KODSAN

# 2021 PRODUCT GUIDE

KODSAN

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2021

ver. 1.1

# CONTENT


# KODSAN

## Our Vision

In the light of the principles of honesty and trust, to provide human and environment-oriented products and services, to enlarge the business opportunities it has developed, and to be one of the top 5 companies in the world in the industry.

## Our Mission

With its expert and dynamic team, innovative spirit and strong business partners, spreading our quality to the World, to create added value and difference by enlarging the business models.

## About Us

Kodsan entered the heating industry with solid fuel boiler production when Mehmet Namık Kodaman founded the company in 1984, Ankara. It has become a leading company with its innovations, success, and people-oriented business strategies. It has grown, developed, and renewed considerably with the strength of over 35 years of experience.

As Turkey's first and largest enamel coated water heater manufacturer, Kodsan increases its recognition in early 2000, in Turkey and surrounding countries. Kodsan manufactures enamel/ non-enamel covered water heaters, heat interface units, automatic pump controlled expansion systems, separators and filters, installment protection equipments.

Additionally, with its extensive technical service network, Kodsan provides service for energy consumption management and heat meter inspection.

## Main Export Countries

Azerbaijan, Canada, Denmark, France, Germany, Greece, Holland, Iraq, Israel, Italy, Kenya, Norway, Portugal, Qatar, Republic of South Africa, Russia, Saudi Arabia, South Korea, Spain, Sweden, Thailand, United Arab Emirates, United Kingdom, Uruguay

## Our Achievements

Kodsan shines out with its advanced technology, high efficiency products and flexible production capability which can quickly adapt to the customer demands. However among these specialities, Kodsan prioritizes human health as well as the environment. Following this principle, all production processes and products are appropriate to the Europe Environment and Human Health Regulations(Reach and Rosh). For example;

- WRAS certification for the used enamel as well as for all the materials and products that contacts the drinkable water.
- Kodsan manufactures specially designed products that avoid bacteria growth such as legionella which causes the legionnaire disease.
- Kodsan is one of the limited companies that has a waste water treatment facility.
- Raw material which does not include heavy metals and with low carbon footprint are being used during production.
- Maximum sensitivity shown for recycling through all production processes.

## Milestones

**1984** — Founded in Ankara as a solid fuel boiler manufacturer on 400m².

**1992** — Started to the construction of 2000m² area in Sincan Organized Industrial Zone.

**1998** — Enameled water heater manufacturing started.

**2000** — First export sales is realized.

**2002** — Separator production line was established.

**2004** — Boiler manufaturing ended.

**2013** — Company reached 12.000m² closed area and 16.500m² area in total.

**2015** — Partnership with Minol ZENNER started.

**2016** — The number of export sales exceeded 35 countries.

**2017** — Design Center is approved by government.

**2018** — The production lines and designs of the company have been purchased, and the Heat Interface Unit manufacturing has started.

**2019** — Distribution for TR market with RBM started.

Company reached 20.000m² closed area and 24.500m² area in total.

**2020** — The number of Export sales exceed 50 countries.

# WATER HEATERS & STORAGE TANKS

## WATER HEATERS & STORAGE TANKS


# UP TO
## 10 YEARS WARRANTY

Leading the industry with its products, Kodsan creates a difference in terms of warranty, and service by offering up to 10 years warranty service which is being done for the first time in the industry.


# ENERGY
## EFFICIENCY

Adopting environmentally friendly approach and using energy efficient products, Kodsan offers eco-designed products in accordance with the ErP Directions.

### Class A Energy Efficiency

Kodsan has crowned its eco-designed products approach with energy efficient and high quality products up to A class.

# BLUESHELL
## COVER TECHNOLOGY

Kodsan fulfills its adopted missions with a BlueShell™ insulation by maximizing heat efficiency, creating a humidity barrier, reducing labor costs, providing ease of assembly and disassembly for the customer, and minimizing environmental damage.

BlueShell™

# FLEXIBLE
## PRODUCTION

Kodsan has a flexible production capability that can quickly adapt to customer requests with its highly efficient and environmentally friendly products.

### Tests Being Held into Kodsan Laboratory

Kodsan which is also known as the only company in Turkey that can test its products at its very own laboratory in the industry runs; Aging test, ErP test and Capacity test to ensure the product quality.

# 11.11 **KBS** SINGLE COIL WATER HEATER

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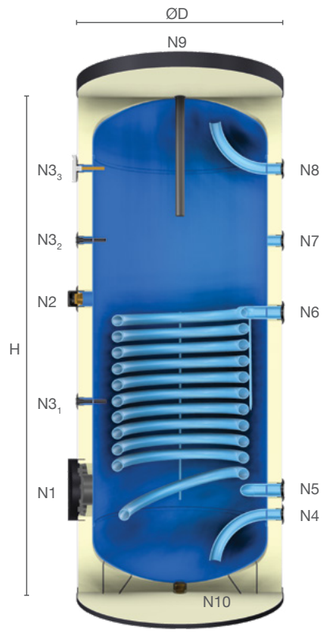



**Volume**
100L-3000L

**Maximum Heating Power**
272 $kW_h$

**Maximum Solar Collector Area**
87 $m^2$

**Heat Exchanger Maximum Operating Temperature**
110°C

**Heat Exchanger Maximum Operating Pressure**
10 bar

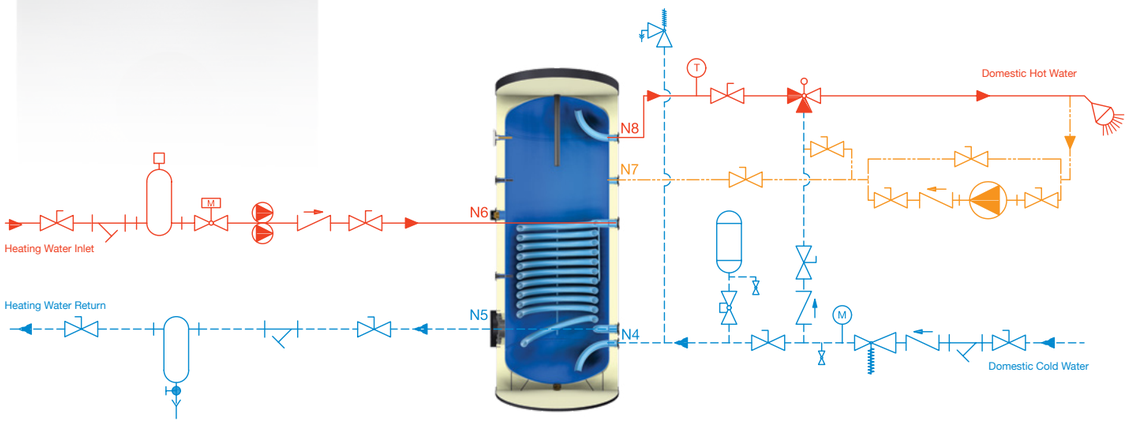
**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
10 bar

**Inner Surface Coating**
Tank inner surface is enamelled (glass-lined) in accordance with DIN 4753-3 standard.

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.

The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.



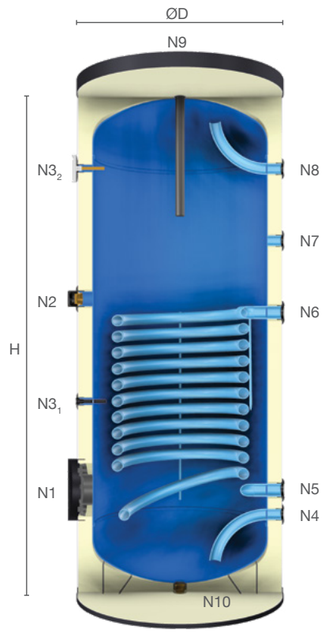
| | | 100L-500L | 800L-1000L | 1500L-2000L | 2500L-3000L |
|---|---|---|---|---|---|
| INSULATION | PU- 42kg/m³ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | STD/50 mm | x | x | x |
| | Soft PU- 15 kg/m³ soft polyurethane | x | STD / 80mm | STD / 80mm | STD / 80mm |
| | Soft PU- 26 kg/m³ flame retardant soft polyurethane | x | OPS / 80mm | OPS / 80mm | OPS / 80mm |
| | Izomax- 50kg/m³ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | x | OPS / 80mm | OPS / 80mm<br>OPS / 100mm | OPS / 80mm |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | STD | x | x | x |
| | Vinleks- Artificial Leather | x | STD | STD | STD |
| | Izoqua- Waterproof PVC unit which is suitable for exterior usage.<br>**(Optional only with the izomax insulation application)** | x | OPS | OPS | OPS |
| EQUIPMENT | Thermometer (0°C- 120°C) | STD/Ø63 | STD/Ø100 | STD/Ø100 | STD/Ø100 |
| | Steel Sensor Tube | STD/Ø9 mm<br>2 pieces | STD/Ø9 mm<br>2 pieces | STD/Ø9 mm<br>2 pieces | STD/Ø9 mm<br>2 pieces |
| | Cleaning & Control Flange | STD/Ø100 mm | STD/Ø125 mm<br>OPS/Ø400 mm | STD/Ø125 mm<br>OPS/Ø400 mm | STD/Ø125 mm<br>OPS/Ø400 mm |
| | Electric Heater | OPS/1½" | OPS/2" | OPS/2" | OPS/2" |
| CATHODIC PROTECTION | Magnesium Anode | STD | STD | STD | STD |
| | Electronic Anode | OPS | OPS | OPS | OPS |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | STD | STD | STD-x | x |
| | Circle steel leg system that provides circular floor contact | x | x | x-STD | STD |

**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

| | Code | Unit | 11.11.11 | 11.11.13 | 11.11.14 | 11.11.16 | 11.11.18 | 11.11.20 | 11.11.21 | 11.11.22 | 11.11.23 | 11.11.24 | 11.11.25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Capacity** | V | lt | 100 | 160 | 200 | 300 | 500 | 800 | 1000 | 1500 | 2000 | 2500 | 3000 |
| **Insulation Type & Thickness** | i | mm | PU/50 | PU/50 | PU/50 | PU/50 | PU/50 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 |
| **Diameter** | ØD | mm | 480 | 580 | 580 | 580 | 740 | 910 | 1010 | 1120 | 1310 | 1460 | 1460 |
| **Height** | H | mm | 1110 | 1135 | 1340 | 1860 | 1845 | 2110 | 2070 | 2375 | 2280 | 2160 | 2580 |
| **Cleaning & Control Flange Diameter** | N1 | inch | Ø100 | Ø100 | Ø100 | Ø100 | Ø100 | Ø125 | Ø125 | Ø125 | Ø125 | Ø125 | Ø125 |
| **Electric Heater Connection** | N2 | inch | 1½" | 1½" | 1½" | 1½" | 1½" | 2" | 2" | 2" | 2" | 2" | 2" |
| **Thermometer / Steel Sensor Tube Connections** | N3 | inch/mm | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 |
| **Domestic Cold Water Inlet Connection** | N4 | inch | ¾" | ¾" | ¾" | ¾" | 1" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" |
| **Heat Exchanger (Coil) Inlet/ Outlet Connections** | N5-N6 | inch | 1" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" |
| **Circulation Return Connection** | N7 | inch | ¾" | ¾" | ¾" | ¾" | ¾" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" |
| **Domestic Hot Water Outlet Connection** | N8 | inch | ¾" | ¾" | ¾" | ¾" | 1" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" |
| **Magnesium Anode Connection** | N9 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Blind Connection** | N10 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 2" | 2" | 2" | 2" |
| **Gross Weight** | G | kg | 52 | 75 | 88 | 98 | 150 | 245 | 260 | 360 | 455 | 650 | 735 |
| **Tilt Height** | R | mm | 1210 | 1275 | 1460 | 1950 | 1990 | 2300 | 2305 | 2625 | 2630 | 2610 | 2965 |

The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have internal thread connection.

# 11.12 KBS-B BASIC SINGLE COIL WATER HEATER


**Volume**
100L-500L

**Maximum Heating Power**
66 $kW_h$

**Maximum Solar Collector Area**
19 $m^2$

**Heat Exchanger Maximum Operating Temperature**
110°C

**Heat Exchanger Maximum Operating Pressure**
10 bar

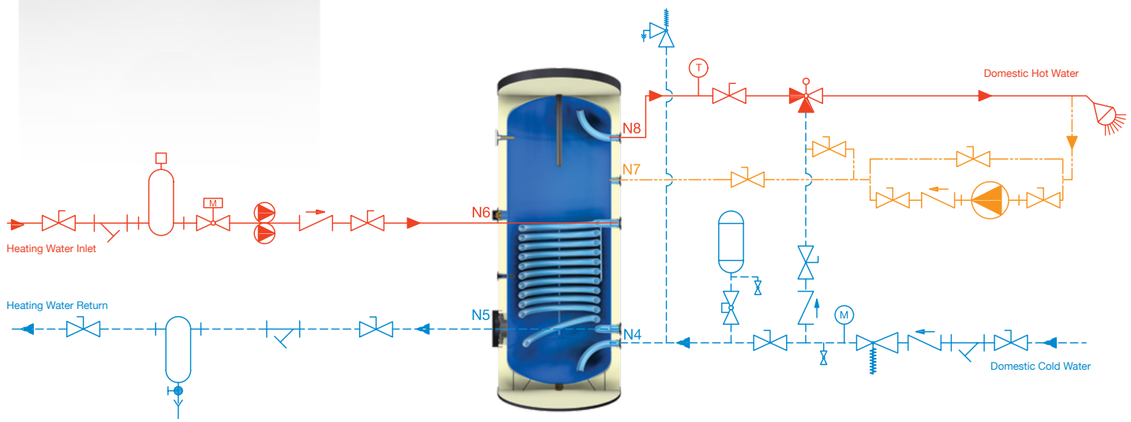
**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
6bar / 10 bar

**Inner Surface Coating**
Tank inner surface is enamelled (glass-lined) in accordance with DIN 4753-3 standard.

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.

The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.



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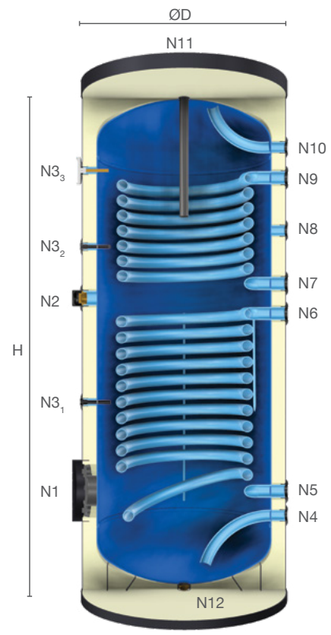
| | | 100L-500L |
|---|---|---|
| INSULATION | PU- 42kg/$m^3$ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | STD/50 mm |
| | Soft PU- 15 kg/$m^3$ soft polyurethane | x |
| | Soft PU- 26 kg/$m^3$ flame retardant soft polyurethane | x |
| | Izomax- 50kg/$m^3$ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | x |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | STD |
| | Vinleks- Artificial Leather | x |
| | Izoqua- Waterproof PVC unit which is suitable for exterior usage. **(Optional only with the izomax insulation application)** | x |
| EQUIPMENT | Thermometer (0°C- 120°C) | STD/Ø63 |
| | Steel Sensor Tube | STD/Ø9 mm 1 pieces |
| | Cleaning & Control Flange | STD/Ø100 mm |
| | Electric Heater | OPS/1½" |
| CATHODIC PROTECTION | Magnesium Anode | STD |
| | Electronic Anode | OPS |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | STD |
| | Circle steel leg system that provides circular floor contact | x |

**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

| | Code | Unit | 11.12.11 | 11.12.13 | 11.12.14 | 11.12.16 | 11.12.18 |
|---|---|---|---|---|---|---|---|
| **Capacity** | V | lt | 100 | 160 | 200 | 300 | 500 |
| **Insulation Type & Thickness** | i | mm | PU/50 | PU/50 | PU/50 | PU/50 | PU/50 |
| **Diameter** | ØD | mm | 480 | 580 | 580 | 580 | 740 |
| **Height** | H | mm | 1110 | 1135 | 1340 | 1860 | 1845 |
| **Cleaning & Control Flange Diameter** | N1 | inch | Ø100 | Ø100 | Ø100 | Ø100 | Ø100 |
| **Electric Heater Connection** | N2 | inch | 1½" | 1½" | 1½" | 1½" | 1½" |
| **Thermometer / Steel Sensor Tube Connections** | N3 | inch/mm | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 |
| **Domestic Cold Water Inlet Connection** | N4 | inch | ¾" | ¾" | ¾" | 1" | 1" |
| **Heat Exchanger (Coil) Inlet/ Outlet Connections** | N5-N6 | inch | 1" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Circulation Return Connection** | N7 | inch | ¾" | ¾" | ¾" | ¾" | ¾" |
| **Domestic Hot Water Outlet Connection** | N8 | inch | ¾" | ¾" | ¾" | 1" | 1" |
| **Magnesium Anode Connection** | N9 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Blind Connection** | N10 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Gross Weight** | G | kg | 52 | 68 | 76 | 98 | 135 |
| **Tilt Height** | R | mm | 1210 | 1275 | 1460 | 1950 | 1990 |

The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have internal thread connection.

# 11.13 **KBD** DOUBLE COIL WATER HEATER


**Volume**
160L-3000L

**Upper Heat Exchanger Maximum Heating Power**
141 $kW_h$

**Lower Heat Exchanger Maximum Heating Power**
272 $kW_h$

**Maximum Solar Collector Area**
87 $m^2$

**Heat Exchanger Maximum Operating Temperature**
110°C

**Heat Exchanger Maximum Operating Pressure**
10 bar

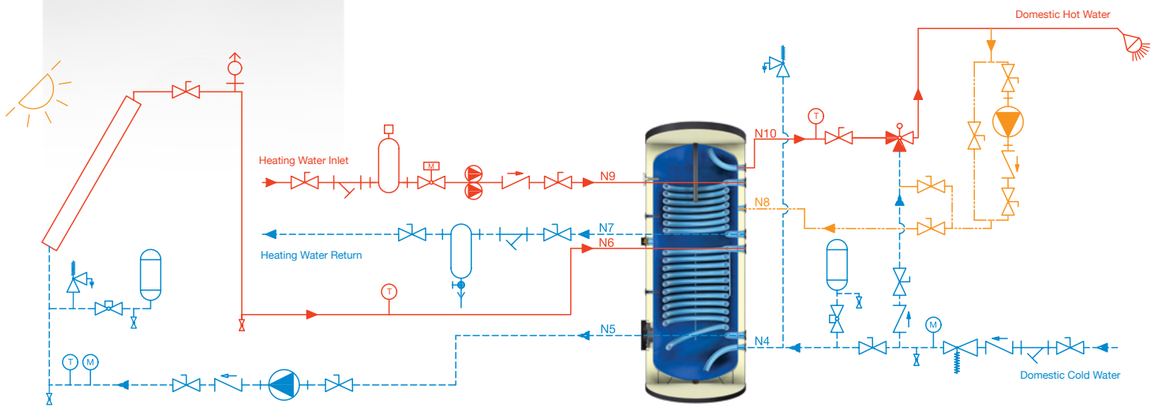
**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
10 bar

**Inner Surface Coating**
Tank inner surface is enamelled (glass-lined) in accordance with DIN 4753-3 standard.

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.

The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.





| | | 160L-500L | 800L-1000L | 1500L-2000L | 2500L-3000L |
|---|---|---|---|---|---|
| INSULATION | PU- 42kg/m³ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | STD/50 mm | x | x | x |
| | Soft PU- 15 kg/m³ soft polyurethane | x | STD / 80mm | STD / 80mm | STD / 80mm |
| | Soft PU- 26 kg/m³ flame retardant soft polyurethane | x | OPS / 80mm | OPS / 80mm | OPS / 80mm |
| | Izomax- 50kg/m³ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | x | OPS / 80mm | OPS / 80mm<br>OPS / 100mm | OPS / 80mm |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | STD | x | x | x |
| | Vinleks- Artificial Leather | x | STD | STD | STD |
| | Izoqua- Waterproof PVC unit which is suitable for exterior usage.<br>**(Optional only with the izomax insulation application)** | x | OPS | OPS | OPS |
| EQUIPMENT | Thermometer (0°C- 120°C) | STD/Ø63 | STD/Ø100 | STD/Ø100 | STD/Ø100 |
| | Steel Sensor Tube | STD/Ø9 mm<br>2 pieces | STD/Ø9 mm<br>2 pieces | STD/Ø9 mm<br>2 pieces | STD/Ø9 mm<br>2 pieces |
| | Cleaning & Control Flange | STD/Ø100 mm | STD/Ø125 mm<br>OPS/Ø400 mm | STD/Ø125 mm<br>OPS/Ø400 mm | STD/Ø125 mm<br>OPS/Ø400 mm |
| | Electric Heater | OPS/1½" | OPS/2" | OPS/2" | OPS/2" |
| CATHODIC PROTECTION | Magnesium Anode | STD | STD | STD | STD |
| | Electronic Anode | OPS | OPS | OPS | OPS |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | STD | STD | STD-x | x |
| | Circle steel leg system that provides circular floor contact | x | x | x-STD | STD |

**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

| | Code | Unit | 11.13.13 | 11.13.14 | 11.13.16 | 11.13.18 | 11.13.20 | 11.13.21 | 11.13.22 | 11.13.23 | 11.13.24 | 11.13.25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Capacity** | V | lt | 160 | 200 | 300 | 500 | 800 | 1000 | 1500 | 2000 | 2500 | 3000 |
| **Insulation Type & Thickness** | i | mm | PU/50 | PU/50 | PU/50 | PU/50 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 |
| **Diameter** | ØD | mm | 580 | 580 | 580 | 740 | 910 | 1010 | 1120 | 1310 | 1460 | 1460 |
| **Height** | H | mm | 1135 | 1340 | 1860 | 1845 | 2110 | 2070 | 2375 | 2280 | 2160 | 2580 |
| **Cleaning & Control Flange Diameter** | N1 | inch | Ø100 | Ø100 | Ø100 | Ø100 | Ø125 | Ø125 | Ø125 | Ø125 | Ø125 | Ø125 |
| **Electric Heater Connection** | N2 | inch | 1½" | 1½" | 1½" | 1½" | 2" | 2" | 2" | 2" | 2" | 2" |
| **Thermometer / Steel Sensor Tube Connections** | N3 | inch/mm | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 |
| **Domestic Cold Water Inlet Connection** | N4 | inch | ¾" | ¾" | ¾" | 1" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" |
| **Lower Heat Exchanger (Coil) Inlet/Outlet Connections** | N5-N6 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" |
| **Upper Heat Exchanger (Coil) Inlet/Outlet Connections** | N7-N9 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" |
| **Circulation Return Connection** | N8 | inch | ¾" | ¾" | ¾" | ¾" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" |
| **Domestic Hot Water Outlet Connection** | N10 | inch | ¾" | ¾" | ¾" | 1" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" |
| **Magnesium Anode Connection** | N11 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Blind Connection** | N12 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 2" | 2" | 2" | 2" |
| **Gross Weight** | G | kg | 82 | 91 | 104 | 178 | 275 | 290 | 390 | 500 | 720 | 805 |
| **Tilt Height** | R | mm | 1275 | 1460 | 1950 | 1990 | 2300 | 2305 | 2625 | 2630 | 2610 | 2965 |

The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have internal thread connection.

# 11.14 KBD-B BASIC DOUBLE COIL WATER HEATER

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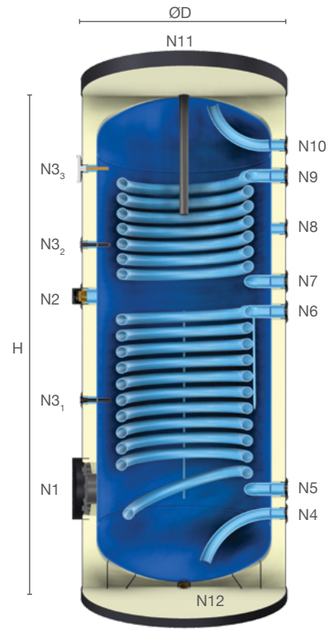



**Volume**
160L-500L

**Upper Heat Exchanger Maximum Heating Power**
41 $kW_h$

**Lower Heat Exchanger Maximum Heating Power**
55 $kW_h$

**Maximum Solar Collector Area**
29 $m^2$

**Heat Exchanger Maximum Operating Temperature**
110°C

**Heat Exchanger Maximum Operating Pressure**
10 bar

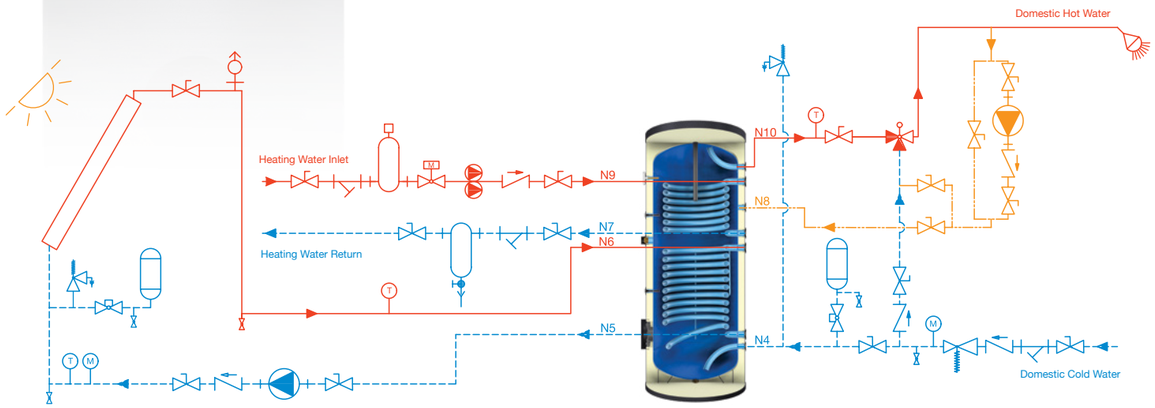
**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
6 bar / 10 bar

**Inner Surface Coating**
Tank inner surface is enamelled (glass-lined) in accordance with DIN 4753-3 standard.

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.

