP100



SKS100



SKC100

PRODUCT DESCRIPTION

The Separation units are used in systems with one or two heat sources, where hydraulic system separation (separation of fluids in different sub systems) is needed.

ESBE SKP100 is intended for installation where a heating source, such as a solid fuel boiler, is working together with another heating source, for example a gas or oil boiler, in a heating system and needs to be separated from each other. SKS100 is dedicated to potable water preparation with smaller heating sources, such as water fireplaces, wood stoves and pellet boilers. The SKC100 has a combined function of SKP100 and SKS100.

Hydraulic system separation (separation of multiple heat-sources into different sub systems) is required by Italian INAIL regulations. The hydraulic system separation is necessary when the nominal power sum of the two heating generators working in the same heating system exceeds 35kW.

Depending on version, the units are equipped with plate heat exchanger, pump, diverting valve and check valve. The Separation Units can be equipped with a controller CSK211 (available as accessory) for easy control and automatization of the heat supply.

The units are prepared for wall hanging mounting.

VERSIONS

ESBE Separation Unit SKP100

The SKP100 is dedicated to separate two heating devices in a hybrid system.

The SKP100 comes with 30kW or 40kW plate heat exchanger, a Wilo PARA 8m pump and check valve.

The unit can be equipped with a controller CSK211 (available as accessory) to control the pump and to switch off the heating source, such as a gas or oil boiler, in case of usage of another heating source, such as a solid fuel boiler. In case that the heating device on the primary side isn't equipped with a pump, the SKP100 is prepared for installation of a secondary pump (available as accessory).

ESBE Separation Unit SKS100

The SKS100 is dedicated to potable water preparation with smaller heating sources, such as water fireplaces, wood stoves and pellet boilers.

The SKS100 comes with a 20kW plate heat exchanger and diverting valve. It can deliver 12 l/min of potable water at 45°C.

The unit can be equipped with a controller CSK211 (available as accessory) to switch on the pump if the heating source for potable hot water preparation has reached working temperature. In case that the heating device on the primary side isn't equipped with a pump, the SKS100 is prepared for installation of a secondary pump (available as accessory).

For anti-scalding protection, ESBE is recommending

one of the thermostatic mixing valves available in ESBE product portfolio.

ESBE Separation Unit SKC100

The SKC100 is dedicated to separate two heating devices in a hybrid system, as well as potable water preparation.

The SKC100 comes with a 30kW plate heat exchanger, a Wilo PARA 8m pump, check valve, diverting valve and 20kW plate heat exchanger for potable water preparation. The unit can deliver 12 l/min of potable hot water with a temperature of 45°C.

The unit can be equipped with a controller CSK211 (available as accessory) to switch on the pump if the heating source for potable hot water preparation has reached working temperature, as well as turning off one heating source in case of usage of another heating source. In case that the heating device on the primary side isn't equipped with a pump, the SKC111 is prepared for installation of a secondary pump (available as accessory).

For anti-scalding protection, ESBE is recommending one of the thermostatic mixing valves available in ESBE product portfolio.

SERVICE AND MAINTENANCE

The Separation Units does not require any specific maintenance under normal conditions.

KEY BENEFITS

- Prevent oxygen damage in the boiler
- Preassembled and pressure tested unit
- Easy and quick installation
- Potable water preparation (SKS100 & SKC100)
- Flexible design with the possibility of upgrade
- Dedicated unit controller
- Ensures the system compliance with INAIL

RELATED ACCESSORIES

Art. No.

62100200 _____ CSK211 Separation Units Controller

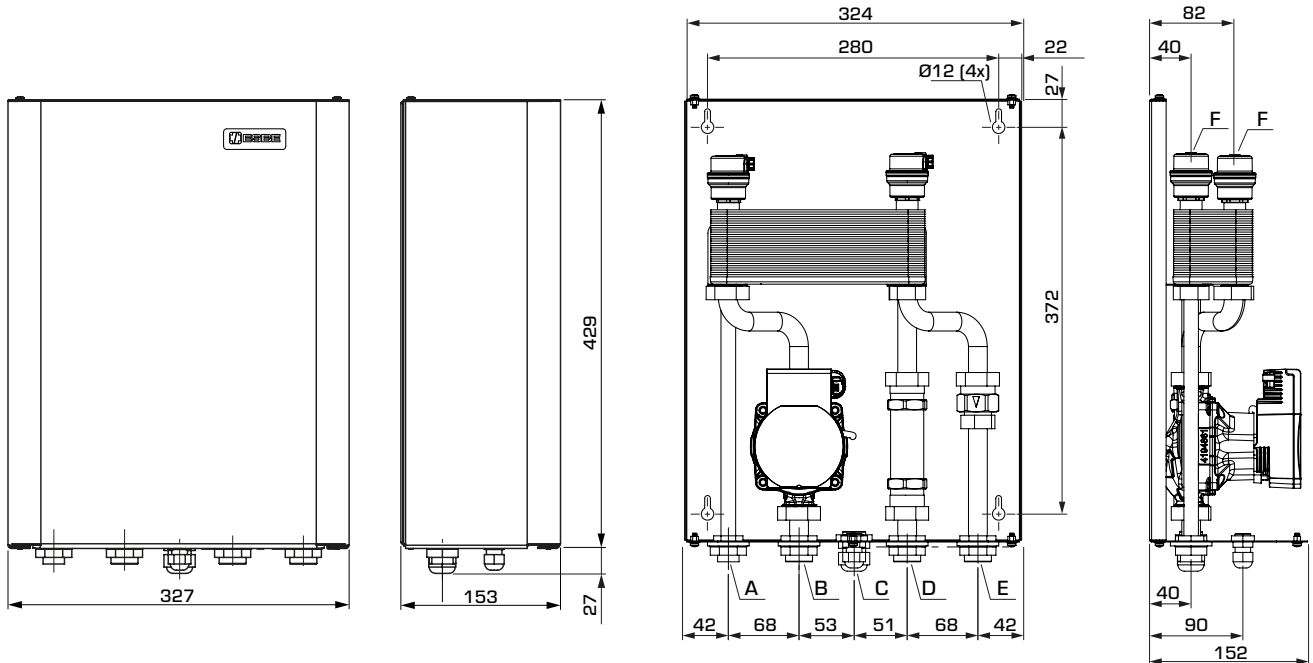
62100400 _____ PSK111 Pump Wilo PARA 15-130/8-75/SC