The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.



| | | 160L-500L |
|---|---|---|
| INSULATION | PU- 42kg/$m^3$ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | STD/50 mm |
| | Soft PU- 15 kg/$m^3$ soft polyurethane | x |
| | Soft PU- 26 kg/$m^3$ flame retardant soft polyurethane | x |
| | Izomax- 50kg/$m^3$ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | x |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | STD |
| | Vinleks- Artificial Leather | x |
| | Izoqua- Waterproof PVC unit which is suitable for exterior usage. **(Optional only with the izomax insulation application)** | x |
| EQUIPMENT | Thermometer (0°C- 120°C) | STD/Ø63 |
| | Steel Sensor Tube | STD/Ø9 mm 2 pieces |
| | Cleaning & Control Flange | STD/Ø100 mm |
| | Electric Heater | OPS/1½" |
| CATHODIC PROTECTION | Magnesium Anode | STD |
| | Electronic Anode | OPS |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | STD |
| | Circle steel leg system that provides circular floor contact | x |

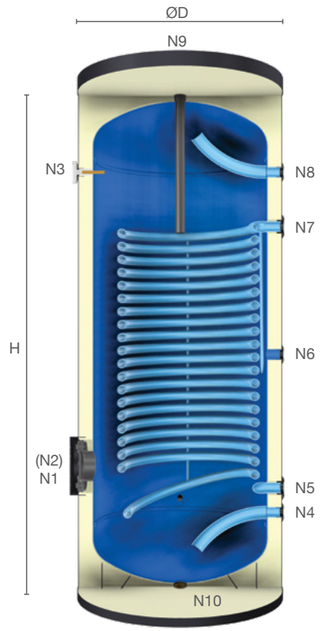
**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

| | Code | Unit | 11.14.13 | 11.14.14 | 11.14.16 | 11.14.18 |
|---|---|---|---|---|---|---|
| Capacity | V | lt | 160 | 200 | 300 | 500 |
| Insulation Type & Thickness | i | mm | PU/50 | PU/50 | PU/50 | PU/50 |
| Diameter | ØD | mm | 580 | 580 | 580 | 740 |
| Height | H | mm | 1135 | 1340 | 1860 | 1845 |
| Cleaning & Control Flange Diameter | N1 | inch | Ø100 | Ø100 | Ø100 | Ø100 |
| Electric Heater Connection | N2 | inch | 1½" | 1½" | 1½" | 1½" |
| Thermometer / Steel Sensor Tube Connections | N3 | inch/mm | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 |
| Domestic Cold Water Inlet Connection | N4 | inch | ¾" | ¾" | 1" | 1" |
| Lower Heat Exchanger (Coil) Inlet/Outlet Connections | N5-N6 | inch | 1¼" | 1¼" | 1¼" | 1¼" |
| Upper Heat Exchanger (Coil) Inlet/Outlet Connections | N7-N9 | inch | 1¼" | 1¼" | 1¼" | 1¼" |
| Circulation Return Connection | N8 | inch | ¾" | ¾" | ¾" | ¾" |
| Domestic Hot Water Outlet Connection | N10 | inch | ¾" | ¾" | 1" | 1" |
| Magnesium Anode Connection | N11 | inch | 1¼" | 1¼" | 1¼" | 1¼" |
| Blind Connection | N12 | inch | 1¼" | 1¼" | 1¼" | 1¼" |
| Gross Weight | G | kg | 80 | 87 | 104 | 155 |
| Tilt Height | R | mm | 1275 | 1460 | 1950 | 1990 |

The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have internal thread connection.

# 11.15 KXS SINGLE ROW COIL HEAT PUMP WATER HEATER

KODSAN


**Volume**
160L-500L

**Maximum Heating Power**
251 $kW_h$

**Maximum Solar Collector Area**
54 $m^2$

**Heat Exchanger Maximum Operating Temperature**
110°C

**Heat Exchanger Maximum Operating Pressure**
10 bar

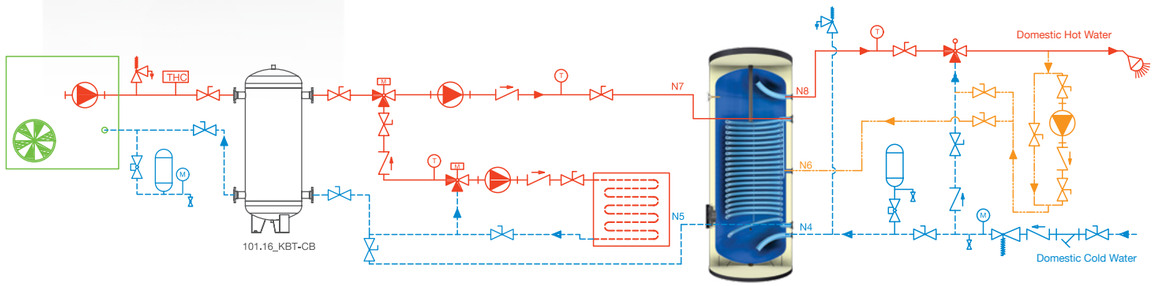
**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
10 bar

**Inner Surface Coating**
Tank inner surface is enamelled (glass-lined) in accordance with DIN 4753-3 standard.

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.

The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.



| | | 160L-500L |
|---|---|---|
| INSULATION | PU- 42kg/$m^3$ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | STD/50 mm |
| | Soft PU- 15 kg/$m^3$ soft polyurethane | x |
| | Soft PU- 26 kg/$m^3$ flame retardant soft polyurethane | x |
| | Izomax- 50kg/$m^3$ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | x |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | STD |
| | Vinleks- Artificial Leather | x |
| | Izoqua- Waterproof PVC unit which is suitable for exterior usage. **(Optional only with the izomax insulation application)** | x |
| EQUIPMENT | Thermometer (0°C- 120°C) | STD/Ø63 |
| | Steel Sensor Tube | STD/Ø9 mm 2 pieces |
| | Cleaning & Control Flange | STD/Ø100 mm |
| | Electric Heater | OPS/1½" |
| CATHODIC PROTECTION | Magnesium Anode | STD |
| | Electronic Anode | OPS |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | STD |
| | Circle steel leg system that provides circular floor contact | x |

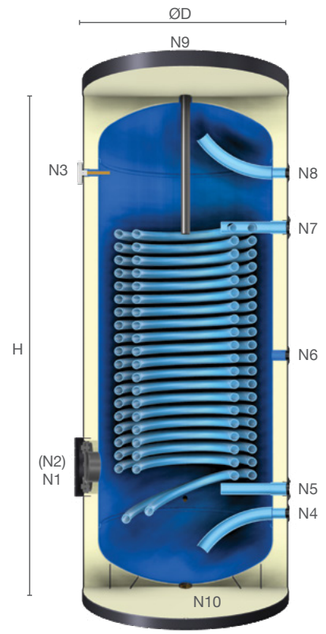
**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

| | Code | Unit | 11.15.13 | 11.15.14 | 11.15.16 | 11.15.18 |
|---|---|---|---|---|---|---|
| **Capacity** | V | lt | 160 | 200 | 300 | 500 |
| **Insulation Type & Thickness** | i | mm | PU/50 | PU/50 | PU/50 | PU/50 |
| **Diameter** | ØD | mm | 580 | 580 | 700 | 740 |
| **Height** | H | mm | 1135 | 1340 | 1220 | 1845 |
| **Cleaning & Control Flange Diameter** | N1 | inch | Ø100 | Ø100 | Ø100 | Ø100 |
| **Electric Heater Connection** | N2 | inch | 1½" | 1½" | 1½" | 1½" |
| **Thermometer / Steel Sensor Tube Connections** | N3 | inch/mm | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 |
| **Domestic Cold Water Inlet Connection** | N4 | inch | ¾" | ¾" | 1" | 1" |
| **Heat Exchanger (Coil) Inlet/ Outlet Connections** | N5-N7 | inch | 1" | 1" | 1" | 1" |
| **Circulation Return Connection** | N6 | inch | ¾" | ¾" | 1" | 1" |
| **Domestic Hot Water Outlet Connection** | N8 | inch | ¾" | ¾" | 1" | 1" |
| **Magnesium Anode Connection** | N9 | inch | 1¼" | 1¼" | 1¼" | 1¼" |
| **Blind Connection** | N10 | inch | 1¼" | 1¼" | 1¼" | 1¼" |
| **Gross Weight** | G | kg | 80 | 92 | 120 | 165 |
| **Tilt Height** | R | mm | 1275 | 1460 | 1410 | 1990 |

The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have internal thread connection.

# 11.16 KXD DOUBLE ROW COIL HEAT PUMP WATER HEATER

KODSAN


BULK ORDER

**Volume**
160L-500L

**Maximum Heating Power**
218 $kW_h$

**Maximum Solar Collector Area**
17 $m^2$

**Heat Exchanger Maximum Operating Temperature**
110°C

**Heat Exchanger Maximum Operating Pressure**
10 bar

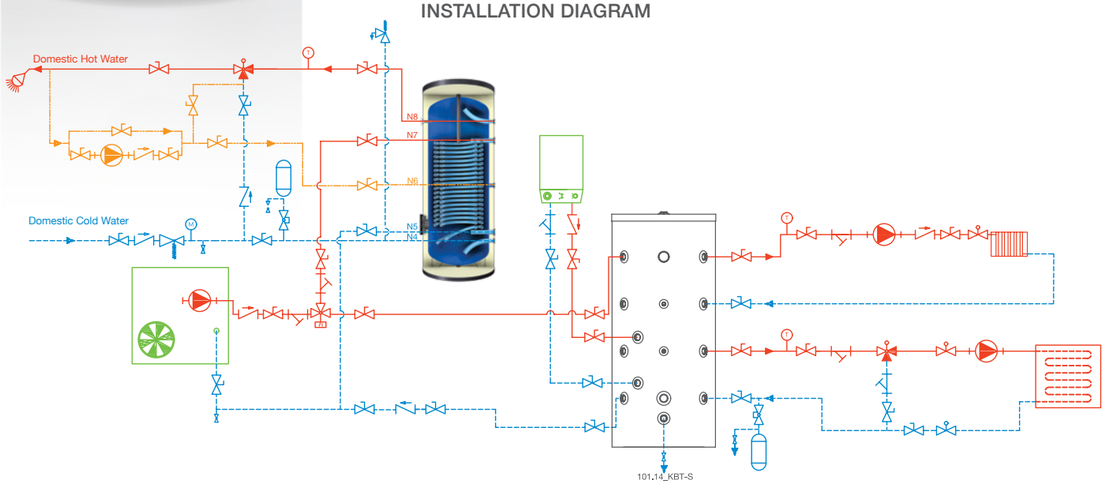
**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
10 bar

**Inner Surface Coating**
Tank inner surface is enamelled (glass-lined) in accordance with DIN 4753-3 standard.

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.
The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.

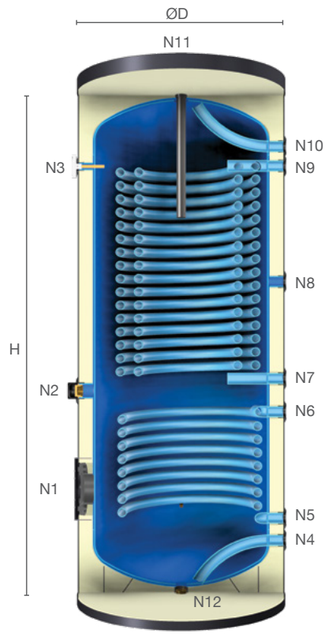


| | | 160L-500L |
|---|---|---|
| INSULATION | PU- 42kg/$m^3$ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | STD/50 mm |
| | Soft PU- 15 kg/$m^3$ soft polyurethane | x |
| | Soft PU- 26 kg/$m^3$ flame retardant soft polyurethane | x |
| | Izomax- 50kg/$m^3$ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | x |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | STD |
| | Vinleks- Artificial Leather | x |
| | Izoqua- Waterproof PVC unit which is suitable for exterior usage. **(Optional only with the izomax insulation application)** | x |
| EQUIPMENT | Thermometer (0°C- 120°C) | STD/Ø63 |
| | Steel Sensor Tube | STD/Ø9 mm 2 pieces |
| | Cleaning & Control Flange | STD/Ø100 mm |
| | Electric Heater | OPS/1½" |
| CATHODIC PROTECTION | Magnesium Anode | STD |
| | Electronic Anode | OPS |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | STD |
| | Circle steel leg system that provides circular floor contact | x |

**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

| | Code | Unit | 11.16.13 | 11.16.14 | 11.16.16 | 11.16.18 |
|---|---|---|---|---|---|---|
| **Capacity** | V | lt | 160 | 200 | 300 | 500 |
| **Insulation Type & Thickness** | i | mm | PU/50 | PU/50 | PU/50 | PU/50 |
| **Diameter** | ØD | mm | 580 | 580 | 700 | 740 |
| **Height** | H | mm | 1135 | 1340 | 1220 | 1845 |
| **Cleaning & Control Flange Diameter** | N1 | inch | Ø100 | Ø100 | Ø100 | Ø100 |
| **Electric Heater Connection** | N2 | inch | 1½" | 1½" | 1½" | 1½" |
| **Thermometer / Steel Sensor Tube Connections** | N3 | inch/mm | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 |
| **Domestic Cold Water Inlet Connection** | N4 | inch | ¾" | ¾" | 1" | 1" |
| **Heat Exchanger (Coil) Inlet/ Outlet Connections** | N5-N7 | inch | 1¼" | 1¼" | 1¼" | 1¼" |
| **Circulation Return Connection** | N6 | inch | ¾" | ¾" | 1" | 1" |
| **Domestic Hot Water Outlet Connection** | N8 | inch | ¾" | ¾" | 1" | 1" |
| **Magnesium Anode Connection** | N9 | inch | 1¼" | 1¼" | 1¼" | 1¼" |
| **Blind Connection** | N10 | inch | 1¼" | 1¼" | 1¼" | 1¼" |
| **Gross Weight** | G | kg | 95 | 113 | 150 | 210 |
| **Tilt Height** | R | mm | 1275 | 1460 | 1410 | 1990 |

# 11.17 KSH HYBRID WATER HEATER


**Volume**
200L-1000L

**Upper Heat Exchanger Maximum Heating Power**
161 $kW_h$

**Lower Heat Exchanger Maximum Solar Collector Area**
10 $m^2$

**Heat Exchanger Maximum Operating Temperature**
110°C

**Heat Exchanger Maximum Operating Pressure**
10 bar

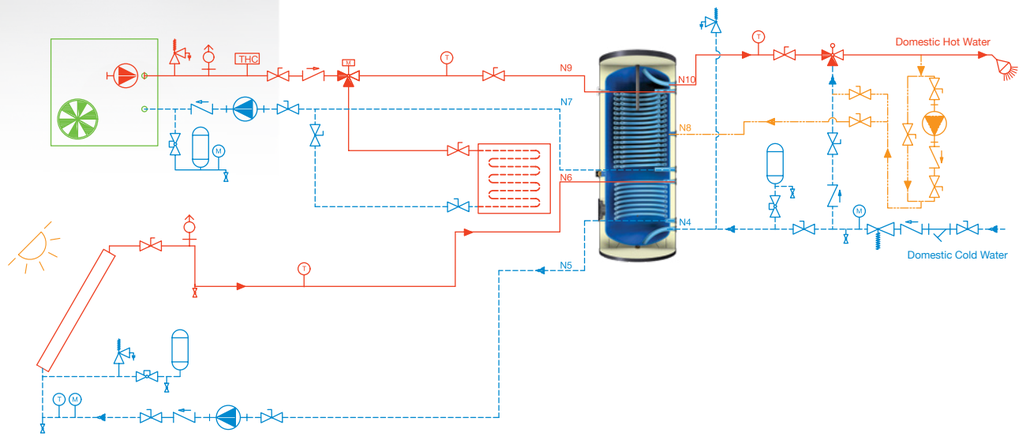
**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
10 bar

**Inner Surface Coating**
Tank inner surface is enamelled (glass-lined) in accordance with DIN 4753-3 standard.

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.

The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.



KODSAN

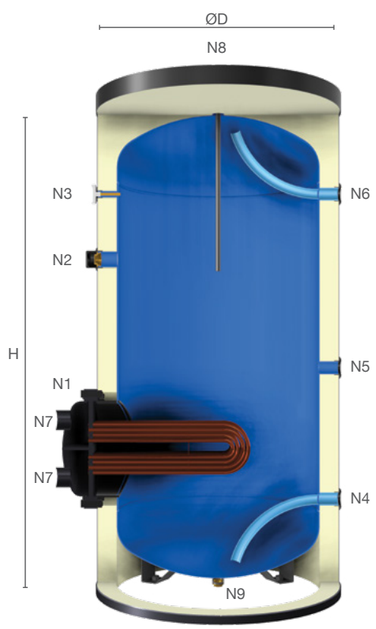
| | | 200L-500L | 800L-1000L |
|---|---|---|---|
| INSULATION | PU- 42kg/m³ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | STD/50 mm | x |
| | Soft PU- 15 kg/m³ soft polyurethane | x | STD/80 mm |
| | Soft PU- 26 kg/m³ flame retardant soft polyurethane | x | OPS/80 mm |
| | Izomax- 50kg/m³ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | x | OPS/80 mm |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | STD | x |
| | Vinleks- Artificial Leather | x | STD |
| | Izoqua- Waterproof PVC unit which is suitable for exterior usage. **(Optional only with the izomax insulation application)** | x | OPS |
| EQUIPMENT | Thermometer (0°C- 120°C) | STD/Ø63 | STD/Ø100 |
| | Steel Sensor Tube | STD/Ø9 mm 3 pieces | STD/Ø9 mm 3 pieces |
| | Cleaning & Control Flange | STD/Ø100 mm | STD/Ø125 mm |
| | Electric Heater | OPS/1½" | OPS/2" |
| CATHODIC PROTECTION | Magnesium Anode | STD | STD |
| | Electronic Anode | OPS | OPS |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | STD | STD |
| | Circle steel leg system that provides circular floor contact | x | x |

**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

| | Code | Unit | 11.17.14 | 11.17.16 | 11.17.18 | 11.17.20 | 11.17.21 |
|---|---|---|---|---|---|---|---|
| **Capacity** | V | lt | 200 | 300 | 500 | 800 | 1000 |
| **Insulation Type & Thickness** | i | mm | PU/50 | PU/50 | PU/50 | SPU/80 | SPU/80 |
| **Diameter** | ØD | mm | 580 | 580 | 740 | 910 | 1010 |
| **Height** | H | mm | 1340 | 1860 | 1845 | 2110 | 2200 |
| **Cleaning & Control Flange Diameter** | N1 | inch | Ø100 | Ø100 | Ø100 | Ø125 | Ø125 |
| **Electric Heater Connection** | N2 | inch | 1½" | 1½" | 1½" | 2" | 2" |
| **Thermometer / Steel Sensor Tube Connections** | N3 | inch/mm | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 |
| **Domestic Cold Water Inlet Connection** | N4 | inch | 1" | 1" | 1" | 1¼" | 1¼" |
| **Lower Heat Exchanger (Coil) Inlet/Outlet Connections** | N5-N6 | inch | 1" | 1" | 1" | 1" | 1" |
| **Upper Heat Exchanger (Coil) Inlet/Outlet Connections** | N7-N9 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Circulation Return Connection** | N8 | inch | 1" | 1" | 1" | 1¼" | 1¼" |
| **Domestic Hot Water Outlet Connection** | N10 | inch | 1" | 1" | 1" | 1¼" | 1¼" |
| **Magnesium Anode Connection** | N11 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Blind Connection** | N12 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Gross Weight** | G | kg | 113 | 156 | 165 | 310 | 340 |
| **Tilt Height** | R | mm | 1460 | 1950 | 1990 | 2300 | 2420 |

# 11.18 KCS SINGLE COPPER COIL WATER HEATER

KODSAN


**Volume**
800L-5000L

**Maximum Heating Power**
466 $kW_h$

**Maximum Solar Collector Area**
110 $m^2$

**Heat Exchanger Maximum Operating Temperature**
110°C

**Heat Exchanger Maximum Operating Pressure**
10 bar / 16 bar

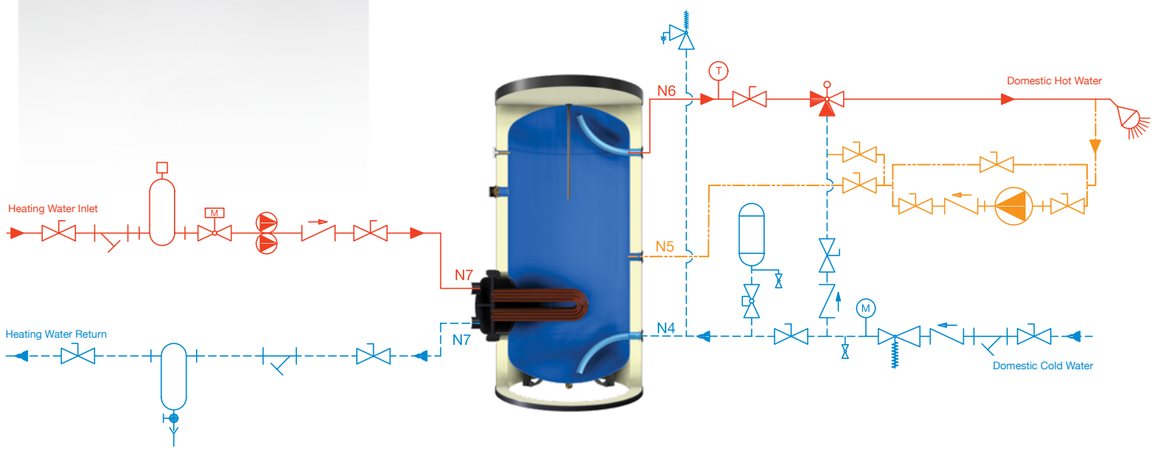
**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
10 bar

**Inner Surface Coating**
Tank inner surface is enamelled (glass-lined) in accordance with DIN 4753-3 standard.

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.

The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.



| | | 800L-1000L | 1500L-2000L | 2500L-3000L | 4000L-5000L |
|---|---|---|---|---|---|
| INSULATION | PU- 42kg/$m^3$ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | x | x | x | x |
| | Soft PU- 15 kg/$m^3$ soft polyurethane | STD/80 mm | STD/80 mm | STD/80 mm | STD/80 mm |
| | Soft PU- 26 kg/$m^3$ flame retardant soft polyurethane | OPS/80 mm | OPS/80 mm | OPS/80 mm | OPS/80 mm |
| | Izomax- 50kg/$m^3$ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | OPS/80 mm | OPS/80 mm<br>OPS/100 mm | OPS/80 mm | OPS/80 mm |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | x | x | x | x |
| | Vinleks- Artificial Leather | STD | STD | STD | STD |
| | Izoqua- Waterproof PVC unit which is suitable for exterior usage. **(Optional only with the izomax insulation application)** | OPS | OPS | OPS | OPS |
| EQUIPMENT | Thermometer (0°C- 120°C) | STD/Ø100 | STD/Ø100 | STD/Ø100 | STD/Ø100 |
| | Steel Sensor Tube | STD/Ø9 mm<br>2 pieces | STD/Ø9 mm<br>2 pieces | STD/Ø9 mm<br>2 pieces | STD/Ø9 mm<br>2 pieces |
| | Cleaning & Control Flange | STD/Ø400 mm | STD/Ø400 mm | STD/Ø400 mm-<br>STD/Ø500 mm | STD/Ø500 mm |
| | Electric Heater | OPS/2" | OPS/2" | OPS/2" | OPS/2" |
| CATHODIC PROTECTION | Magnesium Anode | x | x | x | x |
| | Electronic Anode | STD | STD | STD | STD |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | STD | STD-x | x | x |
| | Circle steel leg system that provides circular floor contact | x | x-STD | STD | STD |

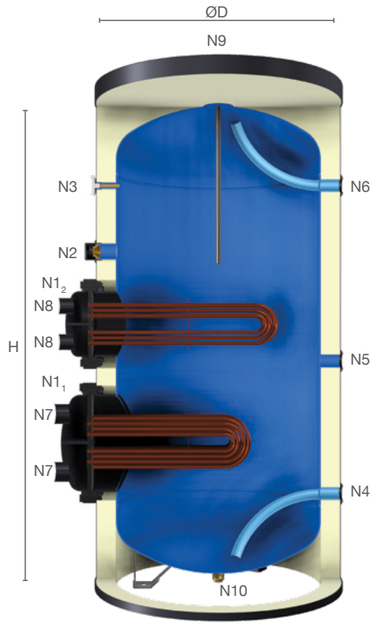
**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

| | Code | Unit | 11.18.20 | 11.18.21 | 11.18.22 | 11.18.23 | 11.18.24 | 11.18.25 | 11.18.26 | 11.18.27 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Capacity** | V | lt | 800 | 1000 | 1500 | 2000 | 2500 | 3000 | 4000 | 5000 |
| **Insulation Type & Thickness** | i | mm | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 |
| **Diameter** | ØD | mm | 910 | 1010 | 1120 | 1310 | 1460 | 1460 | 1660 | 1660 |
| **Height** | H | mm | 2110 | 2070 | 2375 | 2280 | 2160 | 2580 | 2575 | 3230 |
| **Heat Exchanger (Coil) Flange Diameter** | ØN1 | mm | Ø400 | Ø400 | Ø400 | Ø400 | Ø400 | Ø500 | Ø500 | Ø500 |
| **Electric Heater Connection** | N2 | inch | 2" | 2" | 2" | 2" | 2" | 2" | 2" | 2" |
| **Thermometer / Steel Sensor Tube Connections** | N3 | inch/mm | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 |
| **Domestic Cold Water Inlet Connection** | N4 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 2" | 2" |
| **Circulation Return Connection** | N5 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 2" | 2" |
| **Domestic Hot Water Outlet Connection** | N6 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 2" | 2" |
| **Heat Exchanger (Coil) Inlet/ Outlet Connections** | N7 | inch | 1½" | 2" | 2" | 2½" | 2½" | 2½" | 3" | 3" |
| **Electronic Anode Connection** | N8 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Blind Connection** | N9 | inch | 1¼" | 1¼" | 2" | 2" | 2" | 2" | 2" | 2" |
| **Gross Weight** | G | kg | 263 | 279 | 376 | 462 | 623 | 700 | 897 | 1048 |
| **Tilt Height** | R | mm | 2300 | 2305 | 2625 | 2630 | 2610 | 2965 | 3065 | 3635 |

The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have internal thread connection.

# 11.19 **KCD** DOUBLE COPPER COIL WATER HEATER

KODSAN


CUSTOM MADE

**Volume**
800L-5000L

**Upper Heat Exchanger Maximum Heating Power**
208 $kW_h$

**Lower Heat Exchanger Maximum Heating Power**
466 $kW_h$

**Maximum Solar Collector Area**
110 $m^2$

**Heat Exchanger Maximum Operating Temperature**
110°C

**Heat Exchanger Maximum Operating Pressure**
10 bar / 16 bar

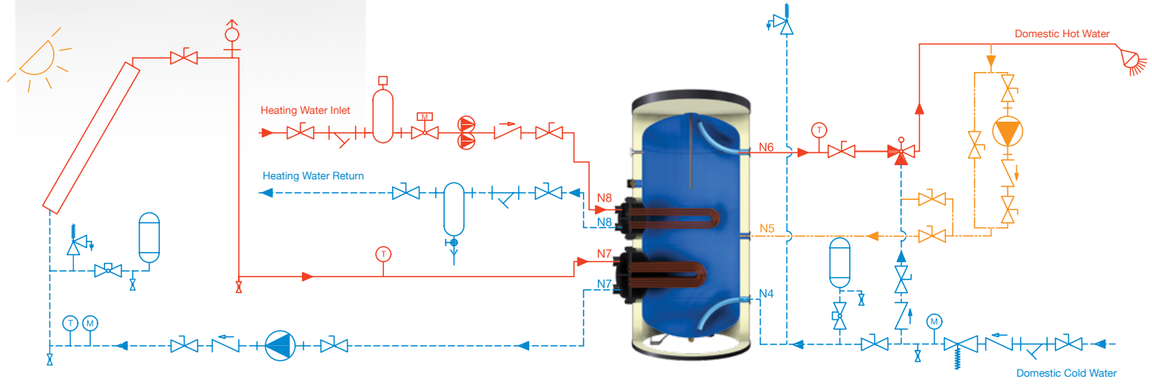
**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
10 bar

**Inner Surface Coating**
Tank inner surface is enamelled (glass-lined) in accordance with DIN 4753-3 standard.

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.

The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.



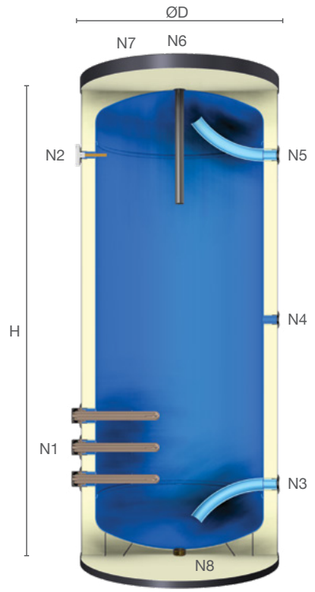
| | | | 800L-1000L | 1500L-2000L | 2500L-3000L | 4000L-5000L |
|---|---|---|---|---|---|---|
| INSULATION | PU- 42kg/m³ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | | x | x | x | x |
| | Soft PU- 15 kg/m³ soft polyurethane | | STD/80 mm | STD/80 mm | STD/80 mm | STD/80 mm |
| | Soft PU- 26 kg/m³ flame retardant soft polyurethane | | OPS/80 mm | OPS/80 mm | OPS/80 mm | OPS/80 mm |
| | Izomax- 50kg/m³ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | | OPS/80 mm | OPS/80 mm<br>OPS/100 mm | OPS/80 mm | OPS/80 mm |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | | x | x | x | x |
| | Vinleks- Artificial Leather | | STD | STD | STD | STD |
| | Izoqua- Waterproof PVC unit which is suitable for exterior usage.<br>**(Optional only with the izomax insulation application)** | | OPS | OPS | OPS | OPS |
| EQUIPMENT | Thermometer (0°C- 120°C) | | STD/Ø100 | STD/Ø100 | STD/Ø100 | STD/Ø100 |
| | Steel Sensor Tube | | STD/Ø9 mm<br>2 pieces | STD/Ø9 mm<br>2 pieces | STD/Ø9 mm<br>2 pieces | STD/Ø9 mm<br>2 pieces |
| | Cleaning & Control Flange | Upper Serpantine | STD/Ø274 mm | STD/Ø274-Ø324 mm | STD/Ø400 mm | STD/Ø400 mm |
| | | Lower Serpantine | STD/Ø400 mm | STD/Ø400 mm | STD/Ø400-Ø500 mm | STD/Ø500 mm |
| | Electric Heater | | OPS/2" | OPS/2" | OPS/2" | OPS/2" |
| CATHODIC PROTECTION | Magnesium Anode | | x | x | x | x |
| | Electronic Anode | | STD | STD | STD | STD |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | | STD | STD-x | x | x |
| | Circle steel leg system that provides circular floor contact | | x | x-STD | STD | STD |

**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

| | Code | Unit | 11.19.20 | 11.19.21 | 11.19.22 | 11.19.23 | 11.19.24 | 11.19.25 | 11.19.26 | 11.19.27 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Capacity** | V | lt | 800 | 1000 | 1500 | 2000 | 2500 | 3000 | 4000 | 5000 |
| **Insulation Type & Thickness** | i | mm | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 |
| **Diameter** | ØD | mm | 910 | 1010 | 1120 | 1310 | 1460 | 1460 | 1660 | 1660 |
| **Height** | H | mm | 2110 | 2070 | 2375 | 2280 | 2160 | 2580 | 2575 | 3230 |
| **Lower Heat Exchanger (Coil) Flange Connection** | $ØN1_{-1}$ | mm | Ø400 | Ø400 | Ø400 | Ø400 | Ø400 | Ø500 | Ø500 | Ø500 |
| **Upper Heat Exchanger (Coil) Flange Connection** | $ØN1_{-2}$ | mm | Ø274 | Ø274 | Ø274 | Ø324 | Ø400 | Ø400 | Ø400 | Ø400 |
| **Electric Heater Connection** | N2 | inch | 2" | 2" | 2" | 2" | 2" | 2" | 2" | 2" |
| **Thermometer / Steel Sensor Tube Connections** | N3 | inch/mm | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 |
| **Domestic Cold Water Inlet Connection** | N4 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 2" | 2" |
| **Circulation Return Connection** | N5 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 2" | 2" |
| **Domestic Hot Water Outlet Connection** | N6 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 2" | 2" |
| **Lower Heat Exchanger (Coil) Inlet/Outlet Connections** | N7 | inch | 2½" | 2½" | 2½" | 2½" | 2½" | 2½" | 3" | 3" |
| **Upper Heat Exchanger (Coil) Inlet/Outlet Connections** | N8 | inch | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 2" | 2" | 2" |
| **Electronic Anode Connection** | N9 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Blind Connection** | N10 | inch | 1¼" | 1¼" | 2" | 2" | 2" | 2" | 2" | 2" |
| **Gross Weight** | G | kg | 309 | 327 | 427 | 526 | 697 | 775 | 981 | 1136 |
| **Tilt Height** | R | mm | 2300 | 2305 | 2625 | 2630 | 2610 | 2965 | 3065 | 3635 |

The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have internal thread connection.

# 11.23 **KEB** ELECTRIC WATER HEATER


**Volume**
100L – 5000L

**Maximum Electrical Heating Power**
105 $kW_e$

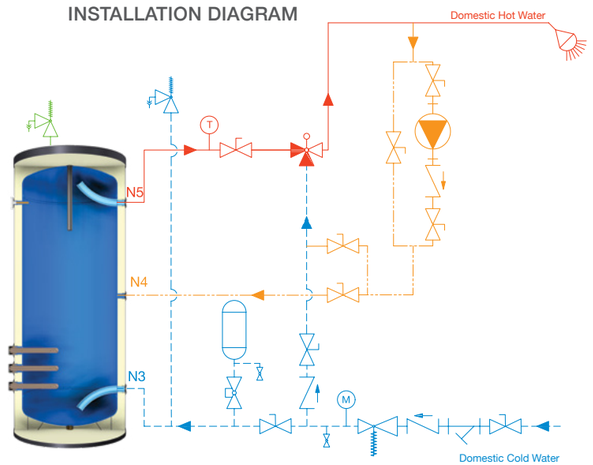
**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
10 Bar

**Inner Surface Coating**
Tank inner surface is enamelled (glass-lined) in accordance with DIN 4753-3 standard.

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.

The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.



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| | | 100L-500L | 800L-1000L | 1500L-2000L | 2500L-3000L | 4000L-5000L |
|---|---|---|---|---|---|---|
| INSULATION | PU- 42kg/m³ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | STD/50 mm | x | x | x | x |
| | Soft PU- 15 kg/m³ soft polyurethane | x | x | x | x | x |
| | Soft PU- 26 kg/m³ flame retardant soft polyurethane | x | STD/80 mm | STD/80 mm | STD/80 mm | STD/80 mm |
| | Izomax- 50kg/m³ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | x | OPS/80 mm | OPS/80 mm<br>OPS/100 mm | OPS/80 mm | OPS/80 mm |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | x | x | x | x | x |
| | Sheet Metal- Electrostatic Powder Painted Sheet | STD | x | x | x | x |
| | Vinleks- Artificial Leather | x | STD | STD | STD | STD |
| | Izoqua- Waterproof PVC unit which is suitable for exterior usage.<br>**(Optional only with the izomax insulation application)** | x | OPS | OPS | OPS | OPS |
| EQUIPMENT | Thermometer (0°C- 120°C) | STD/Ø63 | STD/Ø100 | STD/Ø100 | STD/Ø100 | STD/Ø100 |
| | Steel Sensor Tube | x | x | x | x | x |
| | Electric Heater | STD/ 1½"<br>2kW-30kW | STD/ 2"<br>2kW-105kW | STD/ 2"<br>2kW-105kW | STD/ 2"<br>2kW-105kW | STD/ 2"<br>2kW-105kW |
| | Residual Current Device | OPS | OPS | OPS | OPS | OPS |
| | T&P Valve Connection | STD/ ¾" | STD/ ¾" | STD/ ¾" | STD/ ¾" | STD/ ¾" |
| CATHODIC PROTECTION | Magnesium Anode | STD | STD | STD | STD | STD |
| | Electronic Anode | OPS | OPS | OPS | OPS | OPS |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | STD | STD | STD-x | x | x |
| | Circle steel leg system that provides circular floor contact | x | x | x-STD | STD | STD |

**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

| | Code | Unit | 11.23.11 | 11.23.13 | 11.23.14 | 11.23.16 | 11.23.18 | 11.23.20 | 11.23.21 | 11.23.22 | 11.23.23 | 11.23.24 | 11.23.25 | 11.23.26 | 11.23.27 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Capacity** | V | lt | 100 | 160 | 200 | 300 | 500 | 800 | 1000 | 1500 | 2000 | 2500 | 3000 | 4000 | 5000 |
| **Insulation Type & Thickness** | i | mm | PU/50 | PU/50 | PU/50 | PU/50 | PU/50 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 |
| **Diameter** | ØD | mm | 480 | 580 | 580 | 580 | 740 | 910 | 1010 | 1120 | 1310 | 1460 | 1460 | 1660 | 1660 |
| **Height** | H | mm | 1110 | 1135 | 1340 | 1860 | 1845 | 2110 | 2070 | 2375 | 2280 | 2160 | 2580 | 2575 | 3230 |
| **Electric Heater Connection** | N1 | inch | THE HEATER MAY BE CHOSEN OPTIONALLY | | | | | | | | | | | | |
| **Thermometer / Steel Sensor Tube Connections** | N2 | inch/mm | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 |
| **Domestic Cold Water Inlet Connection** | N3 | inch | ¾" | ¾" | ¾" | ¾" | 1" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 1½" | 1½" |
| **Circulation Return Connection** | N4 | inch | ¾" | ¾" | ¾" | ¾" | ¾" | 1" | 1" | 1" | 1" | 1" | 1¼" | 1¼" | 1¼" |
| **Domestic Hot Water Outlet Connection** | N5 | inch | ¾" | ¾" | ¾" | ¾" | 1" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 1½" | 1½" |
| **Magnesium Anode Connection** | N6 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **P&T Valve Connection** | N7 | inch | ¾" | ¾" | ¾" | ¾" | ¾" | ¾" | ¾" | ¾" | ¾" | ¾" | ¾" | ¾" | ¾" |
| **Blind Connection** | N8 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 2" | 2" | 2" | 2" | 2" | 2" |
| **Gross Weight** | G | kg | THE WEIGHT OF THE PRODUCTS MAY VARY ACCORDING TO CHOSEN HEATER/S.<br>THE WEIGHT OF THE PRODUCTS WITHOUT HEATER/S ARE EQUAL TO ENAMELED ACCUMULATION TANK. | | | | | | | | | | | | |
| **Tilt Height** | R | mm | 1210 | 1275 | 1460 | 1950 | 1990 | 2300 | 2305 | 2625 | 2630 | 2610 | 2965 | 3065 | 3635 |

The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have internal thread connection.

# 51.11 **KAT** ENAMELLED ACCUMULATION TANK

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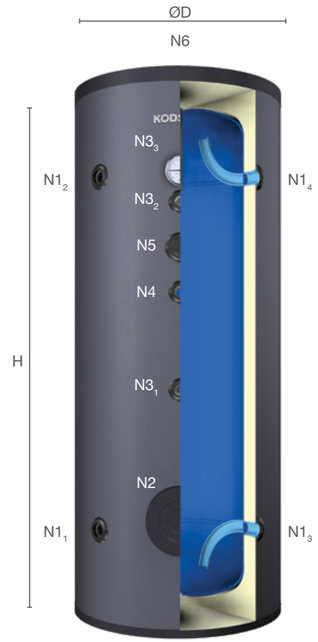



**Volume**
100L – 5000L

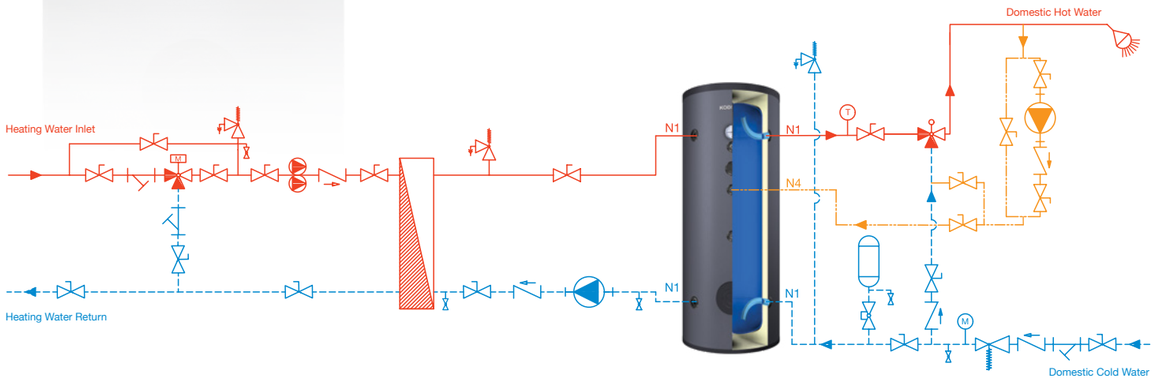
**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
10 Bar

**Inner Surface Coating**
Tank inner surface is enamelled (glass-lined) in accordance with DIN 4753-3 standard.

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.

The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.

| | | 100L-500L | 800L-1000L | 1500L-2000L | 2500L-3000L | 4000L-5000L |
|---|---|---|---|---|---|---|
| INSULATION | PU- 42kg/m³ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | STD/50 mm | x | x | x | x |
| | Soft PU- 15 kg/m³ soft polyurethane | x | STD/80 mm | STD/80 mm | STD/80 mm | STD/80 mm |
| | Soft PU- 26 kg/m³ flame retardant soft polyurethane | x | OPS/80 mm | OPS/80 mm | OPS/80 mm | OPS/80 mm |
| | Izomax- 50kg/m³ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | x | OPS/80 mm | OPS/80 mm<br>OPS/100 mm | OPS/80 mm | OPS/80 mm |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | STD | x | x | x | x |
| | Vinleks- Artificial Leather | x | STD | STD | STD | STD |
| | Izoqua- Waterproof PVC unit which is suitable for exterior usage.<br>**(Optional only with the izomax insulation application)** | x | OPS | OPS | OPS | OPS |
| EQUIPMENT | Thermometer (0°C- 120°C) | STD/Ø63 | STD/Ø100 | STD/Ø100 | STD/Ø100 | STD/Ø100 |
| | Steel Sensor Tube | STD/Ø9 mm<br>2 pieces | STD/Ø9 mm<br>2 pieces | STD/Ø9 mm<br>2 pieces | STD/Ø9 mm<br>2 pieces | STD/Ø9 mm<br>2 pieces |
| | Cleaning & Control Flange | STD/Ø100 mm | STD/Ø125 mm<br>OPS/Ø400 mm | STD/Ø125 mm<br>OPS/Ø400 mm | STD/Ø125 mm<br>OPS/Ø400 mm | STD/Ø125 mm<br>OPS/Ø400 mm |
| | Electric Heater | OPS/1½" | OPS/2" | OPS/2" | OPS/2" | OPS/2" |
| CATHODIC PROTECTION | Magnesium Anode | STD | STD | STD | STD | STD |
| | Electronic Anode | OPS | OPS | OPS | OPS | OPS |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | STD | STD | STD-x | x | x |
| | Circle steel leg system that provides circular floor contact | x | x | x-STD | STD | STD |

**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

| | Code | Unit | 51.11.11 | 51.11.13 | 51.11.14 | 51.11.16 | 51.11.18 | 51.11.20 | 51.11.21 | 51.11.22 | 51.11.23 | 51.11.24 | 51.11.25 | 51.11.26 | 51.11.27 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Capacity** | V | lt | 100 | 160 | 200 | 300 | 500 | 800 | 1000 | 1500 | 2000 | 2500 | 3000 | 4000 | 5000 |
| **Insulation Type & Thickness** | i | mm | PU/50 | PU/50 | PU/50 | PU/50 | PU/50 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 |
| **Diameter** | ØD | mm | 480 | 580 | 580 | 580 | 740 | 910 | 1010 | 1120 | 1310 | 1460 | 1460 | 1660 | 1660 |
| **Height** | H | mm | 1110 | 1135 | 1340 | 1860 | 1845 | 2110 | 2070 | 2375 | 2280 | 2160 | 2580 | 2575 | 3230 |
| **Primary/Secondary Energy Inlet/Outlet Connections** | N1 | inch | 1" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 1½" | 1½" | 2" | 2" | 3" | 3" |
| **Cleaning & Control Flange Diameter** | N2 | inch | Ø100 | Ø100 | Ø100 | Ø100 | Ø100 | Ø125 | Ø125 | Ø125 | Ø125 | Ø125 | Ø125 | Ø125 | Ø125 |
| **Thermometer / Steel Sensor Tube Connections** | N3 | inch/mm | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 | ½"/ 9 |
| **Circulation Return Connection** | N4 | inch | ¾" | ¾" | ¾" | ¾" | ¾" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 2" | 2" |
| **Electric Heater Connection** | N5 | inch | 1½" | 1½" | 1½" | 1½" | 1½" | 2" | 2" | 2" | 2" | 2" | 2" | 2" | 2" |
| **Magnesium Anode Connection** | N6 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Blind Connection** | N7 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 2" | 2" | 2" | 2" | 2" | 2" |
| **Gross Weight** | G | kg | 40 | 58 | 65 | 75 | 113 | 190 | 205 | 295 | 370 | 520 | 575 | 760 | 890 |
| **Tilt Height** | R | mm | 1210 | 1275 | 1460 | 1950 | 1990 | 2300 | 2305 | 2625 | 2630 | 2610 | 2965 | 3065 | 3635 |

The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have internal thread connection.

KODSAN reserves the right to change the product specifications, technical information and installation diagrams without any notifications.
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# 101.12 **KCB-S** SINGLE COIL COMBI BUFFER TANK

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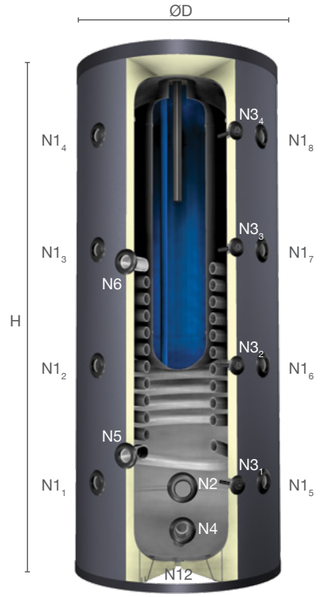



BULK ORDER

**Volume**
500L/100L-2000L/350L

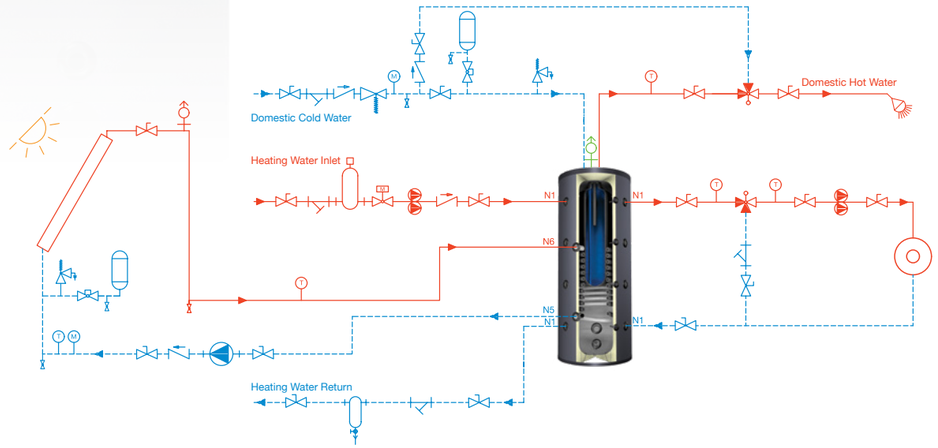
**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
Inner Tank: 6 bar / Outer Tank: 3 bar

**Inner Surface Coating**
Tank inner surface is enamelled (glass-lined) in accordance with DIN 4753-3 standard.

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.

The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.

| | | 500L/ 100L-160L | 800L-1000L/ 160L-200L | 1500L/ 200L-350L | 2000L/ 200L-350L |
|---|---|---|---|---|---|
| INSULATION | PU- 42kg/m³ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | STD/50 mm | x | x | x |
| | Soft PU- 15 kg/m³ soft polyurethane | x | STD/80 mm | STD/80 mm | STD/80 mm |
| | Soft PU- 26 kg/m³ flame retardant soft polyurethane | x | OPS/80 mm | OPS/80 mm | OPS/80 mm |
| | Izomax- 50kg/m³ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | x | x | x | x |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | STD | x | x | x |
| | Vinleks- Artificial Leather | x | STD | STD | STD |
| | Izoqua- Waterproof PVC unit which is suitable for exterior usage. **(Optional only with the izomax insulation application)** | x | OPS | OPS | OPS |
| EQUIPMENT | Thermometer (0°C- 120°C) | OPS/Ø63 | OPS/Ø100 | OPS/Ø100 | OPS/Ø100 |
| | Steel Sensor Tube | STD/Ø9 mm 4 pieces | STD/Ø9 mm 4 pieces | STD/Ø9 mm 4 pieces | STD/Ø9 mm 4 pieces |
| | Cleaning & Control Flange | STD/Ø100 mm | STD/Ø125 mm | STD/Ø125 mm | STD/Ø125 mm |
| | Electric Heater | OPS/1½" | OPS/2" | OPS/2" | OPS/2" |
| CATHODIC PROTEC-TION | Magnesium Anode | STD | STD | STD | STD |
| | Electronic Anode | OPS | OPS | OPS | OPS |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | STD | STD | STD | x |
| | Circle steel leg system that provides circular floor contact | x | x | x | STD |

**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

| | Code | Unit | 101.12.18.1 | 101.12.18.2 | 101.12.20.2 | 101.12.21.2 | 101.12.21.3 | 101.12.22.3 | 101.12.22.4 | 101.12.23.3 | 101.12.23.4 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Capacity** | V | lt | 500/100 | 500/160 | 800/160 | 1000/160 | 1000/200 | 1500/200 | 1500/350 | 2000/200 | 2000/350 |
| **Insulation Type & Thickness** | i | mm | PU/50 | PU/50 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 |
| **Diameter** | ØD | mm | 740 | 740 | 910 | 1010 | 1010 | 1120 | 1120 | 1310 | 1260 |
| **Height** | H | mm | 1845 | 1845 | 2110 | 2070 | 2070 | 2375 | 375 | 2280 | 2280 |
| **Primary/Secondary Energy Inlet/Outlet Connections** | N1 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 1½" | 1½" |
| **Electric Heater Connection** | N2 | inch | 1½" | 1½" | 2" | 2" | 2" | 2" | 2" | 2" | 2" |
| **Thermometer & Sensor Tube Connections** | N3 | inch | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" |
| **Drain Connection** | N4 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 1½" | 1½" |
| **Heat Exchanger (Serpantine) Inlet/Outlet Connections** | N5-N6 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Domestic Cold Water Inlet Connection** | N7 | inch | ¾" | ¾" | ¾" | ¾" | ¾" | ¾" | 1" | 1" | 1" |
| **Domestic Hot Water Outlet Connection** | N8 | inch | ¾" | ¾" | ¾" | ¾" | ¾" | ¾" | 1" | 1" | 1" |
| **Inner Tank Air Ventilation Connections** | N9 | inch | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" |
| **Outer Tank Air Ventilation Connections** | N10 | inch | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" |
| **Magnesium Anode Connection** | N11 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Blind Connection** | N12 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 2" | 2" | 2" | 2" |
| **Gross Weight** | G | kg | 176 | 190 | 290 | 305 | 317 | 415 | 427 | 510 | 522 |
| **Tilt Height** | R | mm | 1990 | 1990 | 2300 | 2305 | 2305 | 2625 | 2625 | 2630 | 2605 |

The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have internal thread connection.