SEPARATION UNIT SERIES SKx100

Connections,

- A - Return, primary side _____ G 3/4"
- B - Return, secondary side _____ G 3/4"
- C - Cable leading
- D - Supply, primary side _____ G 3/4"
- E - Supply, secondary side _____ G 3/4"
- F - Air vent valve (2x)

PRODUCT ASSORTMENT



SERIES SKP100

Art. No.	Reference	Power [kW]	Pump	Connections A, B, D, E	Weight [kg]	Note
62000100	SKP111	30	Wilo Para 15/8-75	G 3/4"	8,2	
62000200	SKP112	40			9,6	

TECHNICAL DATA

Visit esbe.eu for further detailed information.

Separation unit SKP100, in general:

Pressure class: _____ PN 6
 Media temperature: _____ max. +90°C
 _____ min. 0°C
 Ambient temperature: _____ max. +50°C
 _____ min. 0°C
 Max. Working pressure: _____ 0,6 MPa (6 bar)
 Number of plates - Plate heat exchanger; SKP111: _____ 30
 SKP112: _____ 40

Connections, _____ External thread (G), ISO 228/1
 Media: _____ Heating water, in accordance with VDI2035

Conformities and certificates

LVD 2014/35/EU
 EMC 2014/30/EU
 RoHS3 2015/863/EU
 ErP 2009/125/EU

PED 2014/68/EU, article 4.3

The integrated circulation pump, SKP100:

Pump reference: _____ Wilo PARA 15-130/8-75/SC
 Pressure class: _____ PN 10
 Power supply: _____ 230 ± 10% V AC, 50/60 Hz
 Power consumption: _____ 10-75 W
 Enclosure rating: _____ IP X4D
 Insulation class: _____ F
 EEI (Energy Efficiency Index): _____ ≤0,21 -part 3