# 51.12 **KGA** GALVANIZED ACCUMULATION TANK

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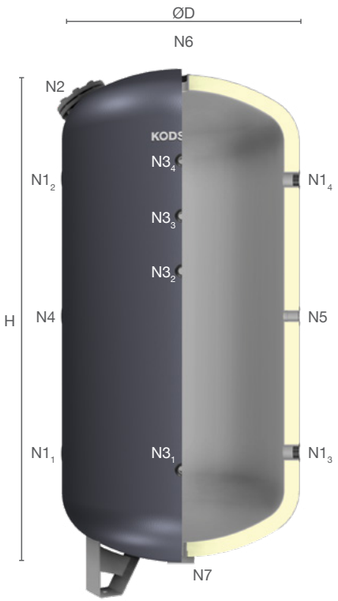



**Volume**
800L – 5000L

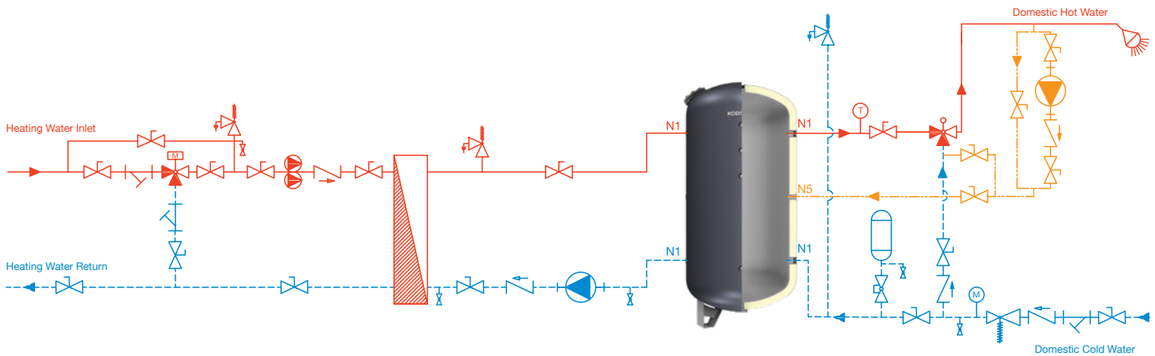
**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
10 Bar / 16 bar

**Inner Surface Coating**
Tank is made of S355J2 quality steel and galvanized in accordance with TS EN ISO 1461 standard.

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.

The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.

| | | 800L-1000L | 1500L-2000L | 2500L-3000L | 4000L-5000L |
|---|---|---|---|---|---|
| INSULATION | PU- 42kg/m³ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | x | x | x | x |
| | Soft PU- 15 kg/m³ soft polyurethane | STD/60 mm | STD/60 mm | STD/60 mm | STD/60 mm |
| | Soft PU- 26 kg/m³ flame retardant soft polyurethane | OPS/60 mm | OPS/60 mm | OPS/60 mm | OPS/60 mm |
| | Izomax- 50kg/m³ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | x | x | x | x |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | x | x | x | x |
| | Vinleks- Artificial Leather | STD | STD | STD | STD |
| | Izoqua- Waterproof PVC unit which is suitable for exterior usage. **(Optional only with the izomax insulation application)** | x | x | x | x |
| EQUIPMENT | Thermometer (0°C- 120°C) | x | x | x | x |
| | Sensor Tube | OPS/¾" 4 pieces | OPS/¾" 4 pieces | OPS/¾" 4 pieces | OPS/¾" 4 pieces |
| | Cleaning & Control Flange | STD/DN100 | STD/DN125 | STD/DN150 | STD/DN150 |
| | Electric Heater | OPS/1"-1¼" | OPS/1½" | OPS/2" | OPS/2" |
| CATHODIC PROTECTION | Magnesium Anode | x | x | x | x |
| | Electronic Anode | x | x | x | x |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | STD | STD | STD | STD |
| | Circle steel leg system that provides circular floor contact | x | x | x | x |

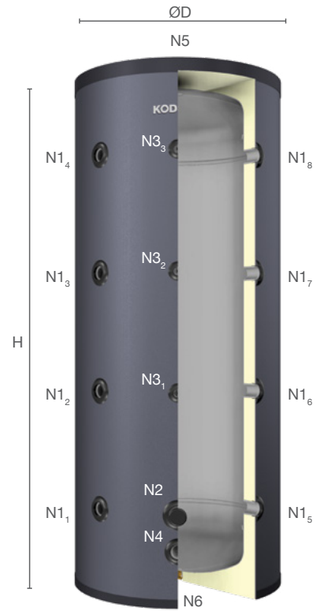
**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

| | Code | Unit | 51.12.20 | 51.12.21 | 51.12.22 | 51.12.23 | 51.12.24 | 51.12.25 | 51.12.26 | 51.12.27 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Capacity** | V | lt | 800 | 1000 | 1500 | 2000 | 2500 | 3000 | 4000 | 5000 |
| **Insulation Type & Thickness** | i | mm | SPU/60 | SPU/60 | SPU/60 | SPU/60 | SPU/60 | SPU/60 | SPU/60 | SPU/60 |
| **Diameter** | ØD | mm | 870 | 970 | 1080 | 1270 | 1420 | 1420 | 1620 | 1620 |
| **Height** | H | mm | 2100 | 2090 | 2150 | 2650 | 2480 | 2880 | 2820 | 3420 |
| **Primary/Secondary Energy Inlet/Outlet Connections** | N1 | inch | 1½" | 2" | 2½" | 2½" | 3" | 3" | 3" | 3" |
| **Cleaning & Control Flange Diameter** | N2 | DN | DN100 | DN100 | DN125 | DN125 | DN150 | DN150 | DN150 | DN150 |
| **Thermometer & Sensor Connections** | N3 | inch | ¾" | ¾" | ¾" | ¾" | ¾" | ¾" | ¾" | ¾" |
| **Electric Heater Connection** | N4 | inch | 1" | 1¼" | 1½" | 1½" | 2" | 2" | 2" | 2" |
| **Circulation Return Connection** | N5 | inch | 1" | 1¼" | 1½" | 1½" | 2" | 2" | 2" | 2" |
| **Air Ventilation Connection** | N6 | inch | 1½" | 2" | 2½" | 2½" | 3" | 3" | 3" | 3" |
| **Blind Connection** | N7 | inch | 1" | 1¼" | 1½" | 1½" | 2" | 2" | 2" | 2" |
| **Gross Weight** | G | kg | 220 | 250 | 360 | 420 | 490 | 540 | 820 | 930 |
| **Tilt Height** | R | mm | 2275 | 2305 | 2475 | 2920 | 2860 | 3215 | 3255 | 3790 |

The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have internal thread connection.

# 101.13 **KBT-B** BUFFER TANK

KODSAN


BULK ORDER

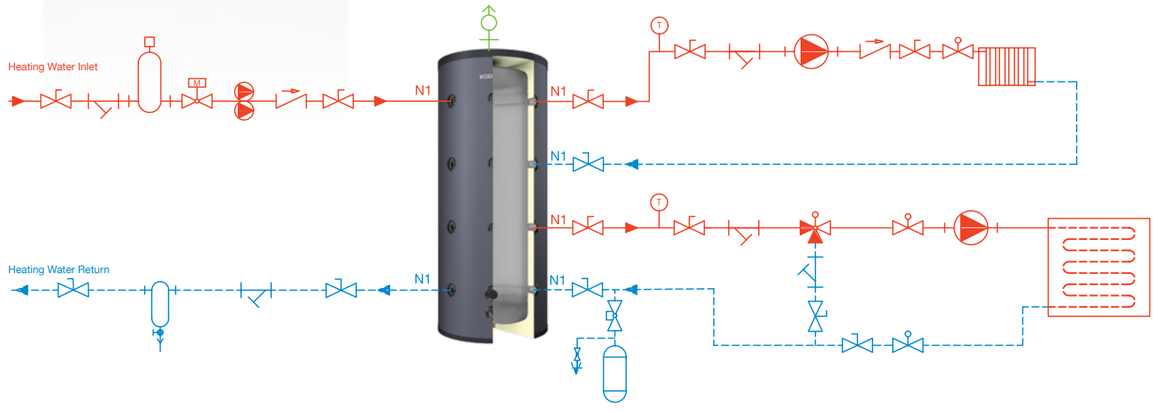
**Volume**
100L – 5000L

**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
6 Bar

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.

| | | 100L-300L | 500L | 800L-1000L | 1500L-2000L | 2500L-3000L | 4000L-5000L |
|---|---|---|---|---|---|---|---|
| INSULATION | PU- 42kg/m³ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | STD/50 mm | STD/50 mm | x | x | x | x |
| | Soft PU- 15 kg/m³ soft polyurethane | x | x | STD/80 mm | STD/80 mm | STD/80 mm | STD/80 mm |
| | Soft PU- 26 kg/m³ flame retardant soft polyurethane | x | x | OPS/80 mm | OPS/80 mm | OPS/80 mm | OPS/80 mm |
| | Izomax- 50kg/m³ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | x | x | OPS/80 mm | OPS/80 mm<br>OPS/100 mm | OPS/80 mm | OPS/80 mm |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | STD | STD | x | x | x | x |
| | Vinleks- Artificial Leather | x | x | STD | STD | STD | STD |
| | Izoqua- Waterproof PVC unit which is suitable for exterior usage. **(Optional only with the izomax insulation application)** | x | x | OPS | OPS | OPS | OPS |
| EQUIPMENT | Thermometer (0°C- 120°C) | OPS/Ø63 | OPS/Ø63 | OPS/Ø100 | OPS/Ø100 | OPS/Ø100 | OPS/Ø100 |
| | Steel Sensor Tube | OPS/Ø9 mm 3 pieces | OPS/Ø9 mm 3 pieces | OPS/Ø9 mm 3 pieces | OPS/Ø9 mm 3 pieces | OPS/Ø9 mm 3 pieces | OPS/Ø9 mm 3 pieces |
| | Cleaning & Control Flange | x | x | x | x | x | x |
| | Electric Heater | x | OPS/1½" | OPS/2" | OPS/2" | OPS/2" | OPS/2" |
| | Air Ventilation Connection | STD/1¼" | STD/1¼" | STD/1¼" | STD/1¼" | STD/1¼" | STD/1¼" |
| CATHODIC PROTECTION | Magnesium Anode | x | x | x | x | x | x |
| | Electronic Anode | x | x | x | x | x | x |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | STD | STD | STD | STD-x | x | x |
| | Circle steel leg system that provides circular floor contact | x | x | x | x-STD | STD | STD |

**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

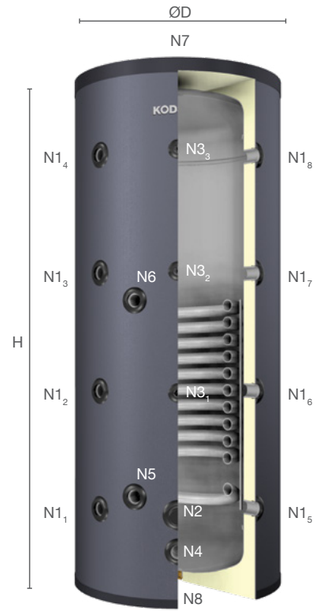
| | Code | Unit | 101.13.11 | 101.13.13 | 101.13.14 | 101.13.16 | 101.13.18 | 101.13.20 | 101.13.21 | 101.13.22 | 101.13.23 | 101.13.24 | 101.13.25 | 101.13.26 | 101.13.27 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Capacity** | V | lt | 100 | 160 | 200 | 300 | 500 | 800 | 1000 | 1500 | 2000 | 2500 | 3000 | 4000 | 5000 |
| **Insulation Type & Thickness** | i | mm | PU/50 | PU/50 | PU/50 | PU/50 | PU/50 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 |
| **Diameter** | ØD | mm | 480 | 580 | 580 | 700 | 740 | 910 | 1010 | 1120 | 1310 | 1460 | 1460 | 1660 | 1660 |
| **Height** | H | mm | 1110 | 1135 | 1340 | 1220 | 1845 | 2110 | 2070 | 2375 | 2280 | 2160 | 2580 | 2575 | 3230 |
| **Primary/Secondary Energy Inlet/Outlet Connections*** | N1 | inch | 1" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 1½" | 1½" | 2" | 2" | 3" | 3" |
| **Electric Heater Connection** | N2 | inch | - | - | - | - | 1½" | 2" | 2" | 2" | 2" | 2" | 2" | 2" | 2" |
| **Thermometer & Sensor Tube Connections** | N3 | inch | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" |
| **Drain Connection** | N4 | inch | 1" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 1½" | 1½" | 2" | 2" | 3" | 3" |
| **Air Ventilation Connection** | N5 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Blind Connection** | N6 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 2" | 2" | 2" | 2" | 2" | 2" |
| **Gross Weight** | G | kg | 36 | 54 | 60 | 70 | 106 | 183 | 197 | 286 | 360 | 510 | 563 | 745 | 870 |
| **Tilt Height** | R | mm | 1210 | 1275 | 1460 | 1410 | 1990 | 2300 | 2305 | 2625 | 2630 | 2610 | 2965 | 3065 | 3635 |

* : The number of energy inlet/outlet connections is 4 for 100L-300L products, 2 for the primary circuit, 2 for the secondary circuit; and 8 for 500L-5000L products, 4 for the primary circuit, and 4 for the secondary circuit.

The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have internal thread connection.

# 101.14 **KBT-S** SINGLE COIL BUFFER TANK

KODSAN


BULK ORDER

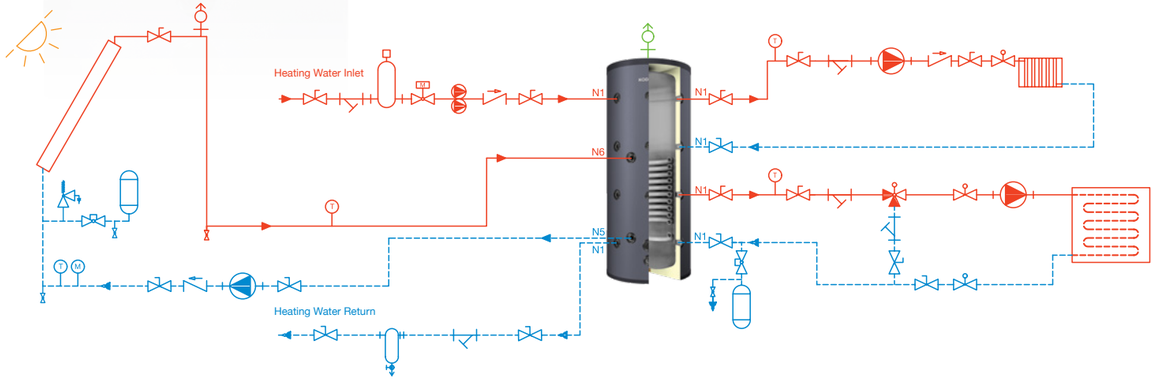
**Volume**
160L – 3000L

**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
6 Bar

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.

| | | 160L-300L | 500L | 800L-1000L | 1500L-2000L | 2500L-3000L |
|---|---|---|---|---|---|---|
| INSULATION | PU- 42kg/m³ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | STD/50 mm | STD/50 mm | x | x | x |
| | Soft PU- 15 kg/m³ soft polyurethane | x | x | STD/80 mm | STD/80 mm | STD/80 mm |
| | Soft PU- 26 kg/m³ flame retardant soft polyurethane | x | x | OPS/80 mm | OPS/80 mm | OPS/80 mm |
| | Izomax- 50kg/m³ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | x | x | OPS/80 mm | OPS/80 mm<br>OPS/100 mm | OPS/80 mm |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | STD | STD | x | x | x |
| | Vinleks- Artificial Leather | x | x | STD | STD | STD |
| | Izoqua- Waterproof PVC unit which is suitable for exterior usage. **(Optional only with the izomax insulation application)** | x | x | OPS | OPS | OPS |
| EQUIPMENT | Thermometer (0°C- 120°C) | OPS/Ø63 | OPS/Ø63 | OPS/Ø100 | OPS/Ø100 | OPS/Ø100 |
| | Steel Sensor Tube | OPS/Ø9 mm<br>3 pieces | OPS/Ø9 mm<br>3 pieces | OPS/Ø9 mm<br>3 pieces | OPS/Ø9 mm<br>3 pieces | OPS/Ø9 mm<br>3 pieces |
| | Cleaning & Control Flange | x | x | x | x | x |
| | Electric Heater | x | OPS/1½" | OPS/2" | OPS/2" | OPS/2" |
| | Air Ventilation Connection | STD/1¼" | STD/1¼" | STD/1¼" | STD/1¼" | STD/1¼" |
| CATHODIC PROTEC-TION | Magnesium Anode | x | x | x | x | x |
| | Electronic Anode | x | x | x | x | x |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | STD | STD | STD | STD-x | x |
| | Circle steel leg system that provides circular floor contact | x | x | x | x-STD | STD |

**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

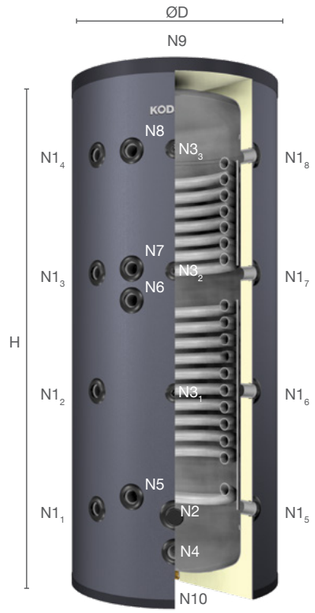
| | Code | Unit | 101.14.13 | 101.14.14 | 101.14.16 | 101.14.18 | 101.14.20 | 101.14.21 | 101.14.22 | 101.14.23 | 101.14.24 | 101.14.25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Capacity** | V | lt | 160 | 200 | 300 | 500 | 800 | 1000 | 1500 | 2000 | 2500 | 3000 |
| **Insulation Type & Thickness** | i | mm | PU/50 | PU/50 | PU/50 | PU/50 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 |
| **Diameter** | ØD | mm | 580 | 580 | 700 | 740 | 910 | 1010 | 1120 | 1310 | 1460 | 1460 |
| **Height** | H | mm | 1135 | 1340 | 1220 | 1845 | 2110 | 2070 | 2375 | 2280 | 2160 | 2580 |
| **Primary/Secondary Energy Inlet/Outlet Connections*** | N1 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 1½" | 1½" | 2" | 2" |
| **Electric Heater Connection** | N2 | inch | - | - | - | 1½" | 2" | 2" | 2" | 2" | 2" | 2" |
| **Thermometer & Sensor Tube Connections** | N3 | inch | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" |
| **Drain Connection** | N4 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 1½" | 1½" | 2" | 2" |
| **Heat Exchanger (Coil) Inlet/ Outlet Connections** | N5-N6 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" |
| **Air Ventilation Connection** | N7 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Blind Connection** | N8 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 2" | 2" | 2" | 2" |
| **Gross Weight** | G | kg | 70 | 71 | 93 | 143 | 238 | 252 | 351 | 445 | 640 | 722 |
| **Tilt Height** | R | mm | 1275 | 1460 | 1410 | 1990 | 2300 | 2305 | 2625 | 2630 | 2610 | 2965 |

* : The number of energy inlet/outlet connections is 4 for 100L-300L products, 2 for the primary circuit, 2 for the secondary circuit; and 8 for 500L-3000L products, 4 for the primary circuit, and 4 for the secondary circuit.

The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have internal thread connection.

# 101.15 **KBT-D** DOUBLE COIL BUFFER TANK

KODSAN


BULK ORDER

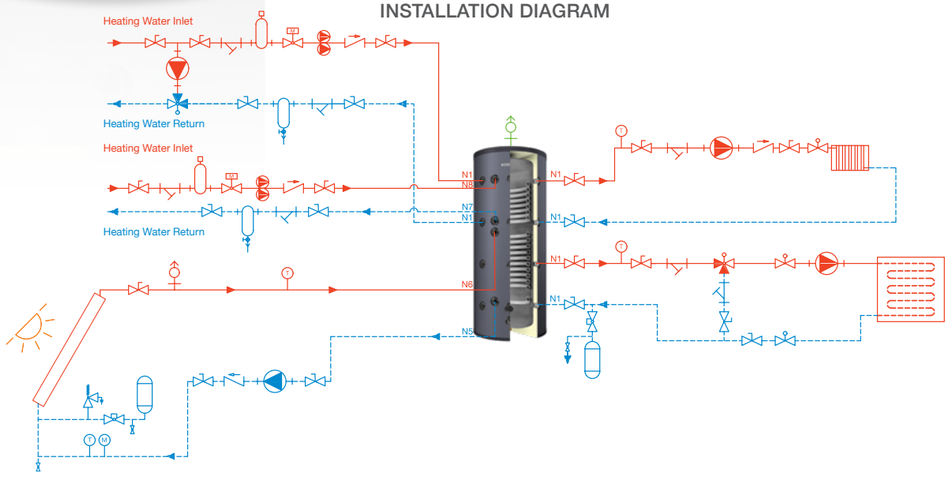
**Volume**
160L – 3000L

**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
6 Bar

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.

| | | 160L-300L | 500L | 800L-1000L | 1500L-2000L | 2500L-3000L |
|---|---|---|---|---|---|---|
| INSULATION | PU- 42kg/m³ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | STD/50 mm | STD/50 mm | x | x | x |
| | Soft PU- 15 kg/m³ soft polyurethane | x | x | STD/80 mm | STD/80 mm | STD/80 mm |
| | Soft PU- 26 kg/m³ flame retardant soft polyurethane | x | x | OPS/80 mm | OPS/80 mm | OPS/80 mm |
| | Izomax- 50kg/m³ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | x | x | OPS/80 mm | OPS/80 mm<br>OPS/100 mm | OPS/80 mm |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | STD | STD | x | x | x |
| | Vinleks- Artificial Leather | x | x | STD | STD | STD |
| | Izoqua- Waterproof PVC unit which is suitable for exterior usage.<br>**(Optional only with the izomax insulation application)** | x | x | OPS | OPS | OPS |
| EQUIPMENT | Thermometer (0°C- 120°C) | OPS/Ø63 | OPS/Ø63 | OPS/Ø100 | OPS/Ø100 | OPS/Ø100 |
| | Steel Sensor Tube | OPS/Ø9 mm<br>3 pieces | OPS/Ø9 mm<br>3 pieces | OPS/Ø9 mm<br>3 pieces | OPS/Ø9 mm<br>3 pieces | OPS/Ø9 mm<br>3 pieces |
| | Cleaning & Control Flange | x | x | x | x | x |
| | Electric Heater | x | OPS/1½" | OPS/2" | OPS/2" | OPS/2" |
| | Air Ventilation Connection | STD/1¼" | STD/1¼" | STD/1¼" | STD/1¼" | STD/1¼" |
| CATHODIC PROTECTION | Magnesium Anode | x | x | x | x | x |
| | Electronic Anode | x | x | x | x | x |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | STD | STD | STD | STD-x | x |
| | Circle steel leg system that provides circular floor contact | x | x | x | x-STD | STD |

**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

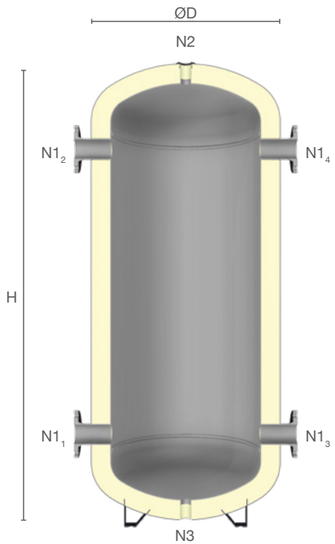
| | Code | Unit | 101.15.13 | 101.15.14 | 101.15.16 | 101.15.18 | 101.15.20 | 101.15.21 | 101.15.22 | 101.15.23 | 101.15.24 | 101.15.25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Capacity** | V | lt | 160 | 200 | 300 | 500 | 800 | 1000 | 1500 | 2000 | 2500 | 3000 |
| **Insulation Type & Thickness** | i | mm | PU/50 | PU/50 | PU/50 | PU/50 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 |
| **Diameter** | ØD | mm | 580 | 580 | 700 | 740 | 910 | 1010 | 1120 | 1310 | 1460 | 1460 |
| **Height** | H | mm | 1135 | 1340 | 1220 | 1845 | 2110 | 2070 | 2375 | 2280 | 2160 | 2580 |
| **Primary/Secondary Energy Inlet/Outlet Connections** | N1 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 1½" | 1½" | 2" | 2" |
| **Electric Heater Connection** | N2 | inch | - | - | - | 1½" | 2" | 2" | 2" | 2" | 2" | 2" |
| **Thermometer & Sensor Tube Connections** | N3 | inch | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" | ½" |
| **Drain Connection** | N4 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" | 1½" | 1½" | 2" | 2" |
| **Lower Heat Exchanger (Coil) Inlet/Outlet Connections** | N5-N6 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" |
| **Upper Heat Exchanger (Coil) Inlet/Outlet Connections** | N7-N8 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1½" | 1½" |
| **Air Ventilation Connection** | N9 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Blind Connection** | N10 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 2" | 2" | 2" | 2" |
| **Gross Weight** | G | kg | 78 | 86 | 102 | 170 | 268 | 282 | 381 | 490 | 710 | 793 |
| **Tilt Height** | R | mm | 1275 | 1460 | 1410 | 1990 | 2300 | 2305 | 2625 | 2630 | 2610 | 2965 |

* : The number of energy inlet/outlet connections is 4 for 100L-300L products, 2 for the primary circuit, 2 for the secondary circuit; and 8 for 500L-3000L products, 4 for the primary circuit, and 4 for the secondary circuit.

The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have internal thread connection.

# 101.16 **KBT-CB** HYDRAULIC BALANCING BUFFER TANK

KODSAN


BULK ORDER

**Volume**
100L – 5000L

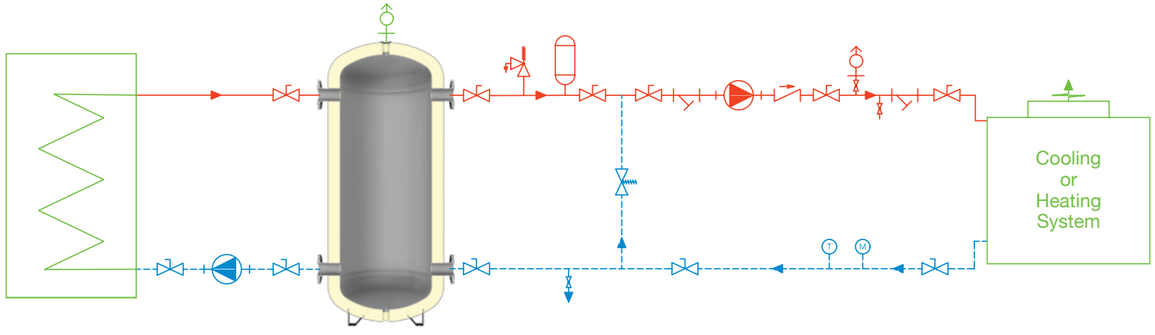
**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
6 Bar

**Flange Connection Pressure Class**
PN16

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.

| | | 100L-500L | 800L-1000L | 1500L-2000L | 2500L-3000L | 4000L-5000L |
|---|---|---|---|---|---|---|
| INSULATION | PU- 42kg/m³ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | OPS/ 50 mm * | x | x | x | x |
| | Soft PU- 15 kg/m³ soft polyurethane | STD/80 mm | STD/80 mm | STD/80 mm | STD/80 mm | STD/80 mm |
| | Soft PU- 26 kg/m³ flame retardant soft polyurethane | x | x | x | x | x |
| | Izomax- 50kg/m³ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | x | OPS/80 mm | OPS/80 mm OPS/100 mm* | OPS/80 mm | OPS/80 mm |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | x | x | x | x | x |
| | Vinleks- Artificial Leather | STD | STD | STD | STD | STD |
| | Izoqua- Dışarıda kullanıma uygun su geçirmez PVC kullanım ünitesi (Izomax izolasyonu kullanıldığı takdirde, opsiyonel olarak sunulur.) | x | OPS | OPS | OPS | OPS |
| EQUIPMENT | Thermometer (0°C- 120°C) | x | x | x | x | x |
| | Steel Sensor Tube | x | x | x | x | x |
| | Cleaning & Control Flange | x | x | x | x | x |
| | Electric Heater | x | x | x | x | x |
| | Air Ventilation Connection | STD/1¼" | STD/1¼" | STD/1¼" | STD/1¼" | STD/1¼" |
| CATHODIC PROTEC-TION | Magnesium Anode | x | x | x | x | x |
| | Electronic Anode | x | x | x | x | x |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | STD | STD | STD-x | x | x |
| | Circle steel leg system that provides circular floor contact | x | x | x-STD | STD | STD |

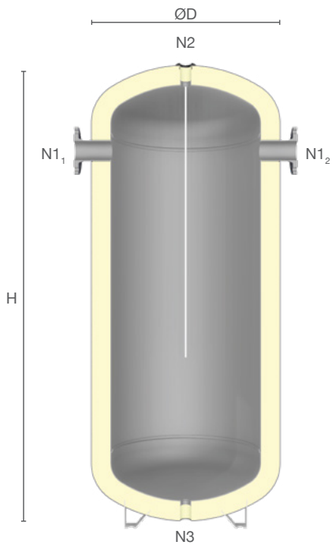
**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.
* Polyurethane insulation can be applied with threaded connection on request for bulk order.

| | Code | Unit | 101.16.11 | 101.16.16 | 101.16.18 | 101.16.20 | 101.16.21 | 101.16.22 | 101.16.23 | 101.16.24 | 101.16.25 | 101.16.26 | 101.16.27 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Capacity** | V | lt | 100 | 300 | 500 | 800 | 1000 | 1500 | 2000 | 2500 | 3000 | 4000 | 5000 |
| **Insulation Type & Thickness** | i | mm | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 |
| **Diameter** | ØD | mm | 540 | 760 | 800 | 910 | 1010 | 1120 | 1310 | 1460 | 1460 | 1660 | 1660 |
| **Height** | H | mm | 1115 | 1225 | 1850 | 2110 | 2070 | 2375 | 2280 | 2160 | 2580 | 2575 | 3230 |
| **Primary/Secondary Energy Inlet/Outlet Connections** | N1 | inch/DN | Threaded 1½" | Threaded 2" | Threaded 2½" | Flanged DN80 | Flanged DN100 | Flanged DN125 | Flanged DN125 | Flanged DN150 | Flanged DN150 | Flanged DN200 | Flanged DN200 |
| **Air Ventilation Connection** | N2 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Blind Connection** | N3 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 2" | 2" | 2" | 2" | 2" | 2" |
| **Gross Weight** | G | kg | 46 | 80 | 118 | 199 | 215 | 311 | 385 | 540 | 593 | 806 | 931 |
| **Tilt Height** | R | mm | 1240 | 1440 | 2015 | 2300 | 2305 | 2625 | 2630 | 2610 | 2965 | 3065 | 3635 |

The table shown above is prepared based on spare parts and equipments which belong to the standard products; products 100L-300L have internal thread connection, products 800L-5000L have flaged connection.

# 101.17 **KBT-C** BUFFER TANK WITH BAFFLE PLATE

KODSAN


BULK ORDER

**Volume**
100L – 5000L

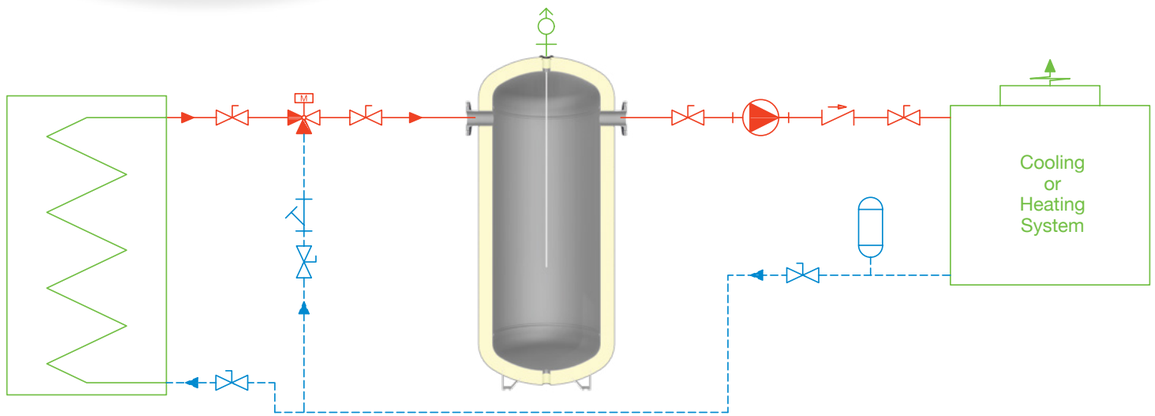
**Domestic Hot Water Maximum Operating Temperature**
95°C

**Domestic Hot Water Maximum Operating Pressure**
6 Bar

**Flange Connection Pressure Class**
PN16

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.

| | | 100L-500L | 800L-1000L | 1500L-2000L | 2500L-3000L | 4000L-5000L |
|---|---|---|---|---|---|---|
| INSULATION | PU- 42kg/m³ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | x | x | x | x | x |
| | Soft PU- 15 kg/m³ soft polyurethane | STD/80 mm | STD/80 mm | STD/80 mm | STD/80 mm | STD/80 mm |
| | Soft PU- 26 kg/m³ flame retardant soft polyurethane | x | x | x | x | x |
| | Izomax- 50kg/m³ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | x | OPS/80 mm | OPS/80 mm<br>OPS/100 mm* | OPS/80 mm | OPS/80 mm |
| COATING | Blueshell- Recyclable polyethylene cover that provides heat-saving | x | x | x | x | x |
| | Vinleks- Artificial Leather | STD | STD | STD | STD | STD |
| | Izoqua- Waterproof PVC unit which is suitable for exterior usage.<br>**(Optional only with the izomax insulation application)** | x | OPS | OPS | OPS | OPS |
| EQUIPMENT | Thermometer (0°C- 120°C) | x | x | x | x | x |
| | Steel Sensor Tube | x | x | x | x | x |
| | Cleaning & Control Flange | x | x | x | x | x |
| | Electric Heater | x | x | x | x | x |
| | Air Ventilation Connection | STD/1¼" | STD/1¼" | STD/1¼" | STD/1¼" | STD/1¼" |
| CATHODIC PROTECTION | Magnesium Anode | x | x | x | x | x |
| | Electronic Anode | x | x | x | x | x |
| CARRIER ELEMENT | Steel leg system mounted on a palette from 3 different locations | STD | STD | STD-x | x | x |
| | Circle steel leg system that provides circular floor contact | x | x | x-STD | STD | STD |

**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

| | Code | Unit | 101.17.11 | 101.17.16 | 101.17.18 | 101.17.20 | 101.17.21 | 101.17.22 | 101.17.23 | 101.17.24 | 101.17.25 | 101.17.26 | 101.17.27 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Capacity** | V | lt | 100 | 300 | 500 | 800 | 1000 | 1500 | 2000 | 2500 | 3000 | 4000 | 5000 |
| **Insulation Type & Thickness** | i | mm | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 | SPU/80 |
| **Diameter** | ØD | mm | 540 | 760 | 800 | 910 | 1010 | 1120 | 1310 | 1460 | 1460 | 1660 | 1660 |
| **Height** | H | mm | 1115 | 1225 | 1850 | 2110 | 2070 | 2375 | 2280 | 2160 | 2580 | 2575 | 3230 |
| **Number of Baffle & Energy Inlet/ Outlet Locations** | - | pieces | 1/ inlet: on top outlet: on top | | | | 2/ inlet: on bottom outlet: on top | | | | 3/ inlet: on bottom outlet: on bottom | | |
| **Primary/Secondary Energy Inlet/Outlet Connections** | N1 | DN | Flanged DN50 | Flanged DN50 | Flanged DN65 | Flanged DN80 | Flanged DN100 | Flanged DN125 | Flanged DN125 | Flanged DN150 | Flanged DN150 | Flanged DN200 | Flanged DN200 |
| **Air Ventilating Connection** | N2 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" |
| **Blind Connection** | N3 | inch | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 2" | 2" | 2" | 2" | 2" | 2" |
| **Gross Weight** | G | kg | 40 | 78 | 117 | 198 | 232 | 325 | 405 | 577 | 701 | 894 | 931 |
| **Tilt Height** | R | mm | 1240 | 1440 | 2015 | 2300 | 2305 | 2625 | 2630 | 2610 | 2965 | 3065 | 3635 |

The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have flanged connection.

# 911 KPG AUTOMATIC PUMP CONTROLLED EXPANSION SYSTEM

KODSAN

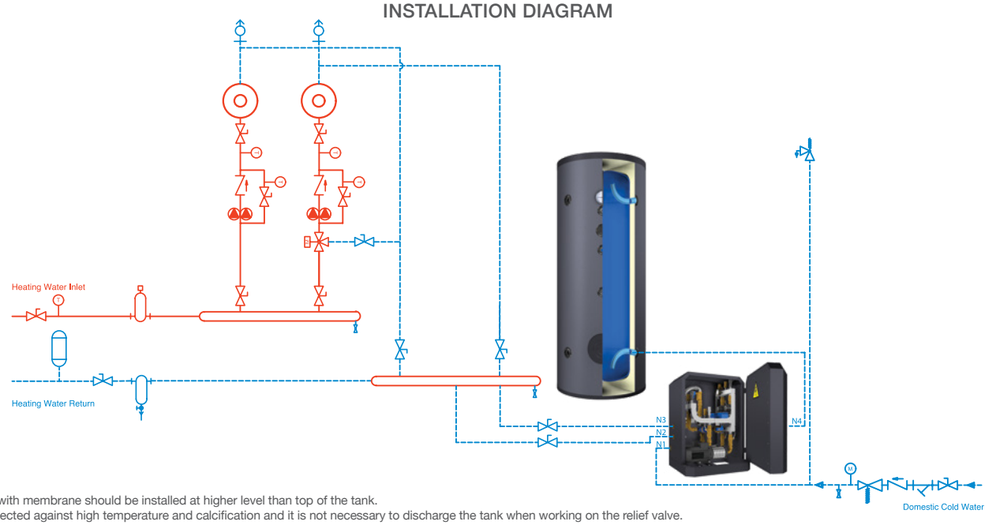
Automatic Pump Controlled Expansion System is a technological devices developed to absorb the volume changes that may occur at the heating and cooling systems and stabilize the installment pressure.

Considering the expansion and contraction of water due to the temperature variation, the amount of water changes in the system. The device keeps the pressure in the installment in balance with 0,1 bar precision by transmitting the water among the tank and installment through the proportioning valves and pumps.

**Volume**
Min. 500L
**Tank**
51.11 Enameled Accumulation Tank
**Pump**
Grundfos CM Serie
**Control System**
7" Touch Panel
**Maximum Operating Temperature**
95°C
**Maximum Operating Pressure**
6 bar / 10 bar / 16 bar
**Control Circuit Voltage**
230 V AC
**Automatic Filling System**
Avaliable

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.

The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.

| | | | 500L | 800L-1000L | 1500L-2000L | 2500L-3000L | 4000L-5000L |
|---|---|---|---|---|---|---|---|
| INSULATION | TANK | PU- 42kg/m³ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | STD/50 mm | x | x | x | x |
| | | Soft PU- 15 kg/m³ soft polyurethane | x | STD/80 mm | STD/80 mm | STD/80 mm | STD/80 mm |
| | | Soft PU- 26 kg/m³ flame retardant soft polyurethane | x | OPS/80 mm | STD/80 mm | STD/80 mm | STD/80 mm |
| | | Izomax- 50kg/m³ insulation with d0 fire class as well as with BL-S3 compatible with the ErP regulations following the 814/2013 EU Comission Regulations and TS EN 12897 Standards | x | OPS/80 mm | OPS/80 mm<br>OPS/100 mm* | OPS/80 mm | OPS/80 mm |
| COATING | TANK | Blueshell- Recyclable polyethylene cover that provides heat-saving | STD | x | x | x | x |
| | | Vinleks- Artificial Leather | x | STD | STD | STD | STD |
| | | Izoqua- Waterproof PVC unit which is suitable for exterior usage.<br>**(Optional only with the izomax insulation application)** | x | OPS | OPS | OPS | OPS |
| | UNIT | Sheet Metal- Electrostatic Powder Painted Sheet | STD | STD | STD | STD | STD |
| EQUIPMENT | TANK | Thermometer (0°C- 120°C) | STD/Ø63 | STD/Ø100 | STD/Ø100 | STD/Ø100 | STD/Ø100 |
| | | Steel Sensor Tube | OPS/Ø9 mm<br>2 pieces | OPS/Ø9 mm<br>2 pieces | OPS/Ø9 mm<br>2 pieces | OPS/Ø9 mm<br>2 pieces | OPS/Ø9 mm<br>2 pieces |
| | | Cleaning & Control Flange | STD/4" | STD/5"<br>OPS/16" | STD/5"<br>OPS/16" | STD/5"<br>OPS/16" | STD/5"<br>OPS/16" |
| | UNIT | Pump | STD | STD | STD | STD | STD |
| | | Automatic Filling System | STD | STD | STD | STD | STD |
| CARRIER ELEMENT | TANK | Steel leg system mounted on a palette from 3 different locations | STD | STD | STD-x | x | x |
| | | Circle steel leg system that provides circular floor contact | x | x | x-STD | STD | STD |
| | UNIT | Rubber leg system mounted on a cell from 4 locations | STD | STD | STD | STD | STD |

**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

| | Code | Unit | 101.17.11 | 101.17.16 | 101.17.18 |
|---|---|---|---|---|---|
| **Capacity** | V | lt | min 500L | min 500L | min 500L |
| **Maximum Allowable Working Pressure** | P | bar | 6 | 10 | 16 |
| **Width** | D1 | mm | 650 | 650 | 650 |
| **Depth** | D2 | mm | 650 | 650 | 650 |
| **Height** | H | mm | 960 | 960 | 960 |
| **Domestic Cold Water Inlet Connection** | N1 | inch | 1" | 1" | 1" |
| **Expansion Line Inlet Connection** | N2 | icnh | 1" | 1" | 1" |
| **Pressurization Line Outlet Connection** | N3 | inch | 1" | 1" | 1" |
| **Storage Tank Connection** | N4 | inch | 1¼" | 1¼" | 1¼" |
| **Maximum Flow Rate** | Q | m³/h | 6 | 1 | 3,2 |
| **Power** | $P_{power}$ | kW | 1,8 | 2,7 | 4,9 |
| **Gross Weight** | G | kg | 135 | 142 | 160 |
| **Tilt Height** | R | mm | 1100 | 1100 | 1100 |

The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have flanged connection.

# SOLAR THERMAL SYSTEMS

# HYGIENIC
## & HEALTHY

Kodsan protects the hot water it offers to its valuable users in a healthy and hygienic way with its enamel-coated products with WRAS certificate.

# ENVIRONMENT
## FRIENDLY

Kodsan optimizes it’s business processes, starting from design until the end of products’ economic life to leave a sustainable world for future generations with minimum carbon footprint.

# RENEWABLE
## ENERGY

Renewable energy systems are rapidly becoming more efficient and cheaper, and their share in total energy consumption is increasing.

Renewable energy systems offers savings upto 60%.

# SOLAR KEYMARK
# CERTIFICATE

The benefits of the Solar Keymark;

1) High quality products,

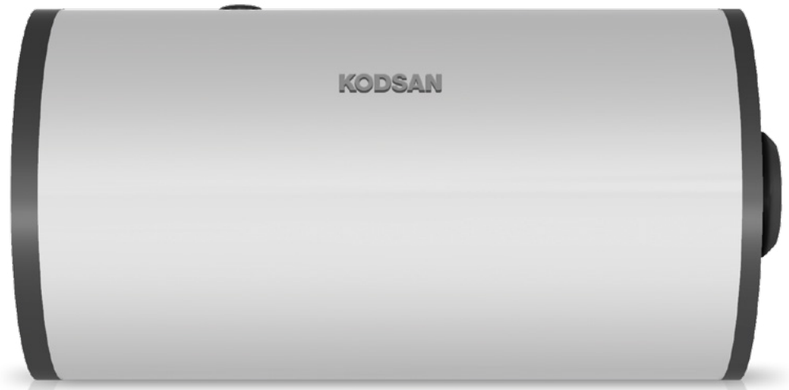
2) Guarantee that the product sold is identical to the tested product,

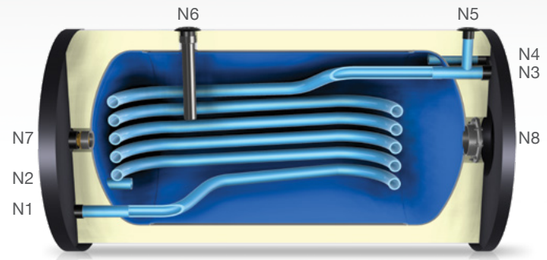
3) Confirmation that products are fully tested according to the relevant standards,

4) Eligibility for subsidies.

# 11.20 KSS HORIZONTAL WATER HEATER WITH COIL






**Volume**
150L-300L

**Maximum Heating Power**
52 $kW_h$

**Maximum Solar Collector Area**
87 $m^2$

**Heat Exchanger (Coil) Maximum Operation Temperature**
110°C

**Heat Exchanger (Coil) Maximum Operation Pressure**
10 bar

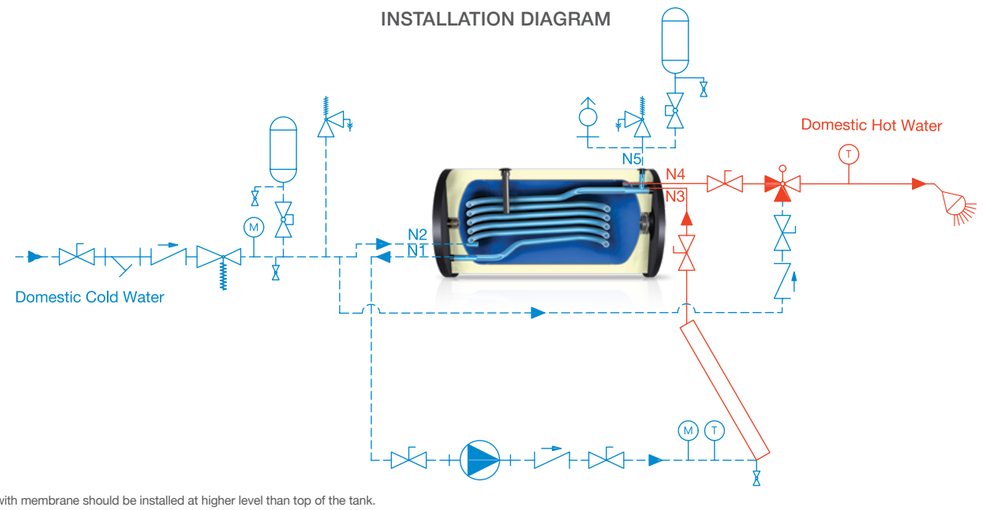
**Domestic Hot Water Maximum Operation Temperature**
95°C

**Domestic Hot Water Maximum Operation Pressure**
10 bar

**Inner Surface Coating**
Tank inner surface is enamelled (glass-lined) in accordance with DIN 4753-3 standard.

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.
The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.

| | | 150L-300L |
|---|---|---|
| INSULATION | PU- 42kg/$m^3$ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | STD/50 mm |
| COATING | Sheet Metal - Electrostatic Powder Painted Sheet | STD |
| EQUIPMENT | Cleaning & Control Flange | STD/Ø80 mm |
| | Electric Heater | OPS/1¼" 2-3 kW |
| | Pressure/Air Ventilation Connection | STD |
| CATHODIC PROTECTION | Magnesium Anode | STD |
| | Electronic Anode | x |

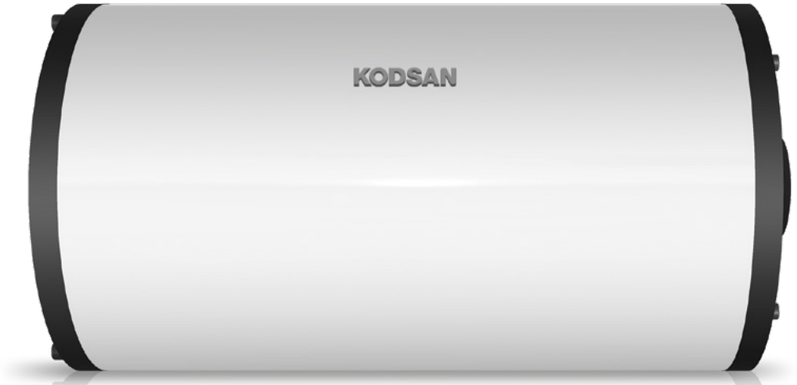
**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

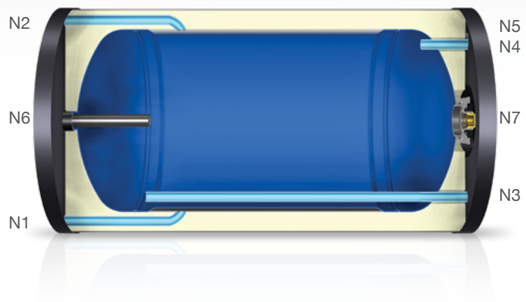
| | Code | Unit | 11.20.12 | 11.20.14 | 11.20.16 |
|---|---|---|---|---|---|
| **Capacity** | V | lt | 150 | 200 | 300 |
| **Insulation Type & Thickness** | i | mm | PU/50 | PU/50 | PU/50 |
| **Diameter** | ØD | mm | 580 | 580 | 580 |
| **Length** | L | mm | 1100 | 1340 | 1835 |
| **Heating Fluid Outlet Connection** | N1 | inch | ¾" | ¾" | ¾" |
| **Domestic Cold Water Inlet Connection** | N2 | inch | ¾" | ¾" | ¾" |
| **Heating Fluid Inlet Connection** | N3 | inch | ¾" | ¾" | ¾" |
| **Domestic Hot Water Outlet Connection** | N4 | inch | ¾" | ¾" | ¾" |
| **Pressure & Air Ventilation Connection** | N5 | inch | ¾" | ¾" | ¾" |
| **Magnesium Anode Connection** | N6 | inch | 1¼" | 1¼" | 1¼" |
| **Blind Connection** | N7 | inch | 1¼" | 1¼" | 1¼" |
| **Cleaning & Control Flange Diameter / Electric Heater Connection** | N8 | mm/inch | Ø80 / 1¼" | Ø80 / 1¼" | Ø80 / 1¼" |
| **Gross Weight** | G | kg | 80 | 100 | 160 |
| **Tilt Height** | R | mm | 1245 | 1460 | 1950 |

The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have internal thread connection.

KODSAN reserves the right to change the product specifications, technical information and installation diagrams without any notifications.

# 11.21 **KSC** HORIZONTAL DOUBLE WALL WATER HEATER




**Volume**
150L-300L

**Heat Exchanger (Double Wall) Maximum Operation Temperature**
110°C

**Heat Exchanger (Double Wall) Maximum Operation Pressure**
2,5 bar

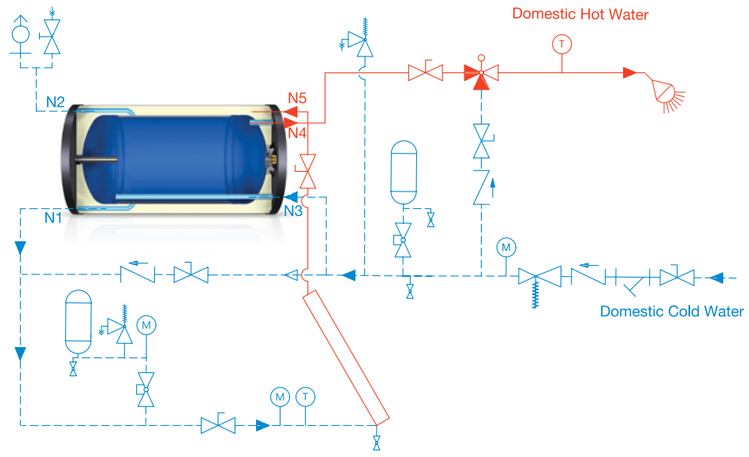
**Domestic Hot Water Maximum Operation Temperature**
95°C

**Domestic Hot Water Maximum Operation Pressure**
10 bar

**Inner Surface Coating**
Tank inner surface is enamelled (glass-lined) in accordance with DIN 4753-3 standard.

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3, TS736 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.

The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.