WIRING - please see Installation instruction

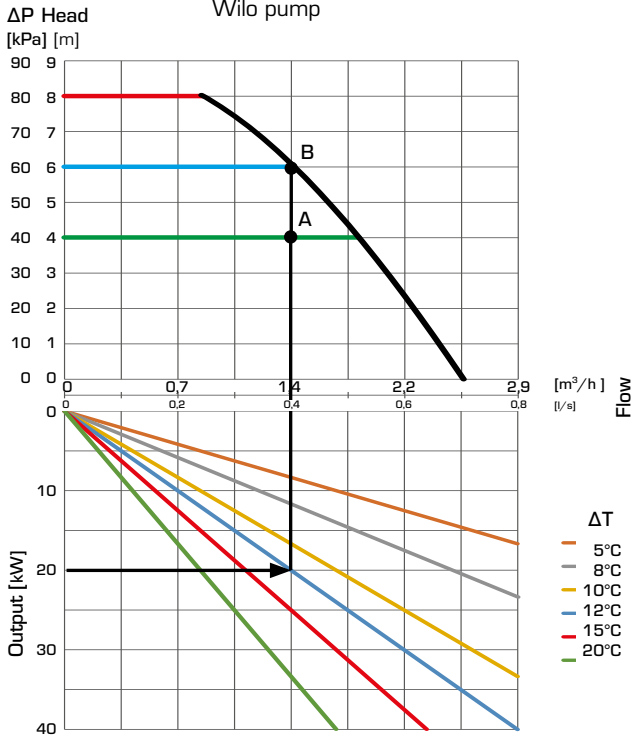
SEPARATION UNIT SERIES SKx100

DIMENSIONING, PUMP CAPACITY DIAGRAM, SECONDARY SIDE

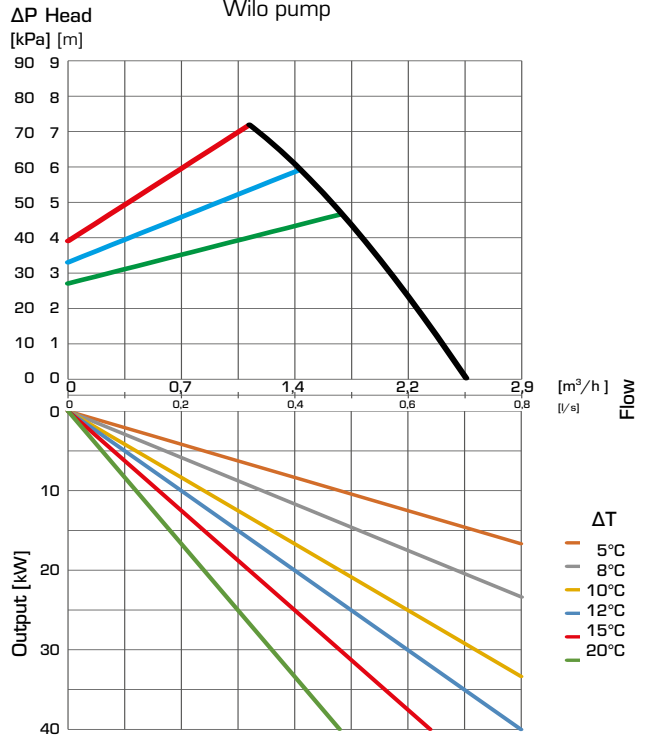
Example: Start with the heat demand of the heating circuit (e.g. 20 kW) and move horizontally to the right in the diagram to the $\Delta t = 12^\circ\text{C}$ (temperature difference between flow and return of the heating circuit). Next go up and find the possible duty points.

Setting I gives duty point A with a residual head of 40 kPa. Setting II and III gives duty point B with a residual head of 60 kPa.

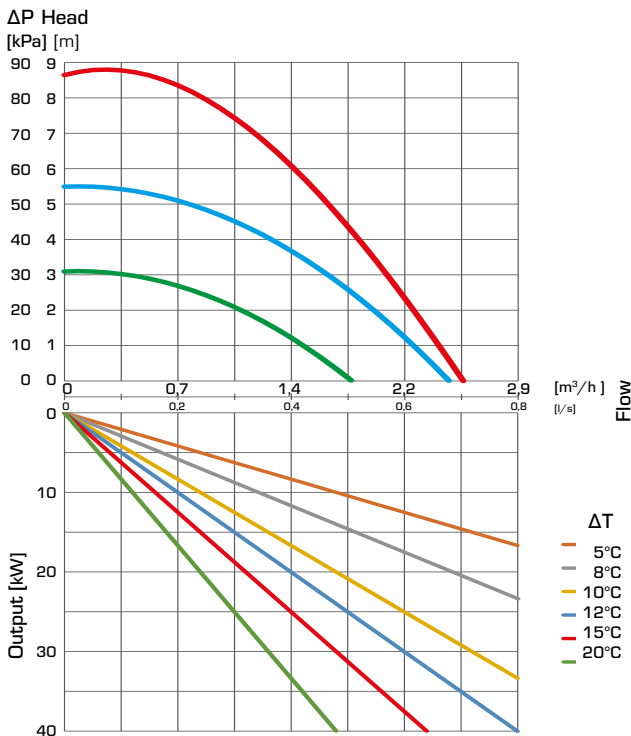
SERIES SKP111 — Constant differential pressure, Wilo pump