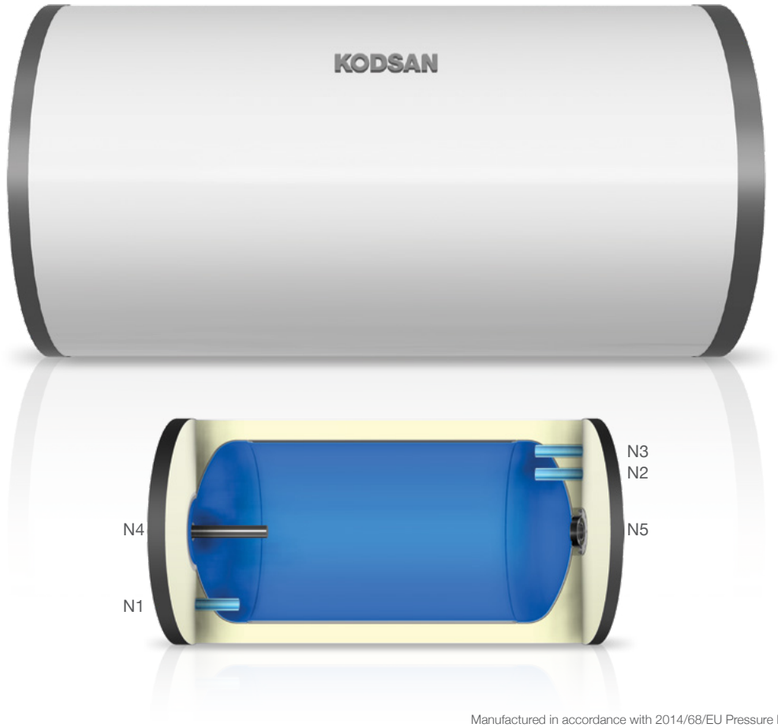
| | | 150L-300L |
|---|---|---|
| INSULATION | PU- 42kg/m³ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | STD/50 mm |
| COATING | Sheet Metal - Electrostatic Powder Painted Sheet | STD |
| EQUIPMENT | Cleaning & Control Flange | STD/Ø80 mm |
| | Electric Heater | OPS/1¼" 2-3 kW |
| | Pressure/Air Ventilation Connection | STD |
| CATHODIC PROTECTION | Magnesium Anode | STD |
| | Electronic Anode | x |

**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

| | Code | Unit | 11.21.12 | 11.21.14 | 11.21.16 |
|---|---|---|---|---|---|
| **Capacity** | V | lt | 150 | 200 | 300 |
| **Insulation Type & Thickness** | i | mm | PU/50 | PU/50 | PU/50 |
| **Diameter** | ØD | mm | 580 | 580 | 580 |
| **Length** | L | mm | 1100 | 1340 | 1860 |
| **Heating Fluid Outlet Connection*** | N1 | inch | ¾" | ¾" | ¾" |
| **Pressure & Air Ventilation Connection*** | N2 | inch | ¾" | ¾" | ¾" |
| **Domestic Cold Water Inlet Connection*** | N3 | inch | ¾" | ¾" | ¾" |
| **Domestic Hot Water Outlet Connection*** | N4 | inch | ¾" | ¾" | ¾" |
| **Heating Fluid Inlet Connection*** | N5 | inch | ¾" | ¾" | ¾" |
| **Magnesium Anode Connection** | N6 | inch | 1¼" | 1¼" | 1¼" |
| **Cleaning & Control Flange Diameter / Electric Heater Connection** | N7 | mm/inch | Ø80 / 1¼" | Ø80 / 1¼" | Ø80 / 1¼" |
| **Gross Weight** | G | kg | 68 | 82 | 115 |
| **Tilt Height** | R | mm | 1245 | 1460 | 1950 |

The table shown above is prepared based on spare parts and equipments which belong to standard products; Connections which are marked with "*" have external thread, while others have internal thread connections.

# 51.13 **KSO** HORIZONTAL WATER HEATER




**Volume**
150L-300L

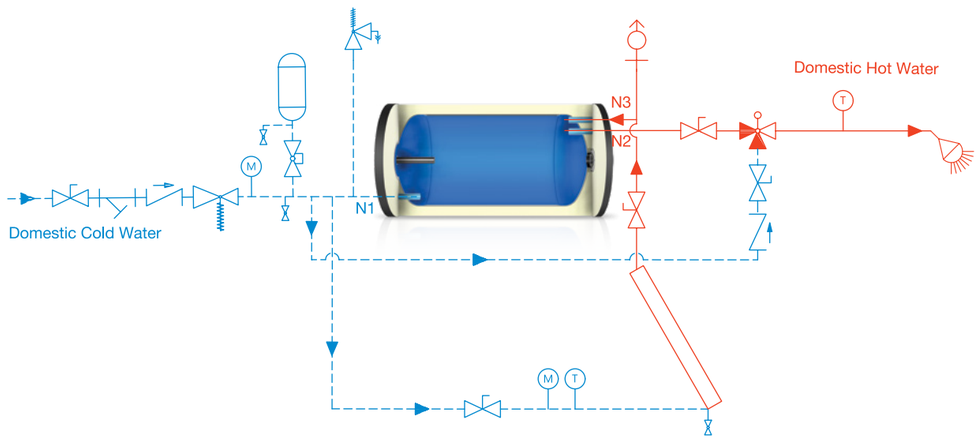
**Domestic Hot Water Maximum Operation Temperature**
95°C

**Domestic Hot Water Maximum Operation Pressure**
10 bar

**Inner Surface Coating**
Tank inner surface is enamelled (glass-lined) in accordance with DIN 4753-3 standard.

Manufactured in accordance with 2014/68/EU Pressure Equipment Directive, TS EN 13445-3 and TS EN 12897 standards.

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.

The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.

| | | 150L-300L |
|---|---|---|
| INSULATION | PU- 42kg/m³ HCFC-free polyurethane in accordance with the 814/2013 EU ErP Comission Regulations and TS EN 12897 Standards | STD/50 mm |
| COATING | Sheet Metal - Electrostatic Powder Painted Sheet | STD |
| EQUIPMENT | Cleaning & Control Flange | STD/Ø80 mm |
| | Electric Heater | OPS/1¼" 2-3 kW |
| | Pressure/Air Ventilation Connection | x |
| CATHODIC PROTECTION | Magnesium Anode | STD |
| | Electronic Anode | x |

**STD:** Abbreviation for spare parts and equipments which belong to the standard products.
**OPS:** Abbreviation for the optional spare parts and equipments for non-standart products.

| | Code | Unit | 51.13.12 | 51.13.14 | 51.13.16 |
|---|---|---|---|---|---|
| **Capacity** | V | lt | 150 | 200 | 300 |
| **Insulation Type & Thickness** | i | mm | PU/50 | PU/50 | PU/50 |
| **Diameter** | ØD | mm | 580 | 580 | 580 |
| **Length** | L | mm | 1040 | 1315 | 1835 |
| **Domestic Cold Water Inlet / Heating Fluid Outlet Connection** | N1 | inch | ¾" | ¾" | ¾" |
| **Domestic Hot Water Outlet Connection** | N2 | inch | ¾" | ¾" | ¾" |
| **Heating Fluid Inlet Connection** | N3 | inch | ¾" | ¾" | ¾" |
| **Magnesium Anode Connection** | N4 | inch | 1¼" | 1¼" | 1¼" |
| **Cleaning & Control Flange Diameter / Electric Heater Connection** | N5 | mm/inch | Ø80 / 1¼" | Ø80 / 1¼" | Ø80 / 1¼" |
| **Gross Weight** | G | kg | 66 | 80 | 112 |
| **Tilt Height** | R | mm | 1245 | 1460 | 1950 |

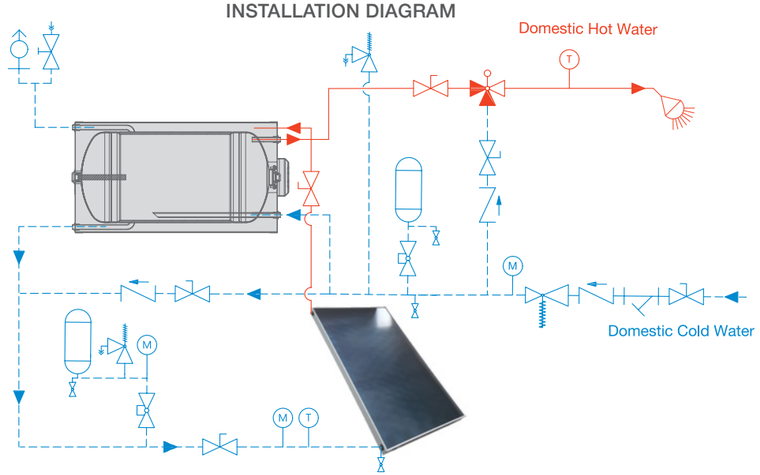
The table shown above is prepared based on spare parts and equipments which belong to the standard products; all products have internal thread connection.

# 312.12 **SOP IX** ST SOLAR PANEL

KODSAN

| | | | |
|---|---|---|---|
| **Area** | : 1,8 $m^2$ - 2,3 $m^2$ | **Absorber Sheet** | : Black Semi-Selective, Al |
| **Maximum Operation Pressure** | : 10 bar | **Absorbtance of Coating ($\alpha_{sol}$)** | : 0,90 ± 0,01 |
| **Absorber Test Pressure** | : 15 bar | **Emission (ε)** | : 0,20 ± 0,05 |
| **Insulation** | : Rock Wool | **Welding Method** | : Laser Welding |
| **Connections** | : ¾" Internal Thread | **Manifold Diameter (Ø)** | : 22 mm |
| **Casing** | : Anodized Aluminium Body | **Risers Diameter (Ø)** | : 8 mm |
| **Sealing** | : EPDM Sealing & Glue | **Transparent Cover** | : 4 mm Tempered Solar Glass |
| **Back Sheet** | : Aluminium Sheet | **Heat Tranfer Medium** | : Mixture of Water, Glycol |

## INSTALLATION DIAGRAM



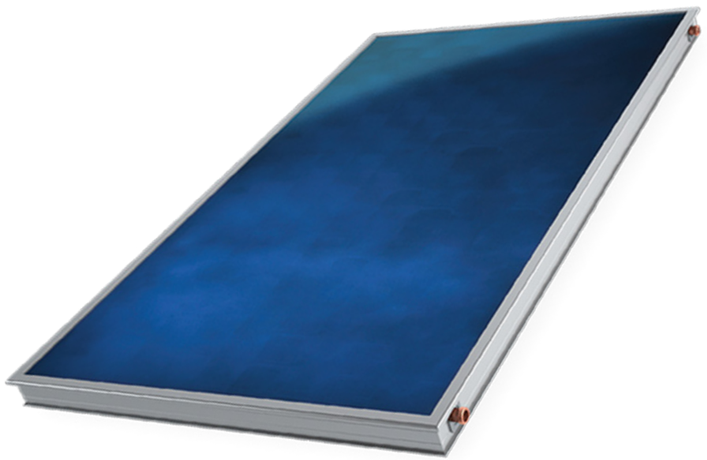

Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.

The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.

| | Code | Unit | 312.12.11 | 312.12.12 |
|---|---|---|---|---|
| **Collector Type** | T | x | PLANAR SOLAR COLLECTOR | |
| **Gross Area** | A | $m^2$ | 1,76 | 2,31 |
| **Absorber Area** | $A_{ab}$ | $m^2$ | 1,60 | 2,14 |
| **Aperture Area** | $A_{ap}$ | $m^2$ | 1,71 | 2,25 |
| **Dimesions** | WxLxH | mm | 916x1916x92 | 1176x1961x92 |
| **Gross Weight** | G | kg | 26 | 34 |
| **Heat Transfer Medium Volume** | V | lt | 1,22 | 1,55 |

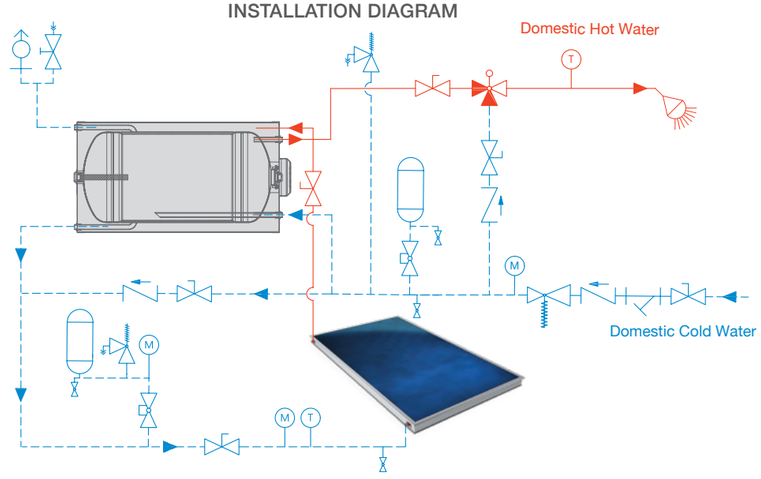
# 311.12 **SOP VIII** HP SOLAR PANEL

KODSAN



| | | | |
|---|---|---|---|
| **Area** | : 1,8 $m^2$ - 2,7 $m^2$ | **Absorber Sheet** | : Blue High Selective, Al |
| **Maximum Operation Pressure** | : 10 bar | **Absorbtance of Coating ($\alpha_{sol}$)** | : 0,95 ± 0,01 |
| **Absorber Test Pressure** | : 15 bar | **Emission (ε)** | : 0,05 ± 0,02 |
| **Insulation** | : Rock Wool | **Welding Method** | : Laser Welding |
| **Connections** | : ¾" Internal Thread | **Manifold Diameter (Ø)** | : 22 mm |
| **Casing** | : Anodized Aluminium Body | **Risers Diameter (Ø)** | : 8 mm |
| **Sealing** | : EPDM Sealing & Glue | **Transparent Cover** | : 4 mm Tempered Solar Glass |
| **Back Sheet** | : Aluminium Sheet | **Heat Tranfer Medium** | : Mixture of Water, Glycol |

## INSTALLATION DIAGRAM




Relief valves with membrane should be installed at higher level than top of the tank.
Thus it is protected against high temperature and calcification and it is not necessary to discharge the tank when working on the relief valve.

The installaion diagram shown above is just an example. The installion must be done according to updated standards and instructions.

| | Code | Unit | 311.12.11 | 311.12.12 | 311.12.13 |
|---|---|---|---|---|---|
| **Collector Type** | T | x | PLANAR SOLAR COLLECTOR | | |
| **Gross Area** | A | $m^2$ | 1,76 | 2,31 | 2,66 |
| **Absorber Area** | $A_{ab}$ | $m^2$ | 1,60 | 2,14 | 2,48 |
| **Aperture Area** | $A_{ap}$ | $m^2$ | 1,71 | 2,25 | 2,60 |
| **Dimesions** | WxLxH | mm | 916x1916x92 | 1176x1961x92 | 1176x2261x92 |
| **Gross Weight** | G | kg | 26 | 34 | 40 |
| **Heat Transfer Medium Volume** | V | lt | 1,22 | 1,55 | 1,68 |

# 251 **SOD** RETURN LINE PUMP STATION FOR SOLAR THERMAL SYSTEMS


| | |
|---|---|
| **Body & Components** | : Brass CW 617N UNI EN 12165 |
| **Washer & Tightness Orings** | : Viton / Klinger |
| **Insulation Box** | : EPP |
| **Connection Size** | : G ¾" |
| **Threaded Connections** | : FM |
| **Expansion Vessel Connection** | : G ¾" |
| **Fill & Discharge Connection** | : G ¾" & Hose Connection |

TECHNICAL SPESIFICATIONS

| | |
|---|---|
| **Fluids** | : Water<br>Water + (max) Glycol 50% |
| **Maximum Operating Temperature** | : 110 ˚C |
| **Maximum Operating Pressure** | : 10 bar |
| **Safety Valve Calibration** | : 6 bar (3 bar- 10 bar on request) |
| **Pumps** | : Grundfos UPM3 Solar 15-75 130,<br>Grundfos Solar 15-65 130,<br>Grundfos Solar 15-70 130 |
| **Power Supply** | : 230V - 50 Hz |

Thermal solar pump stations are products which integrate all hydraulic components necessary for a forced circulation thermal solar system: components for the system installation, regulation and safety.

252 Pump Station is composed of the only of the return line to the panel. The same versions are equipped with a controller to manage the thermal solar system.

The return line of 251 Pump Station for Solar Thermel Systems includes; pump, the mechanical flowmeter to read and regulate the flow rate, system fill and drain cock, ball shut-off valve with built-in temperature gauge and check valve, check valve override function, safety group with pressure gauge, safety relief valve and expansion vessel connection.

| Product Code | Connection Size | Threaded Connections | Pump | Flowmeter Range [l/min] |
|---|---|---|---|---|
| **05S 020 0AU** | ¾" | FF UNI EN ISO 228 | UPM3 Solar 15-75 130 | 0,5- 15 |
| **05S 020 0AG** | ¾" | FF UNI EN ISO 228 | Solar 15-65 130 | 0,5- 15 |
| **05S 020 0BU** | ¾" | FF UNI EN ISO 228 | UPM3 Solar 15-75 130 | 3- 35 |
| **05S 020 0BA** | ¾" | FF UNI EN ISO 228 | Solar 15-70 130 | 3- 35 |
| **05S 020 0AU M** | ¾" | MM UNI EN ISO 228 | UPM3 Solar 15-75 130 | 0,5- 15 |
| **05S 020 0AG M** | ¾" | MM UNI EN ISO 228 | Solar 15-65 130 | 0,5- 15 |
| **05S 020 0BU M** | ¾" | MM UNI EN ISO 228 | UPM3 Solar 15-75 130 | 3- 35 |
| **05S 020 0BA M** | ¾" | MM UNI EN ISO 228 | Solar 15-70 130 | 3- 35 |



# 252 **SOD** FLOW&RETURN LINE PUMP STATION FOR SOLAR THERMAL SYSTEMS

KODSAN


| | |
|---|---|
| **Body & Components** | : Brass CW 617N UNI EN 12165 |
| **Washer & Tightness Orings** | : Viton / Klinger |
| **Insulation Box** | : EPP |
| **Connection Size** | : G ¾" |
| **Threaded Connections** | : FM |
| **Expansion Vessel Connection** | : G ¾" |
| **Fill & Discharge Connection** | : G ¾" & Hose Connection |

TECHNICAL SPESIFICATIONS

| | |
|---|---|
| **Fluids** | : Water<br>Water + (max) Glycol 50% |
| **Maximum Operating Temperature** | : 110 ˚C |
| **Maximum Operating Pressure** | : 10 bar |
| **Safety Valve Calibration** | : 6 bar (3 bar- 10 bar on request) |
| **Pumps** | : Grundfos UPM3 Solar 15-75 130,<br>Grundfos Solar 15-65 130,<br>Grundfos Solar 15-70 130 |
| **Power Supply** | : 230V - 50 Hz |

Thermal solar pump stations are products which integrate all hydraulic components necessary for a forced circulation thermal solar system: components for the system installation, regulation and safety.

252 Pump Station is composed of the return line from the panel and the flow line to the storage.

The same versions are equipped with a controller to manage the thermal solar system.

The return line of 252 Pump Station for Solar Thermel Systems includes; pump, the mechanical flowmeter to read and regulate the flow rate, system fill and drain cock, ball shut-off valve with built-in temperature gauge and check valve, check valve override function, safety group with pressure gauge, safety relief valve and expansion vessel connection.

While the flow line includes; ball shut-off valve with built-in temperature gauge and check valve, and manual de-aerator.

| Product Code | Connection Size | Threaded Connections | Pump | Flowmeter Range [l/min] |
|---|---|---|---|---|
| **07S 020 0AU** | ¾" | FF UNI EN ISO 228 | UPM3 Solar 15-75 130 | 0,5- 15 |
| **07S 020 0AG** | ¾" | FF UNI EN ISO 228 | Solar 15-65 130 | 0,5- 15 |
| **07S 020 0BU** | ¾" | FF UNI EN ISO 228 | UPM3 Solar 15-75 130 | 3- 35 |
| **07S 020 0BA** | ¾" | FF UNI EN ISO 228 | Solar 15-70 130 | 3- 35 |
| **07S 020 0AU M** | ¾" | MM UNI EN ISO 228 | UPM3 Solar 15-75 130 | 0,5- 15 |
| **07S 020 0AG M** | ¾" | MM UNI EN ISO 228 | Solar 15-65 130 | 0,5- 15 |
| **07S 020 0BU M** | ¾" | MM UNI EN ISO 228 | UPM3 Solar 15-75 130 | 3- 35 |
| **07S 020 0BA M** | ¾" | MM UNI EN ISO 228 | Solar 15-70 130 | 3- 35 |

# HEAT INTERFACE UNITS

## CUSTOMIZABLE DESIGN

**“Engineered for individual needs, configured for simple installation and maintenance.”**

Kodsan heat interface units offer equipment modification options and provide spot on solutions to users with their adaptable design to different projects.

## SMART SOLUTIONS

Kodsan utilizes smart equipment that allows its products to be integrated with building automation and smart thermostats to maximize energy saving and comfort


## PATENTED EQUIPMENTS

Kodsan, which produces with the vision of high quality and maximum efficiency, uses patented application with specialized heat exchangers to reduce reaction time under 8 seconds to provide comfort and best user experience.

## BESA TEST

The characteristics and performance of the equipment and fittings used in Kodsan heat interface units have been tested according to standarts of BESA in Kodsan Laboratories and available all over the world.

# KFS 711

## INDIRECT DOMESTIC HOT WATER HEAT INTERFACE UNIT

KODSAN

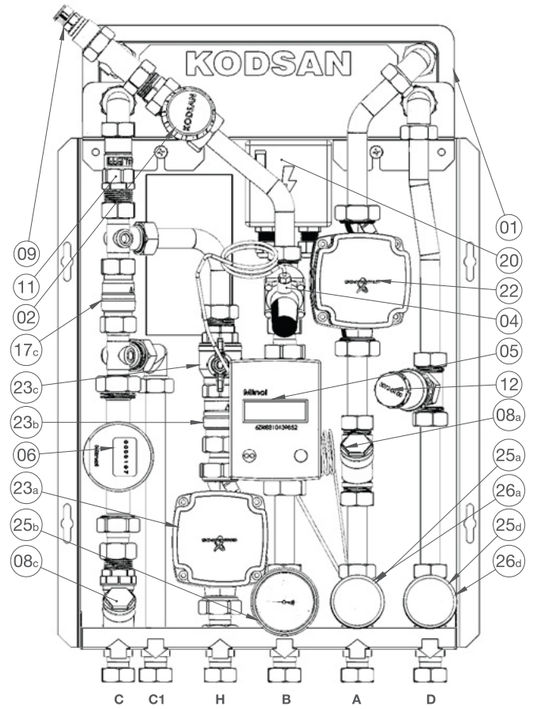

KODFLAT711 series Heat Interface Units is the most compact solution, operating with district heating system that require high static pressures and thermal medium temperatures.

The district heating and domestic hot water circuits are completely separate; no mixing and contamination are allowed.

KODFLAT711 is useful when designing or redesigning the domestic hot water systems of apartment buildings under renovation, as well as facilitating any maintenance required in the individual dwellings.

| | | |
|---|---|---|
| **Heating System** | : | Two Pipe Flow |
| **Mounting** | : | Wall Mounted |
| **Dimensions** | : | G x D x Y (mm) (***) |
| **Casing** | : | Painted Metal Sheet |
| **Plate Heat Exchanger** | : | Stainless Steel, Copper Brazed |
| **Pipework** | : | Stainless Steel Pipe With Brass Fittings |
| **Insulation** | : | EPP, ERF |
| **All External Connections** | : | G¾" Coupling |

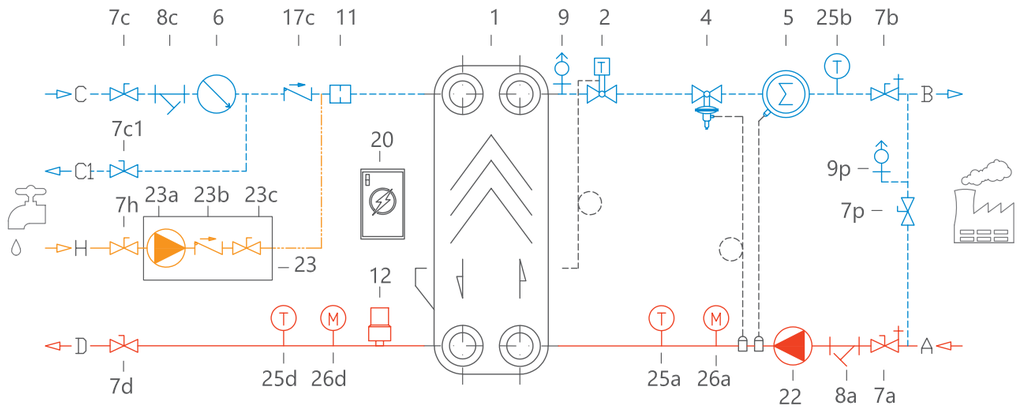
| | | |
|---|---|---|
| **PRIMARY CIRCUIT** | | |
| **Nominal Heat Capacity (*)** | : | 7,3-72,9 kW |
| **Min. - Max. Hot Water Flow Rate** | : | 96-1086 l/h |
| **Min.- Max. Flow Temperature** | : | 50- 90 °C |
| **Nominal Pressure** | : | PN 10 (*****) |
| **Min. Required Differential Pressure** | : | 35 kPa (****) |
| **SECONDARY CIRCUIT** | | |
| **Maximum Flow Rate** | : | 1800 l/h |
| **Nominal DHW Circuit Temperature** | : | 50 °C |
| **Nominal Pressure** | : | PN 10 |




**01.** Plate Heat Exchanger (DHW)
**02.** Two-way Modulating Valve
**04.** Differential Pressure Regulating Valve
**05.** Heat Meter
**06.** Cold Water Flow Meter
**07.** Thermocouple Outlet Ball Valve
**08.** Strainer
**09.** Air Vent
**11.** Flow Limiter
**12.** Water Hammer Arrestor
**17.** Non-return Valve
**20.** Cable Terminal Box
**22.** Circulating Pump
**23.** Re-circulating Pump Kit
**25.** Temperature Gauge
**26.** Pressure Gauge

**A.** District Heating Flow
**B.** District Heating Return
**C.** Cold Water Mains
**C1.** Domestic Cold Water
**D.** Domestic Hot Water (DHW)
**H.** Re-circulating Flow

### HYDRAULIC DIAGRAM (**)




(*) kW output and DHW flow rate data are correlated with the system parameters.
(**) The hydraulic diagram shows all components of the material list. It may vary according to product type and application (underfloor or radiator heating).
(***) Dimensions will be alter depend on used components and connection preferences.
(****) Heat meter and inter-floor differential pressure regulating valve pressure losses not included.
(*****) PN 16 avaliable on enquiry.