SERIES SKP111 — Variable differential pressure, Wilo pump



SERIES SKP111 — Constant speed, Wilo pump



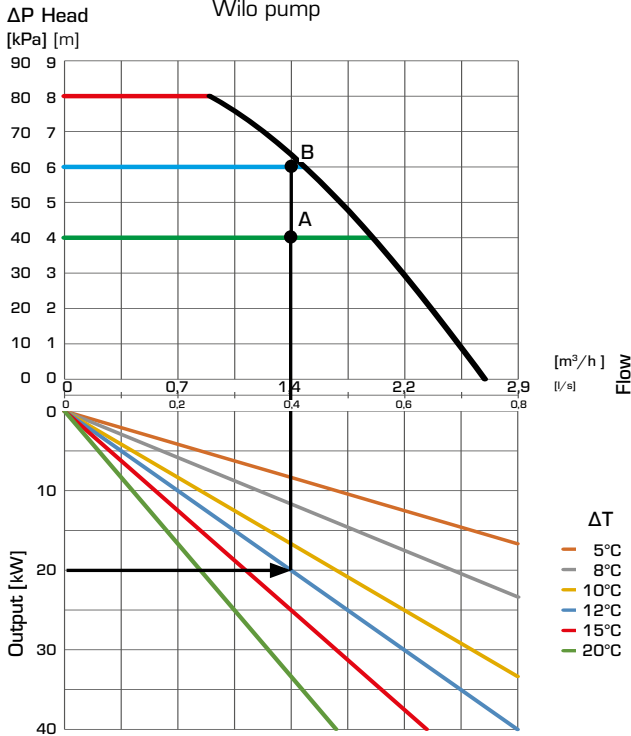
SEPARATION UNIT SERIES SKx100

DIMENSIONING, PUMP CAPACITY DIAGRAM, SECONDARY SIDE

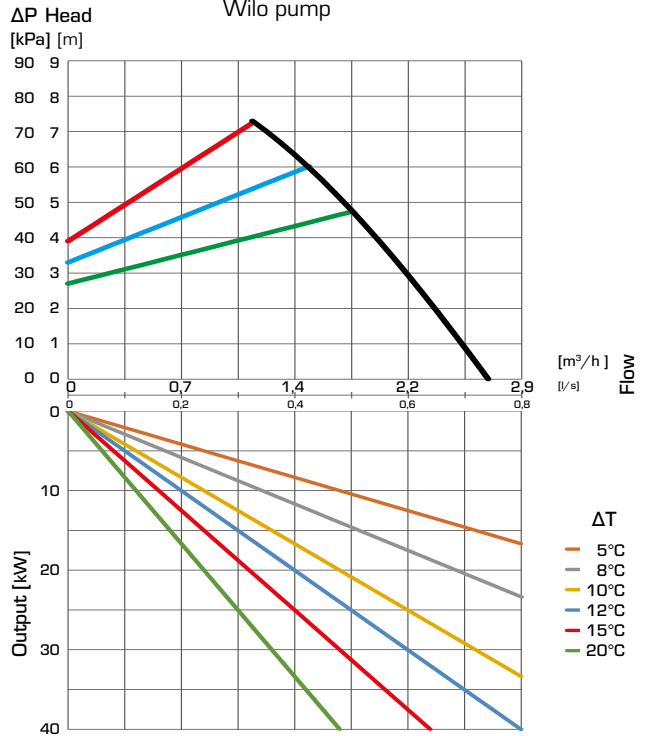
Example: Start with the heat demand of the heating circuit (e.g. 20 kW) and move horizontally to the right in the diagram to the $\Delta t = 12^\circ\text{C}$ (temperature difference between flow and return of the heating circuit). Next go up and find the possible duty points.

Setting I gives duty point A with a residual head of 40 kPa. Setting II and III gives duty point B with a residual head of 60 kPa.

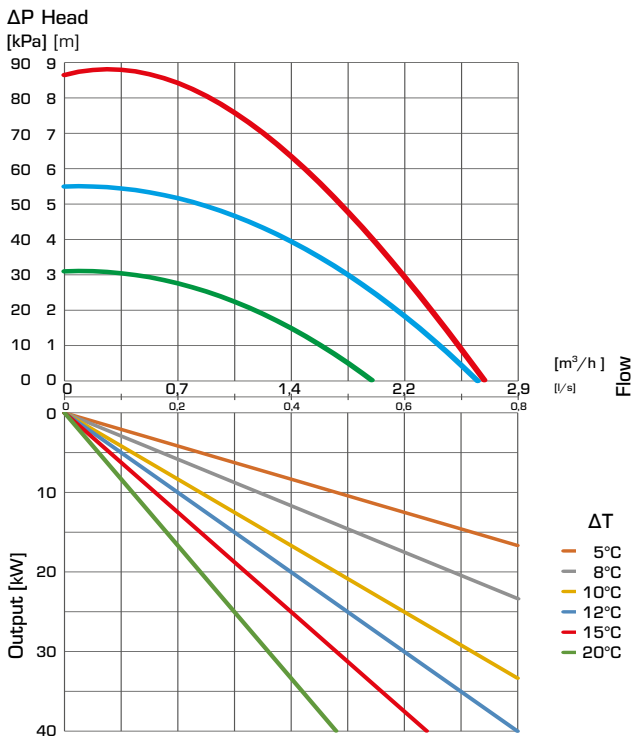
SERIES SKP112 – Constant differential pressure, Wilo pump



SERIES SKP112 – Variable differential pressure, Wilo pump



SERIES SKP112 – Constant speed, Wilo pump

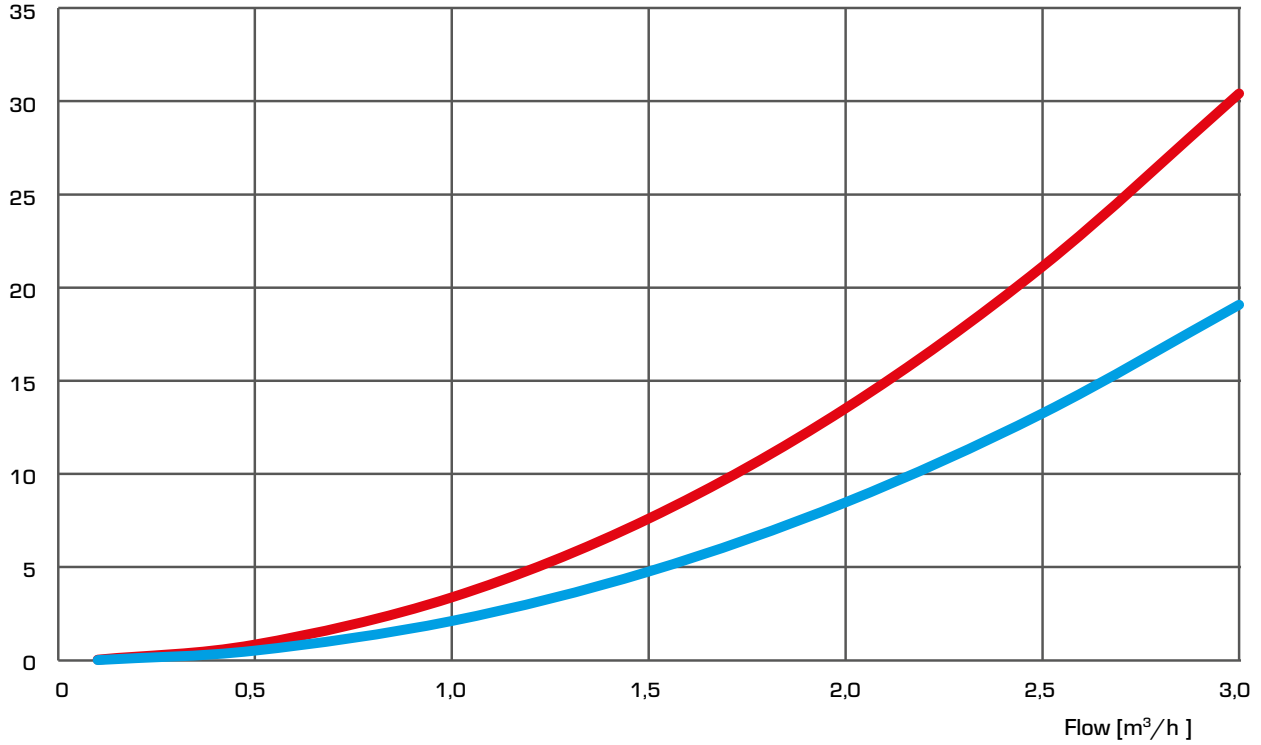


SEPARATION UNIT SERIES SKx100

DIMENSIONING, PRESSURE LOSSES, PRIMARY SIDE

SERIES SKP11x — Pressure drop

ΔP
[kPa]



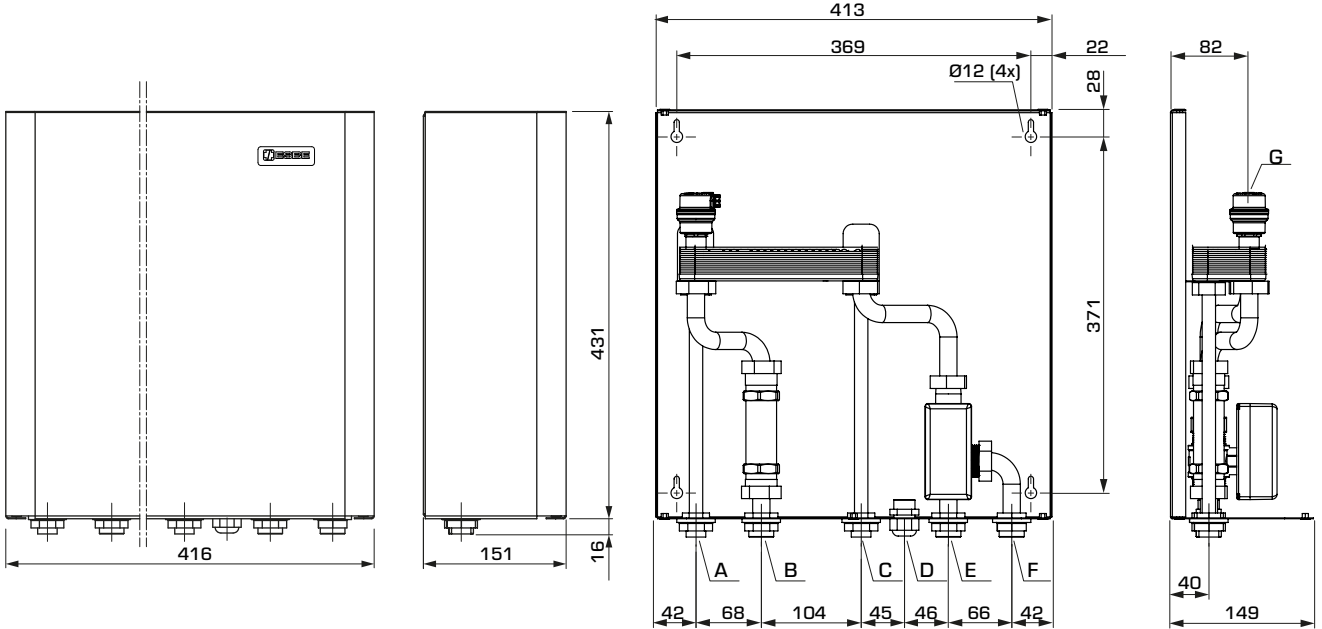
— SKP111
— SKP112

SEPARATION UNIT SERIES SKx100

Connections,

- A - Potable hot water outlet _____ G 1/2"
- B - Supply, primary side _____ G 3/4"
- C - Potable water inlet _____ G 1/2"
- D - Cable leading
- E - Return, primary side _____ G 3/4"
- F - Heating receiver outlet _____ G 3/4"
- G - Air vent valve (1x)

PRODUCT ASSORTMENT



SERIES SKS100

Art. No.	Reference	Connections Heating B, E, F	Connections PHW A, C	PHW	Weight [kg]	Note
62001100	SKS101	G 3/4"	G 1/2"	12 l/min	8,0	

TECHNICAL DATA

Visit esbe.eu for further detailed information.