# KFS 712 DIRECT SPACE HEATING HEAT INTERFACE UNIT

KODSAN

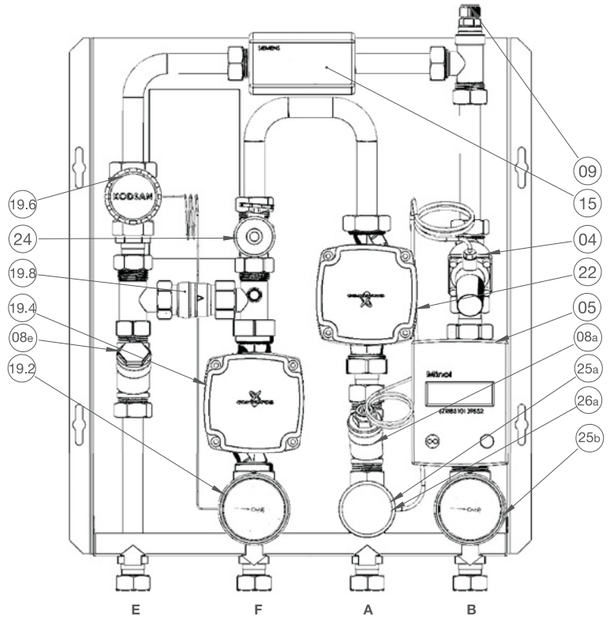

KODFLAT712 series Heat Interface Units are the most compact solution, operating with district heating system that require medium static pressures and temperatures.

The district heating and space heating circuits are controlledly connected to each other.

KODFLAT712 is useful when designing or redesigning the heating systems of apartment buildings under renovation, as well as facilitating any maintenance required in the individual dwellings.

| | | |
|---|---|---|
| **Heating System** | : | Two Pipe Flow |
| **Mounting** | : | Wall Mounted |
| **Dimensions** | : | G x D x Y (mm) (***) |
| **Casing** | : | Painted Metal Sheet |
| **Plate Heat Exchanger** | : | Stainless Steel, Copper Brazed |
| **Pipework** | : | Stainless Steel Pipe With Brass Fittings |
| **Insulation** | : | EPP, ERF |
| **All External Connections** | : | G¾" Coupling |

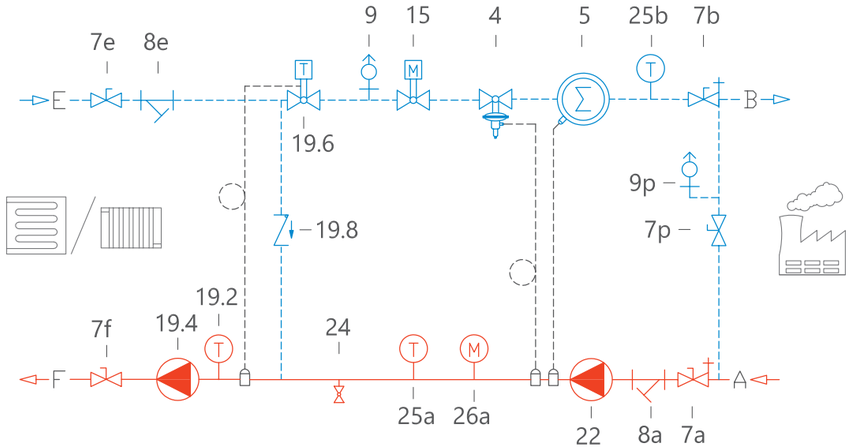
| | | |
|---|---|---|
| **Nominal Heat Capacity (*)** | : | Underfloor Heating: 15 kW<br>Radiator Heating: 26 kW |
| **Maximum Flow Rate** | : | 900 l/h |
| **Nominal Water Temperature** | : | 70 °C |
| **Min.- Max. Flow Temperature** | : | 50- 90 °C |
| **Nominal Pressure** | : | PN 10 (*****) |
| **Min. Required Differential Pressure** | : | 35 kPa (****) |




**04.** Differential Pressure Regulating Valve
**05.** Heat Meter
**07.** Thermocouple Outlet Ball Valve
**08.** Strainer
**09.** Air Vent
**15.** Zone Control Valve
**19-2.** Temperature Gauge
**19-4.** Circulating Pump
**19-6.** Two-way Modulating Valve
**19-8.** Non-return Valve
**22.** Circulating Pump
**24.** Drain Cock
**25.** Temperature Gauge
**26.** Pressure Gauge

**A.** District Heating Flow
**B.** District Heating Return
**E.** Space Heating Return
**F.** Space Heating Flow

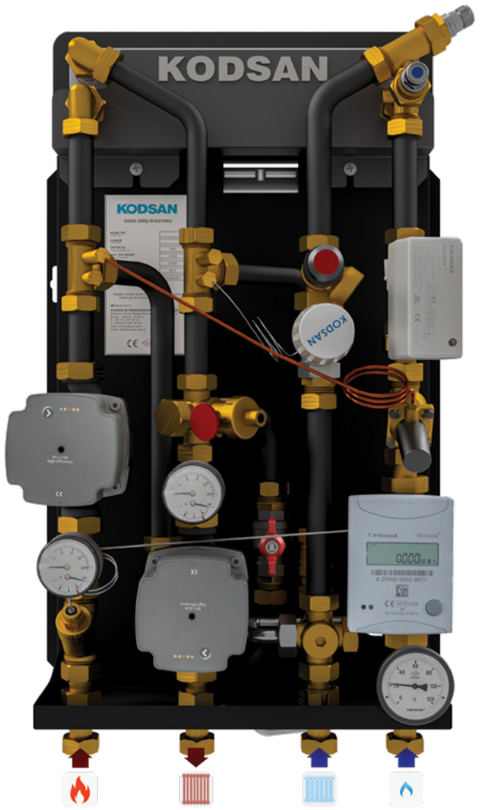
## HYDRAULIC DIAGRAM (**)




(*) kW output and DHW flow rate data are correlated with the system parameters.
(**) The hydraulic diagram shows all components of the material list. It may vary according to product type and application (underfloor or radiator heating).
(***) Dimensions will be alter depend on used components and connection preferences.
(****) Heat meter and inter-floor differential pressure regulating valve pressure losses not included.
(*****) PN 16 avaliable on enquiry.

# KFS 713 INDIRECT SPACE HEATING HEAT INTERFACE UNIT

KODSAN



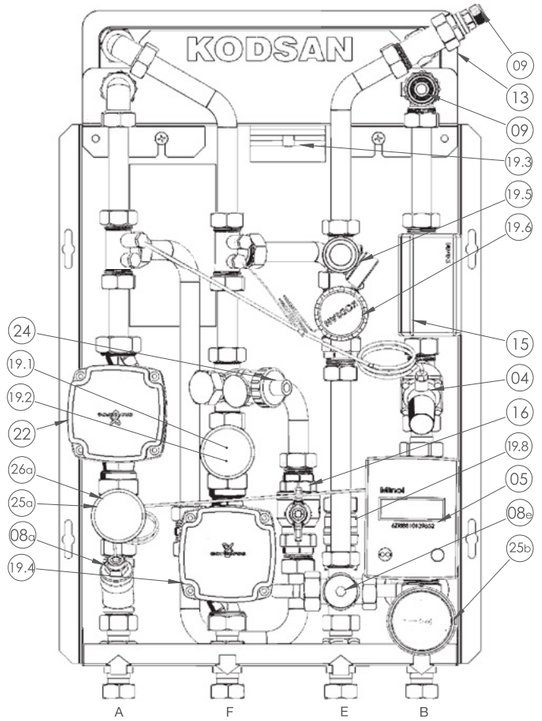

KODFLAT713 series Heat Interface Units are the most compact solution, operating with district heating system that require high static pressures and temperatures.

The district heating and space heating circuits are completely separate; no mixing and contamination are allowed.

KODFLAT713 is useful when designing or redesigning the heating systems of apartment buildings under renovation, as well as facilitating any maintenance required in the individual dwellings.

| | |
|---|---|
| **Heating System** | : Two Pipe Flow |
| **Mounting** | : Wall Mounted |
| **Dimensions** | : G x D x Y (mm) (***) |
| **Casing** | : Painted Metal Sheet |
| **Plate Heat Exchanger** | : Stainless Steel, Copper Brazed |
| **Pipework** | : Stainless Steel Pipe With Brass Fittings |
| **Insulation** | : EPP, ERF |
| **All External Connections** | : G¾" Coupling |

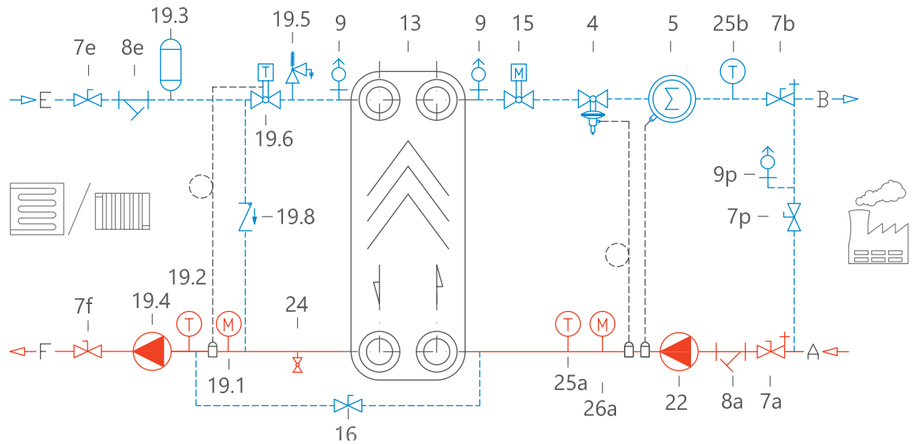
| | |
|---|---|
| **PRIMARY CIRCUIT** | |
| **Nominal Heat Capacity (*)** | : Underfloor Heating: 15 kW<br>Radiator Heating: 26 kW |
| **Maximum Flow Rate** | : 850 l/h |
| **Min.- Max. Flow Temperature** | : 50- 90 °C |
| **Nominal Pressure** | : PN 10 (*****) |
| **Min. Required Differential Pressure** | : 40 kPa (****) |
| **SECONDARY CIRCUIT** | |
| **Maximum Flow Rate** | : 1300 l/h |
| **Max. Space Heating Circuit Temp.** | : 70 °C |
| **Nominal Pressure** | : PN 10 |




**04.** Differential Pressure Regulating Valve
**05.** Heat Meter
**07.** Thermocouple Outlet Ball Valve
**08.** Strainer
**09.** Air Vent
**13.** Plate Heat Exchanger (Space Heating)
**15.** Zone Control Valve
**16.** Ball Valve
**19-1.** Pressure Gauge
**19-2.** Temperature Gauge
**19-3.** Expansion Vessel
**19-4.** Circulating Pump
**19-5.** Safety Relief Valve
**19-6.** Two-way Modulating Valve
**19-8.** Non-return Valve
**20.** Cable Terminal Box
**22.** Circulating Pump
**24.** Drain Cock
**25.** Temperature Gauge
**26.** Pressure Gauge

**A.** District Heating Flow
**B.** District Heating Return
**E.** Space Heating Return
**F.** Space Heating Flow

## HYDRAULIC DIAGRAM (**)




(*) kW output and DHW flow rate data are correlated with the system parameters.
(**) The hydraulic diagram shows all components of the material list. It may vary according to product type and application (underfloor or radiator heating).
(***) Dimensions will be alter depend on used components and connection preferences.
(****) Heat meter and inter-floor differential pressure regulating valve pressure losses not included.
(*****) PN 16 avaliable on enquiry.

# KFS 721S INDIRECT DOMESTIC HOT WATER & DIRECT SPACE HEATING HEAT INTERFACE UNIT

KODSAN

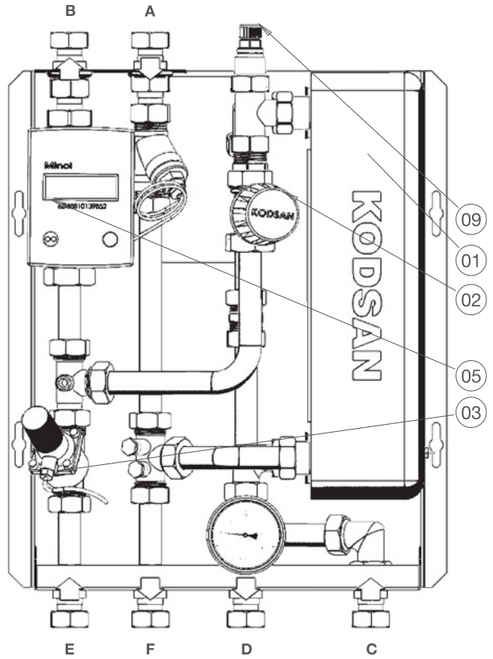

KODFLAT721S series Heat Interface Units are the most compact solution, operating with district heating system that require medium static pressures and temperatures.

The district heating and space heating circuits are controlledly connected to each other; while DHW secondary circuits are completely separate; no mixing and contamination are allowed.

KODFLAT721S is useful when designing or redesigning the heating and domestic hot water systems of apartment buildings under renovation, as well as facilitating any maintenance required in the individual dwellings.

| | |
|---|---|
| **Heating System** | : Two Pipe Flow |
| **Mounting** | : Wall Mounted |
| **Dimensions** | |
| Underfloor heating | : 450 x 540 x 165 mm |
| Radiator heating | : 450 x 400 x 125 mm |
| **Casing** | : Painted Metal Sheet |
| **Plate Heat Exchanger** | : Stainless Steel, Copper Brazed |
| **Pipework** | : Stainless Steel Pipe With Brass Fittings |
| **Insulation** | : EPP, ERF |
| **All External Connections** | : G¾" Coupling |

| | |
|---|---|
| **PRIMARY CIRCUIT** | |
| **Nominal Heat Capacity (*)** | : Domestic Hot Water: 7,3-72,9 kW<br>Underfloor Heating: 15 kW<br>Radiator Heating: 26 kW |
| **Min.-Max. Hot Water Flow Rate** | : 96-1086 l/h |
| **Min.-Max. Flow Temperature** | : 50- 90 °C |
| **Nominal Pressure** | : PN 10 |
| **Min. Required Differential Pressure** | : 35 kPa (**) |
| **SECONDARY CIRCUIT** | |
| **Maximum Flow Rate** | : 1800 l/h |
| **DHW Circuit Temperature** | : 10/60 °C |
| **Space Heating Circuit Temperature** | : 50/70 °C |
| **Nominal Pressure** | : PN 10 |

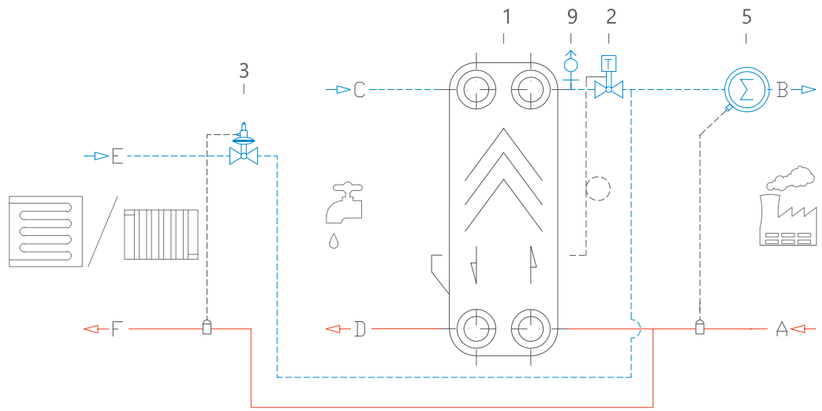



**01.** Plate Heat Exchanger (DHW)
**02.** Two-way Modulating Valve
**03.** Differential Pressure Regulating Valve
**05.** Heat Meter
**09.** Air Vent

**A.** District Heating Flow
**B.** District Heating Return
**C.** Cold Water Mains
**D.** Domestic Hot Water (DHW)
**E.** Space Heating Return
**F.** Space Heating Flow

(***): UNDERFLOOR MIXING KIT NOT SHOWN

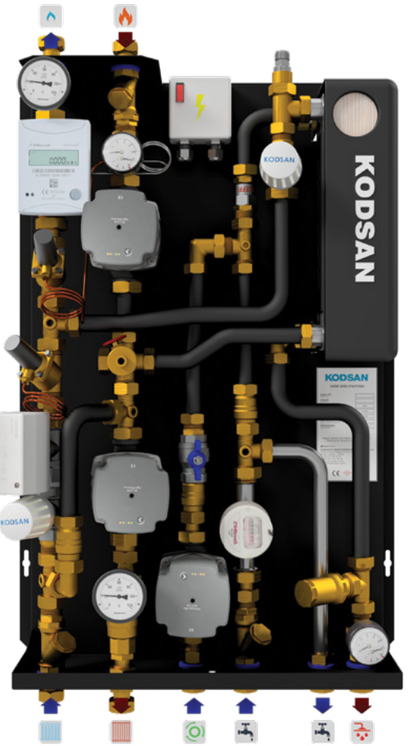
## HYDRAULIC DIAGRAM




(*) kW output and DHW flow rate data are correlated with the system parameters.
(**) Heat meter and inter-floor differential pressure regulating valve pressure losses not included.
(***) Underfloor mixing kit is not shown. Connections assembly configuration may vary accordingly.
(****) The pictures, material list and hydraulic diagram show only compenents for radiator heating. They may vary according to underfloor heating application.

# KFS 721 INDIRECT DOMESTIC HOT WATER & DIRECT SPACE HEATING HEAT INTERFACE UNIT

KODSAN



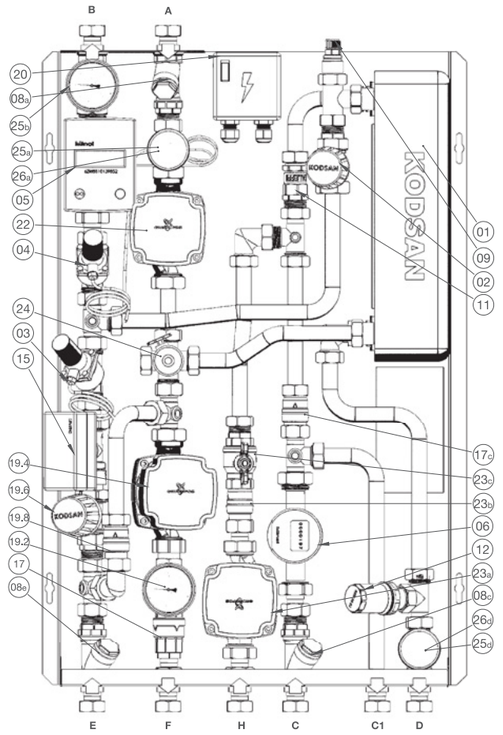

KODFLAT721 series Heat Interface Units are the most compact solution, operating with district heating system that require medium static pressures and temperatures.

The district heating and space heating circuits are controlledly connected to each other; while DHW secondary circuits are completely separate; no mixing and contamination are allowed.

KODFLAT721 is useful when designing or redesigning the heating and domestic hot water systems of apartment buildings under renovation, as well as facilitating any maintenance required in the individual dwellings.

| | |
|---|---|
| **Heating System** | : Two Pipe Flow |
| **Mounting** | : Wall Mounted |
| **Dimensions** | : G x D x Y (mm) (***) |
| **Casing** | : Painted Metal Sheet |
| **Plate Heat Exchanger** | : Stainless Steel, Copper Brazed |
| **Pipework** | : Stainless Steel Pipe With Brass Fittings |
| **Insulation** | : EPP, ERF |
| **All External Connections** | : G¾" Coupling |

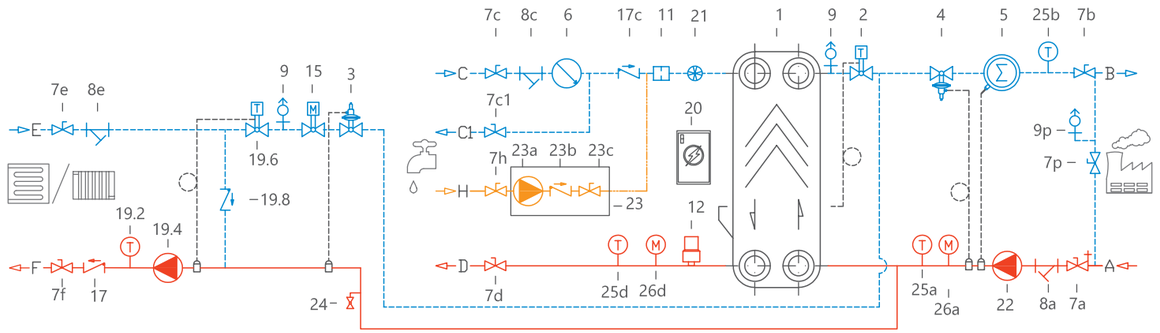
| | |
|---|---|
| **PRIMARY CIRCUIT** | |
| **Nominal Heat Capacity (*)** | : Domestic Hot Water: 7,3-72,9 kW<br>Underfloor Heating: 15 kW<br>Radiator Heating: 26 kW |
| **Min.-Max. Hot Water Flow Rate** | : 96-1086 l/h |
| **Min.-Max. Flow Temperature** | : 50- 90 °C |
| **Nominal Pressure** | : PN 10 (*****) |
| **Min. Required Differential Pressure** | : 35 kPa (****) |
| **SECONDARY CIRCUIT** | |
| **Maximum Flow Rate** | : 1800 l/h |
| **DHW Circuit Temperature** | : 10/60 °C |
| **Space Heating Circuit Temperature** | : 50/70 °C |
| **Nominal Pressure** | : PN 10 |




**01.** Plate Heat Exchanger (DHW)
**02.** Two-way Modulating Valve
**03.** Differential Pressure Regulating Valve
**04.** Differential Pressure Regulating Valve
**05.** Heat Meter
**06.** Cold Water Flow Meter
**07.** Thermocouple Outlet Ball Valve
**08.** Strainer
**09.** Air Vent
**11.** Flow Limiter
**12.** Water Hammer Arrestor
**15.** Zone Control Valve
**17.** Non-return Valve
**19-2.** Temperature Gauge
**19-4.** Circulating Pump
**19-6.** Two-way Modulating Valve
**19-8.** Non-return Valve
**20.** Cable Terminal Box
**21.** Flow Sensor
**22.** Circulating Pump
**23.** Re-circulating Pump Kit
**24.** Drain Cock
**25.** Temperature Gauge
**26.** Pressure Gauge

**A.** District Heating Flow
**B.** District Heating Return
**C.** Cold Water Mains
**C1.** Domestic Cold Water
**D.** Domestic Hot Water (DHW)
**E.** Space Heating Return
**F.** Space Heating Flow
**H.** Re-circulating Flow

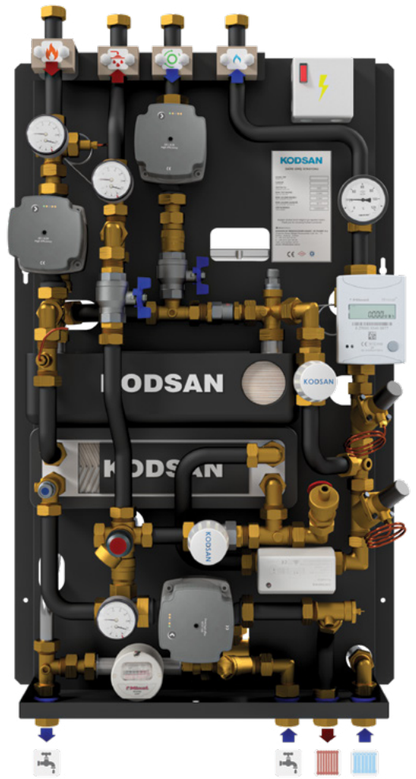
## HYDRAULIC DIAGRAM (**)




(*) kW output and DHW flow rate data are correlated with the system parameters.
(**) The hydraulic diagram shows all components of the material list. It may vary according to product type and application (underfloor or radiator heating).
(***) Dimensions will be alter depend on used components and connection preferences.
(****) Heat meter and inter-floor differential pressure regulating valve pressure losses not included.
(*****) PN 16 avaliable on enquiry.

# KFS 722 INDIRECT DOMESTIC HOT WATER & INDIRECT SPACE HEATING HEAT INTERFACE UNIT

KODSAN



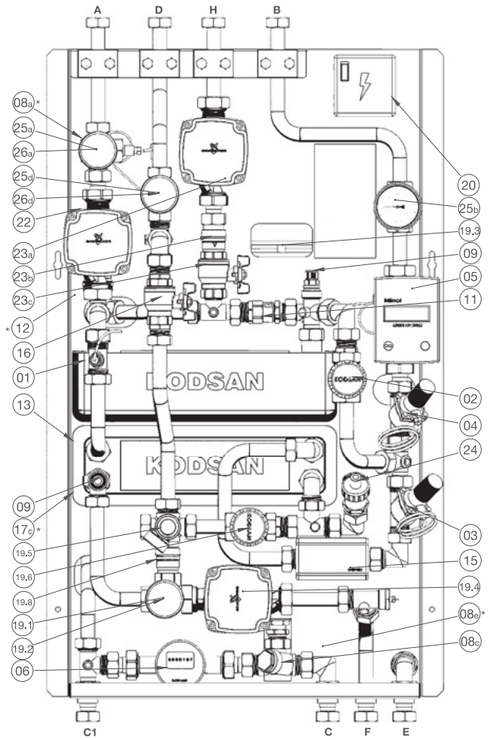

KODFLAT722 series Heat Interface Units are the most compact solution, operating with district heating system that require high static pressures and thermal medium temperatures.

The domestic hot water and space heating circuits are completely separate from the district heating circuit; no mixing and contamination are allowed.