Separation unit SKS100, in general:

Pressure class: _____ PN 6
 Media temperature: _____ max. +90°C
 _____ min. 0°C
 Ambient temperature: _____ max. +50°C
 _____ min. 0°C
 Max. Working pressure - primary: _____ 0,6 MPa (6 bar)
 - secondary: _____ 1,0 Mpa (10 bar)
 Plate heat exchanger (PHW): _____ 20 kW
 Potable hot water capacity: _____ 12 l/min
 Potable hot water temperature: _____ +45°C
 (at 12l/min and cold water 15°C)

Connections, _____ External thread (G), ISO 228/1
 Media,
 Primary side: _____ Heating water, in accordance with VDI2035
 Secondary side: _____ Potable water

Conformities and certificates

LVD 2014/35/EU
 EMC 2014/30/EU
 RoHS3 2015/863/EU

PED 2014/68/EU, article 4.3

The integrated diverting valve, SKS100:

Valve reference: _____ 3VNTB-2520 + GRSF-4V
 Pressure class: _____ PN 16
 Differential pressure: _____ ΔP 5 bar
 Control signal: _____ 3-point SPDT
 Power supply: _____ 230 ± 10% V AC, 50/60 Hz
 Power consumption,
 during operation: _____ 4,1 W
 at closed position (end of stroke): _____ 0 W

Running time 90°: _____ 30 s
 Enclosure rating: _____ IP41

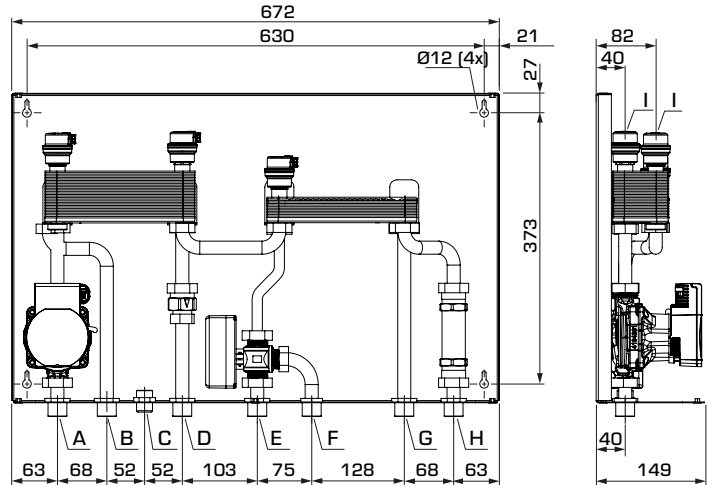
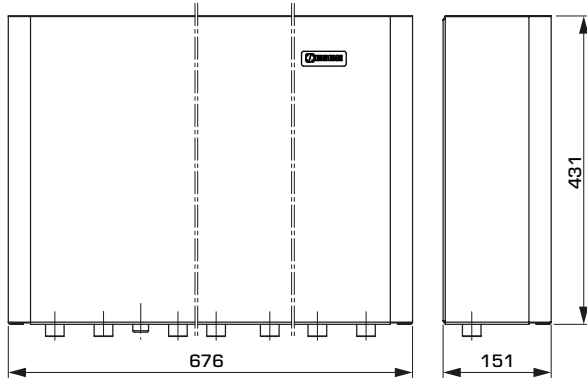
WIRING - please see Installation instruction

SEPARATION UNIT SERIES SKx100

PRODUCT ASSORTMENT

Connections,

- A - Return, secondary side _____ G 3/4"
- B - Return, primary side _____ G 3/4"
- C - Cable leading
- D - Heating receiver outlet _____ G 3/4"
- E - Potable hot water supply to the gas/oil heat generator: _____ G 1/2"
- F - Potable water inlet _____ G 1/2"
- G - Potable hot water outlet _____ G 1/2"
- H - Supply, primary side _____ G 3/4"
- I - Air vent valve (3x)



SKC111

SERIES SKC100

Art. No.	Reference	Pump	Connections Heating A, B, D, H	Connections PHW E, F, G	PHW	Weight [kg]
62002100	SKC111	Wilo Para 15/8-75	G 3/4"	G 1/2"	12 l/min	14,7

TECHNICAL DATA

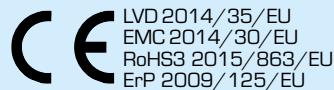
Visit esbe.eu for further detailed information.

Separation unit SKC100, in general:

Pressure class: _____ PN 6
 Media temperature: _____ max. +90°C
 _____ min. 0°C
 Ambient temperature: _____ max. +50°C
 _____ min. 0°C
 Max. Working pressure - primary: _____ 0,6 MPa (6 bar)
 - secondary: _____ 1,0 Mpa (10 bar)
 Plate heat exchanger, heating: _____ 30 kW
 PHW: _____ 20 kW
 Potable hot water capacity: _____ 12 l/min
 Potable hot water temperature: _____ +45°C
 (at 12l/min and cold water 15°C)

Connections, _____ External thread (G), ISO 228/1
 Media,
 Primary side: _____ Heating water, in accordance with VDI2035
 Secondary side: _____ Potable water

Conformities and certificates



PED 2014/68/EU, article 4.3

The integrated diverting valve, SKC100:

Valve reference: _____ 3STMA20 + RSF-4V
 Pressure class: _____ PN 16
 Differential pressure: _____ ΔP 5 bar)
 Power supply: _____ 230 ± 10% V AC, 50/60 Hz
 Running time 90°: _____ 30 s

Power consumption,
 during operation: _____ 4,1 W
 at closed position (end of stroke): _____ 0 W
 Enclosure rating: _____ IP41

WIRING - please see Installation instruction

The integrated circulation pump, SKC100:

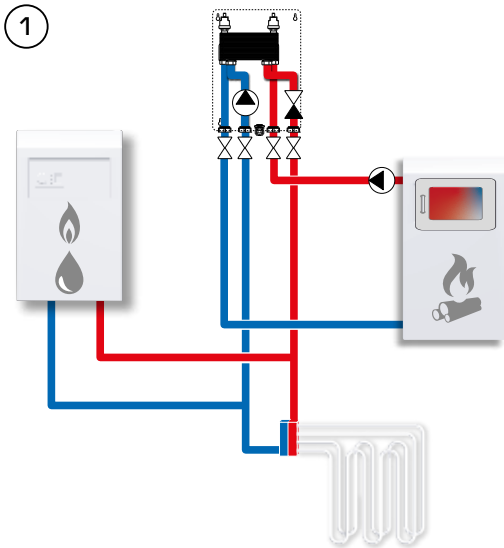
Pump reference: _____ Wilo PARA 15-130/8-75/SC
 Pressure class: _____ PN 10
 Power supply: _____ 230 ± 10% V AC, 50/60 Hz
 Power consumption: _____ 10-75 W

Enclosure rating: _____ IP X4D
 Insulation class: _____ F
 EEI (Energy Efficiency Index): _____ ≤0,21 - part 3

WIRING - please see Installation instruction

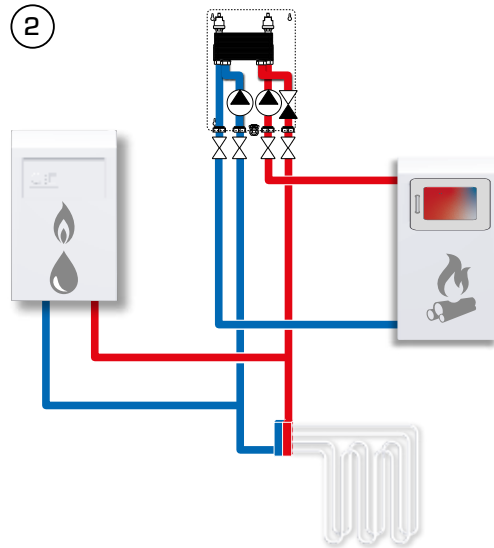
SEPARATION UNIT SERIES SKx100

INSTALLATION EXAMPLES



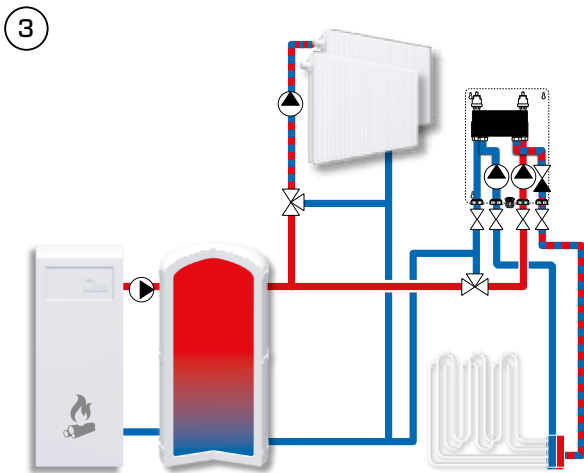
SKP100

SKP100 with two heating devices (gas boiler and water fireplace). The SKP100 provides the hydraulic system separation. The Water fireplace has its own circulation pump.



SKP100 with additional pump (available as accessory)

SKP100 with two heating devices (gas boiler and water fireplace). The SKP100 provides the hydraulic system separation and has been equipped with an additional pump since the Water fireplace doesn't include one.



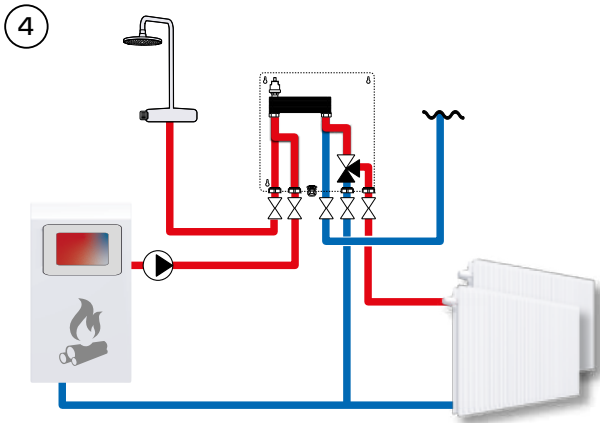
SKP100 with additional pump (available as accessory)

SKP100 is used as a heating system separation for underfloor heating and has been equipped with an additional pump to receive water from the tank.

*The shown applications are only examples of product use!
Before using the product in any application, the regional and national regulations need to be checked.*

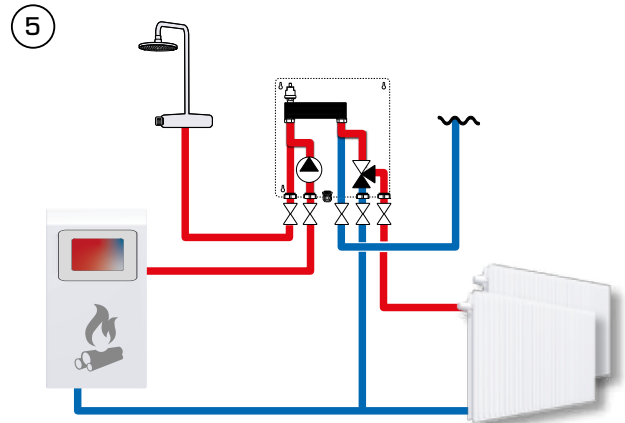
SEPARATION UNIT SERIES SKx100

INSTALLATION EXAMPLES



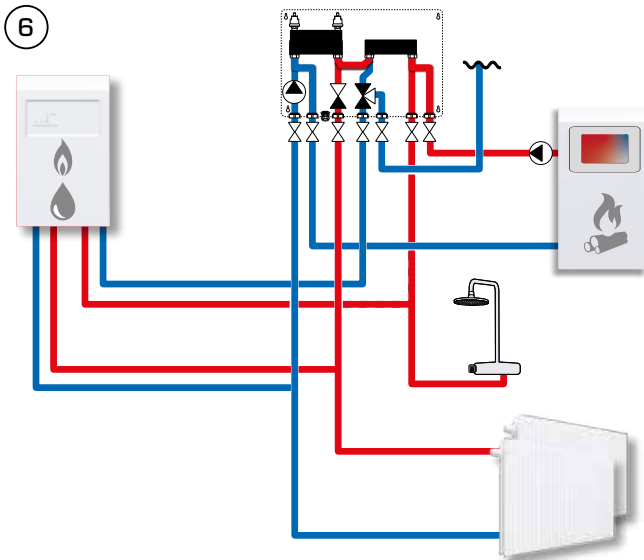
SKS100

The SKS100 provides hot water from the solid fuel boiler. The boiler has its own pump.



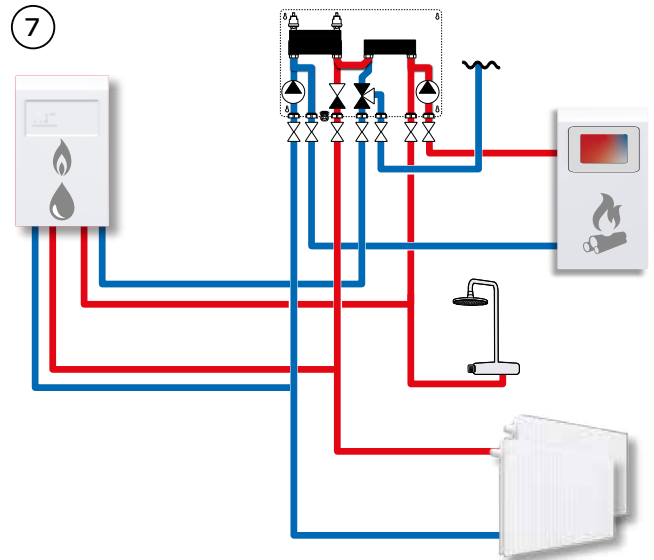
SKS100 with additional pump (available as accessory)

The SKS100 provides hot water from the solid fuel boiler. The unit is equipped with an additional pump since the heating source doesn't include one.



SKC100

SKC100 provides the heat and potable hot water from two heating devices (gas boiler and water fireplace) thru hydraulic system separation. The Water fireplace has its own circulation pump.



SKC100 with additional pump (available as accessory)

SKC100 provides the heat and potable hot water from two heating devices (gas boiler and water fireplace) thru hydraulic system separation. The unit has an additional circulation pump since the heating water fireplace doesn't include one.

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Before using the product in any application, the regional and national regulations need to be checked.*