KODFLAT722 is useful when designing or redesigning the heating and domestic hot water systems of apartment buildings under renovation, as well as facilitating any maintenance required in the individual dwellings.

| | |
|---|---|
| **Heating System** | : Two Pipe Flow |
| **Mounting** | : Wall Mounted |
| **Dimensions** | : G x D x Y (mm) (***) |
| **Casing** | : Painted Metal Sheet |
| **Plate Heat Exchanger** | : Stainless Steel, Copper Brazed |
| **Pipework** | : Stainless Steel Pipe With Brass Fittings |
| **Insulation** | : EPP, ERF |
| **All External Connections** | : G¾" Coupling |

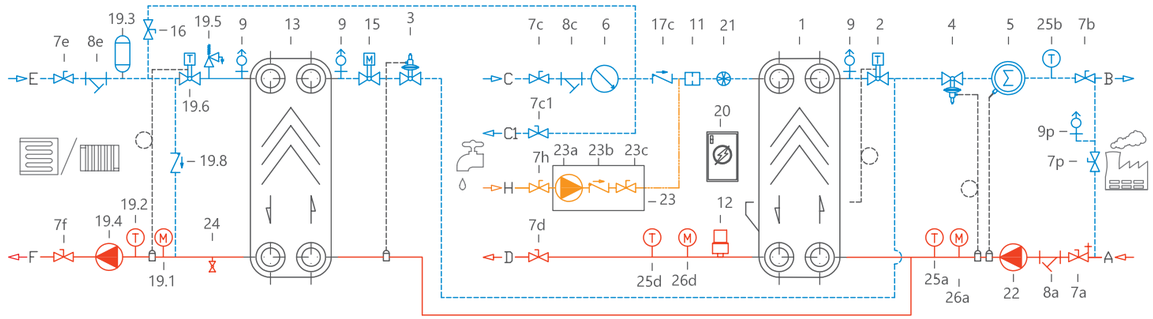
| | |
|---|---|
| **PRIMARY CIRCUIT** | |
| **Nominal Heat Capacity (*)** | : Domestic Hot Water: 7,3-72,9 kW<br>Underfloor Heating: 15 kW<br>Radiator Heating: 26 kW |
| **Min.-Max. Hot Water Flow Rate** | : 96-1086 l/h |
| **Min.-Max. Flow Temperature** | : 50- 90 °C |
| **Nominal Pressure** | : PN 10 (*****) |
| **Min. Required Differential Pressure** | : 35 kPa (****) |
| **SECONDARY CIRCUIT** | |
| **Maximum Flow Rate** | : 1800 l/h |
| **DHW Circuit Temperature** | : 10/60 °C |
| **Space Heating Circuit Temperature** | : 50/70 °C |
| **Nominal Pressure** | : PN 10 |




| | |
|---|---|
| **01.** Plate Heat Exchanger (DHW) | **19-5.** Safety Relief Valve |
| **02.** Two-way Modulating Valve | **19-6.** Two-way Modulating Valve |
| **03.** Differential Pressure Regulating Valve | **19-8.** Non-return Valve |
| **04.** Differential Pressure Regulating Valve | **20.** Cable Terminal Box |
| **05.** Heat Meter | **21.** Flow Sensor |
| **06.** Cold Water Flow Meter | **22.** Circulating Pump |
| **07.** Thermocouple Outlet Ball Valve | **23.** Re-circulating Pump Kit |
| **08.** Strainer | **24.** Drain Cock |
| **09.** Air Vent | **25.** Temperature Gauge |
| **11.** Flow Limiter | **26.** Pressure Gauge |
| **12.** Water Hammer Arrestor | |
| **13.** Plate Heat Exchanger (Space Heating) | **A.** District Heating Flow |
| **15.** Zone Control Valve | **B.** District Heating Return |
| **16.** Ball Valve | **C.** Cold Water Mains |
| **17.** Non-return Valve | **C1.** Domestic Cold Water |
| **19-1.** Pressure Gauge | **D.** Domestic Hot Water (DHW) |
| **19-2.** Temperature Gauge | **E.** Space Heating Return |
| **19-3.** Expansion Vessel | **F.** Space Heating Flow |
| **19-4.** Circulating Pump | **H.** Re-circulating Flow |

(*): nonvisible components

## HYDRAULIC DIAGRAM (**)




(*) kW output and DHW flow rate data are correlated with the system parameters.
(**) The hydraulic diagram shows all components of the material list. It may vary according to product type and application (underfloor or radiator heating).
(***) Dimensions will be alter depend on used components and connection preferences.
(****) Heat meter and inter-floor differential pressure regulating valve pressure losses not included.
(*****) PN 16 avaliable on enquiry.

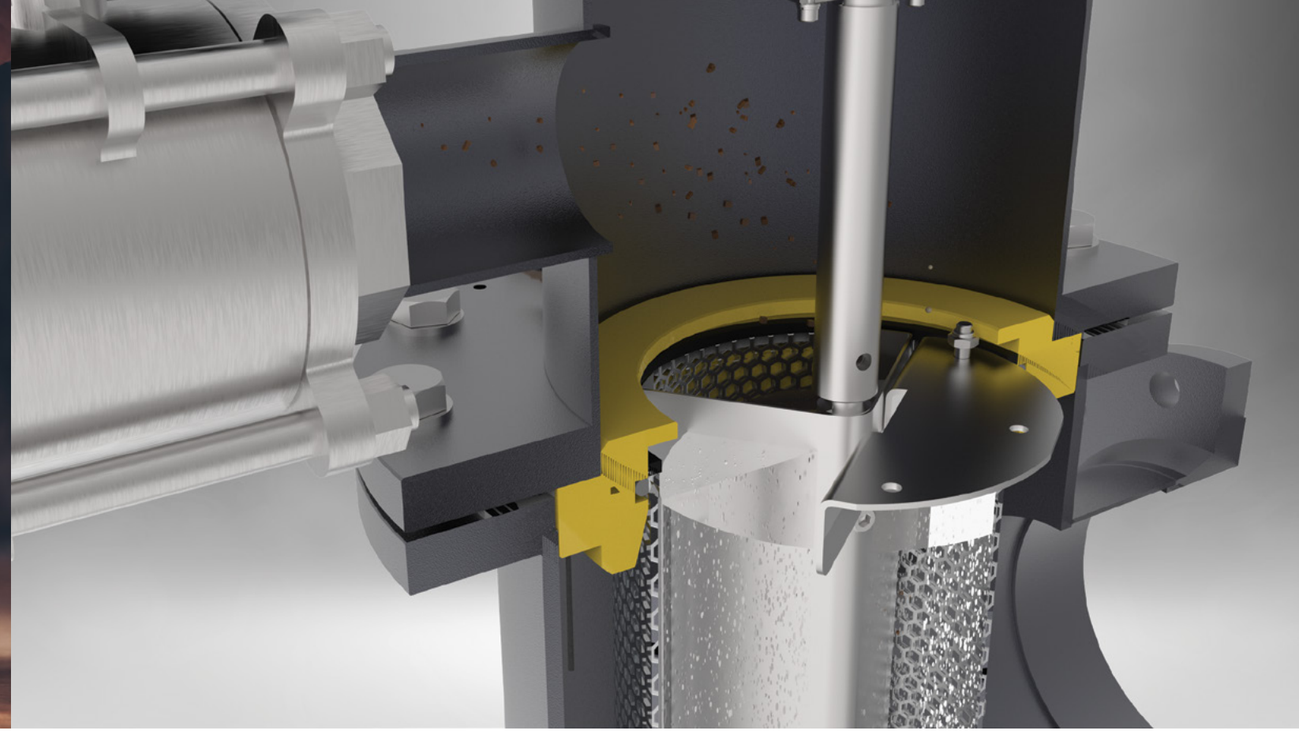
# PLUMBING EQUIPMENTS

## PLUMBING EQUIPMENTS

# WE SAVE YOUR ENERGY

Kodsan separators are insulated with closed cell foam EPP (Expanded Polypropylene), which offers unique specifications such as thermal insulation, superior energy absorption, multiple impact resistance, resistance to water and chemicals, extremely high strength compared to its weight and being 100% recyclable.





# SMART FILTERING SOLUTIONS

Bernoulli's Principle explains the relationship between the velocity and pressure of fluids. According to this principle, for a non-viscous flow, there is an inverse proportion between the velocity of the fluid particles in motion and the pressure created by the fluid.

The flushing sequence is triggered by a differential pressure sensor before flow reduction caused by any blockage that occurs in the filter.

The drain valve opens and larger particles are flushed out in the pre-flushing process.

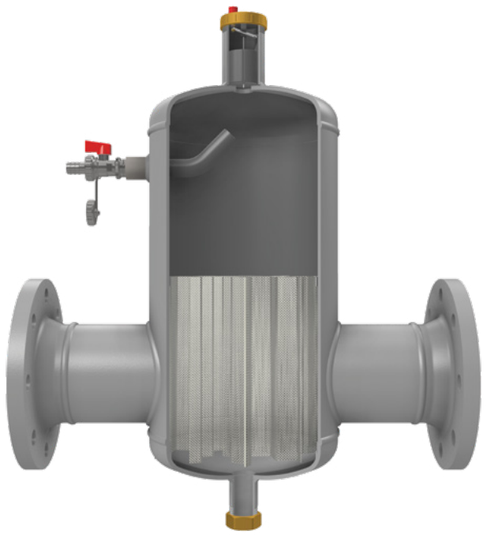
During the flushing process, a specially shaped rotational "V" sheet metal placed into the filter increases the flow velocity by rotating without contacting the filter.

As the flow velocity increases locally around the "V" shaped sheet metal, the static pressure is reduced in accordance with the Bernoulli Principle and the flow direction is reversed, thus the stuck particles on the filter surface are released.

The released particles are discharged through the flushing valve.

# 131.11 **KHA** STEEL AIR SEPARATOR



Manufactured in accordance with 2014/68/EU Pressure Equipment Directive and EN 13445-3 standards.

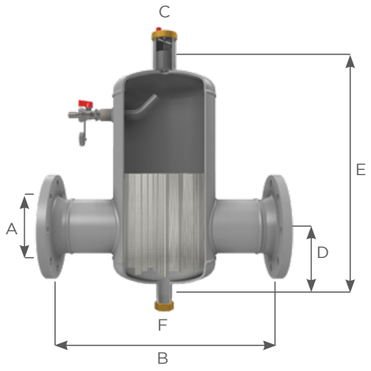
| | | |
|---|---|---|
| **Maximum Operating Temperature** | : | 110 °C |
| **Maximum Operating Pressure** | : | 1000 kPa (10 bar) |
| **Connection Sizes / Pressure Class** | | |
| **Flanged Connection** | : | DN50-DN150 / PN16 |
| **Welded Connection** | : | 60,3 mm-168,3 mm |
| | | (Please contact for products between DN200- DN600) |
| **Filter Material** | : | Stainless steel |
| **Outer Surface Protection Paint** | : | Electrostatic Powder Paint |

The amount of air which can remain dissolved in a water solution is a function of pressure and temperature.
Air bubbles;
• Adhering to the heat transfer surfaces reduce thermal conductivity and lead to efficiency loss.
• Can cause corrosion in the heating systems and installation pipes.
• Cause cavitation in the pumps and installations.
• Cause failures in the pumps and other elements.
• May cause disturbing noises in the installation pumps and especially in the radiators.

**SPECIFICATIONS / USAGE AREAS**

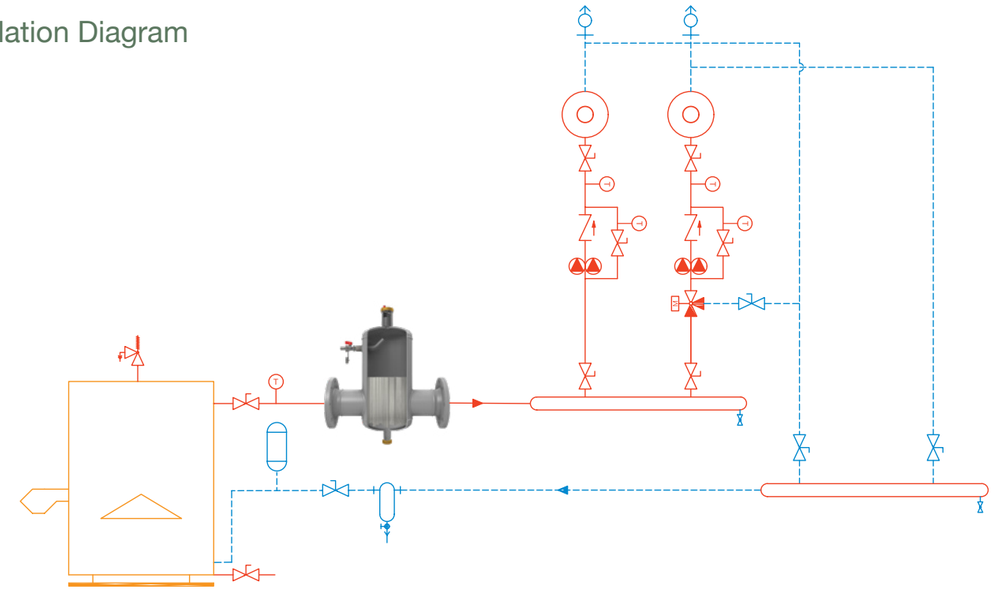
Steel Air Separator separates and releases the micro-bubbles from the water out the heating system due to specially designed stainless steel, thus avoiding heat transfer problems during in installation and in the system.
It also provides an efficient work of the system.
• The product can be used with all types of heating and cooling systems.
• The air at the top of unit is released out of tank with the help of and automatic air relief valve.
• Percentage of glycol in the heating system is maximum 50%

## Scaling






## Installation Diagram



Installation diagram given above is just a template. Installation must be done according to update standards and directives

## 131.11 FLANGED STEEL AIR SEPARATOR

| TYPE | A | | B (mm) | C* | D (mm) | E (mm) | F (inch) | Weight (kg) | Kv ($m^3$/h) | Volume (lt) | Flow Rate ($m^3$/h) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 131.11.16.1 | DN 50 | 2” | 420 | Special Thread | 158 | 503 | 1” | 12 | 75 | 7 | 8 - 12 |
| 131.11.17.1 | DN 65 | 2½” | 420 | Special Thread | 158 | 503 | 1” | 13 | 150 | 7 | 10 - 22 |
| 131.11.18.1 | DN 80 | 3” | 500 | Special Thread | 172 | 579 | 1” | 20 | 180 | 15 | 18 - 30 |
| 131.11.19.1 | DN 100 | 4” | 504 | Special Thread | 172 | 579 | 1” | 22 | 280 | 15 | 28 - 48 |
| 131.11.20.1 | DN 125 | 5” | 635 | Special Thread | 245 | 748 | 1” | 37 | 450 | 45 | 45 - 71 |
| 131.11.21.1 | DN 150 | 6” | 635 | Special Thread | 245 | 748 | 1” | 41 | 720 | 45 | 67 - 105 |

Kv = Q / √ΔP
Q = Water flow rate ($m^3$ / h)  ΔP = Pressure loss on the product (bar)
*: Connection C has special design with Ø50 whitworth thread.

## 131.11 WELDED STEEL AIR SEPARATOR

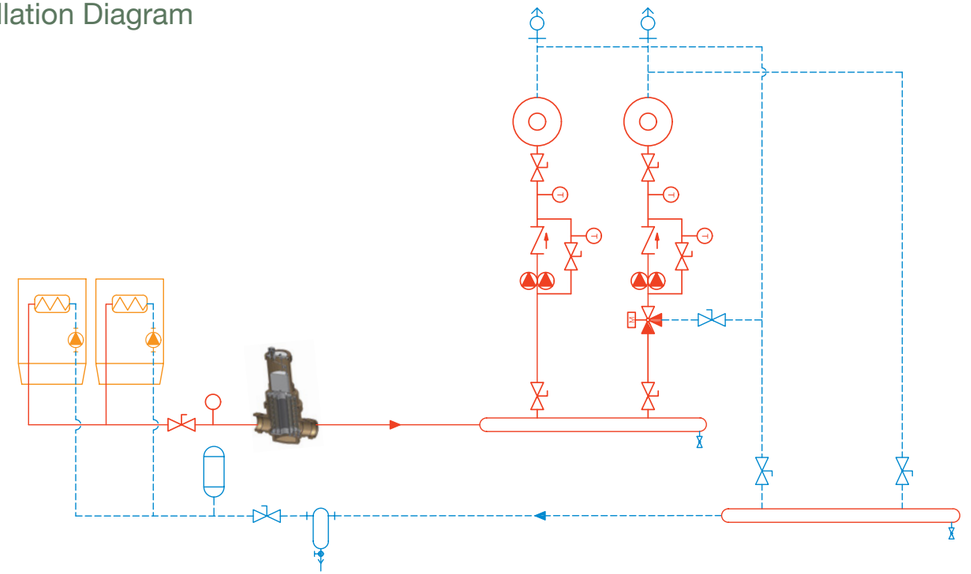
| TYPE | A | | B (mm) | C* | D (mm) | E (mm) | F (inch) | Weight (kg) | Kv ($m^3$/h) | Volume (lt) | Flow Rate ($m^3$/h) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 131.11.16.2 | DN50 | 60,3 | 330 | Special Thread | 158 | 503 | 1” | 8 | 75 | 7 | 8 - 12 |
| 131.11.17.2 | DN65 | 76,1 | 330 | Special Thread | 158 | 503 | 1” | 8 | 150 | 7 | 10 - 22 |
| 131.11.18.2 | DN80 | 88,9 | 400 | Special Thread | 172 | 579 | 1” | 11 | 180 | 15 | 18 - 30 |
| 131.11.19.2 | DN100 | 114,3 | 400 | Special Thread | 172 | 579 | 1” | 12 | 280 | 15 | 28 - 48 |
| 131.11.20.2 | DN125 | 139,7 | 525 | Special Thread | 245 | 748 | 1” | 24 | 450 | 45 | 45 - 71 |
| 131.11.21.2 | DN150 | 168,3 | 525 | Special Thread | 245 | 748 | 1” | 24 | 720 | 45 | 67 - 105 |

Kv = Q / √ΔP
Q = Water flow rate ($m^3$ / h)  ΔP = Pressure loss on the product (bar)
*: Connection C has special design with Ø50 whitworth thread.

# R2830 LINE DEAERATOR

KODSAN

## Installation Diagram



Installation diagram given above is just a template. Installation must be done according to update standards and directives

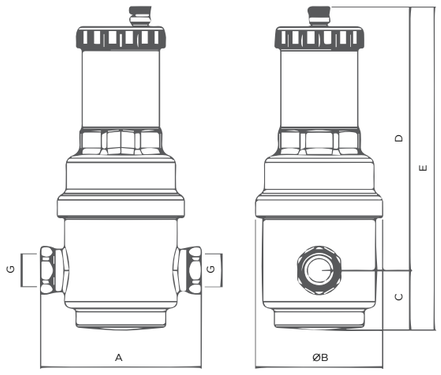
| | | |
|---|---|---|
| **Body** | : | Brass CW 617N UNI EN 12165 |
| **Seals** | : | EPDM and NBR |
| **Float** | : | Float and lever in polypropylene |
| **Cartridge** | : | Stainless steel, AISI 302 |
| **Spring** | : | Stainless steel, AISI 302 |
| **Connection Size** | : | G ½”-G 2” |
| **Threaded Connection** | : | F UNI EN ISO 228 |

**TECHNICAL CHARACTERISTICS**

| | | |
|---|---|---|
| **Fluids** | : | Water<br>Water + Glycol 30% |
| **Maximum Operating Temperature** | : | 110 °C |
| **Maximum Operating Pressure** | : | 1000 kPa (10 bar) |
| **Maximum Discharge Pressure** | : | 1000 kPa (10 bar) |

In-line deaerators are devices suitable for eliminating micro-bubbles from systems. They are essentially made up of two parts:
- ACTIVE: The area where microbubbles are formed as a result of strong turbulence and swirling motion.
Microbubbles blend together becoming bubbles.
- PASSIVE: Float-operated air vent valve to eliminate air bubbles.
Deaerators operate systems with air-depleted water, therefore able to absorb the air bubbles nestled in the system critical areas.
By removing air from the system, unnecessary breakdowns and malfunctions can be reduced, helping to:
- Increase heating and cooling efficiency
- Reduce the formation of corrosion in all points of the system
- Reduce extraordinary maintenance work
- Reduce the effects causing system noise
- Lower the cost of system management
CAUTION:
To be always installed in a vertical position (on horizontal pipes), with the air discharge device facing upwards.

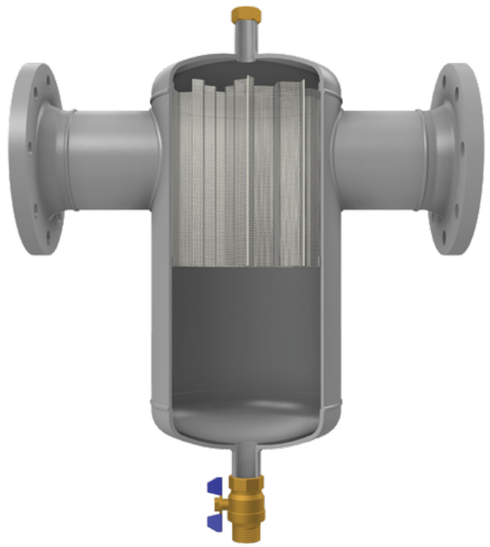
## Scaling




| Product Code | Connection Size | A (mm) | ØB (mm) | C (mm) | D (mm) | E (mm) | Kv ($m^3$/h) | Flow Rate ($m^3$/h) |
|---|---|---|---|---|---|---|---|---|
| R28300400 | ½” | 100 | 79 | 37,5 | 165,5 | 203 | 7,40 | 0,79 |
| R28300500 | ¾” | 105 | 79 | 37,5 | 165,5 | 203 | 12,66 | 1,37 |
| R28300600 | 1” | 110 | 79 | 37,5 | 165,5 | 203 | 20,44 | 2,12 |
| R28300700 | 1¼” | 115 | 79 | 37,5 | 165,5 | 203 | 28,14 | 3,49 |
| R28300800 | 1½” | 120 | 88 | 47 | 171,5 | 218,5 | 44,45 | 5,44 |
| R28300900 | 2” | 125 | 88 | 47 | 171,5 | 218,5 | 65,58 | 8,50 |

# 131.13 **KTT** STEEL DIRT SEPARATOR

KODSAN

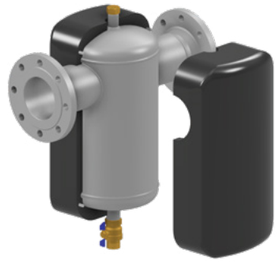
Manufactured in accordance with 2014/68/EU Pressure Equipment Directive and EN 13445-3 standards.

| | | |
|---|---|---|
| **Maximum Operating Temperature** | : | 110 °C |
| **Maximum Operating Pressure** | : | 1000 kPa (10 bar) |
| **Connection Sizes / Pressure Class** | | |
| **Flanged Connection** | : | DN50-DN150 / PN16 |
| **Welded Connection** | : | 60,3 mm-168,3 mm<br>(Please contact for products between DN200- DN600) |
| **Filter Material** | : | Stainless steel |
| **Outer Surface Protection Paint** | : | Electrostatic Powder Paint |

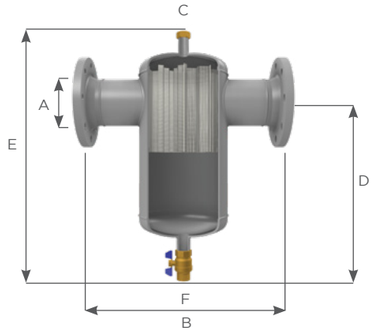
The impurities mainly sand and rust particles circulating within the system cause efficiency loss, failures in heating and cooling systems, clogging the pumps and control valves.

**SPECIFICATIONS / USAGE AREAS**

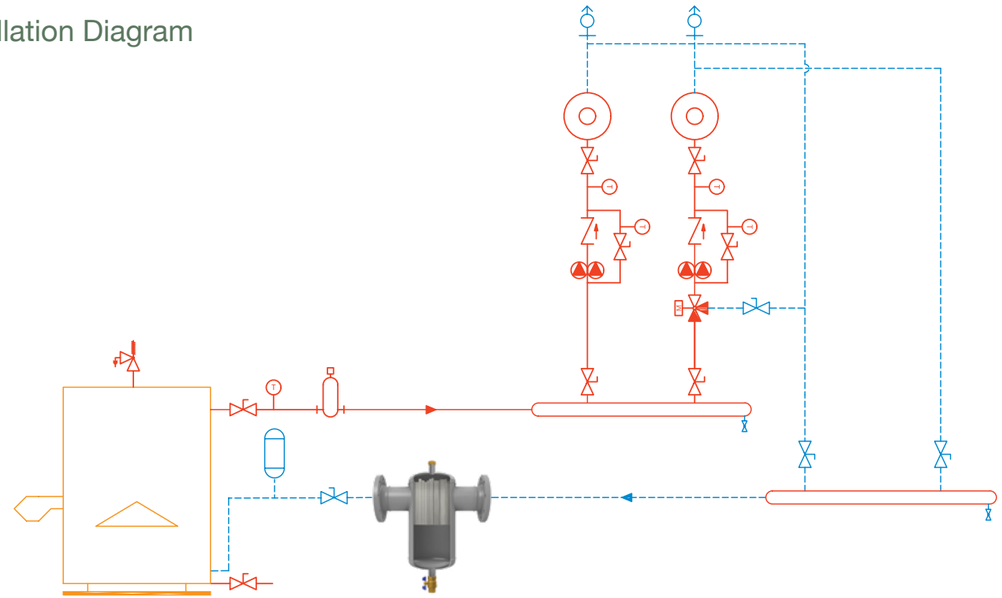
- Since the cleaning and maintenance of the classical type of dirt separators cannot be made easily by the user, they generally become out of function by time. With the help of ball valve on the bottom of the Steel Dirt Separator, cleaning can be done very easily.
- Specially designed stainless steel mesh filters are present.
- Percentage of glycol in the heating system is maximum 50%
- Accumulated impurity volume is much bigger according to classical dirt separators. Needed periodic cleaning is much more less.



## Scaling




## Installation Diagram



Installation diagram given above is just a template. Installation must be done according to update standards and directives

## 131.13 FLANGED STEEL DIRT SEPARATOR

| TYPE | A | | B (mm) | C (inch) | D (mm) | E (mm) | F (inch) | Weight (kg) | Kv ($m^3/h$) | Volume (lt) | Flow Rate ($m^3/h$) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 131.13.16.1 | DN 50 | 2” | 420 | ¾” | 322 | 480 | 1” | 13 | 75 | 7 | 8-12 |
| 131.13.17.1 | DN 65 | 2½” | 420 | ¾” | 322 | 480 | 1” | 15 | 150 | 7 | 10-22 |
| 131.13.18.1 | DN 80 | 3” | 500 | ¾” | 384 | 556 | 1” | 19 | 180 | 15 | 18-30 |
| 131.13.19.1 | DN 100 | 4” | 504 | ¾” | 384 | 556 | 1” | 22 | 280 | 15 | 28-48 |
| 131.13.20.1 | DN 125 | 5” | 635 | ¾” | 480 | 725 | 1” | 37 | 450 | 45 | 45-71 |
| 131.13.21.1 | DN 150 | 6” | 635 | ¾” | 480 | 725 | 1” | 40 | 720 | 45 | 67-105 |

Kv = Q / √ΔP
Q = Water flow rate ($m^3$ / h)  ΔP = Pressure loss on the product (bar)

## 131.13 WELDED STEEL DIRT SEPARATOR

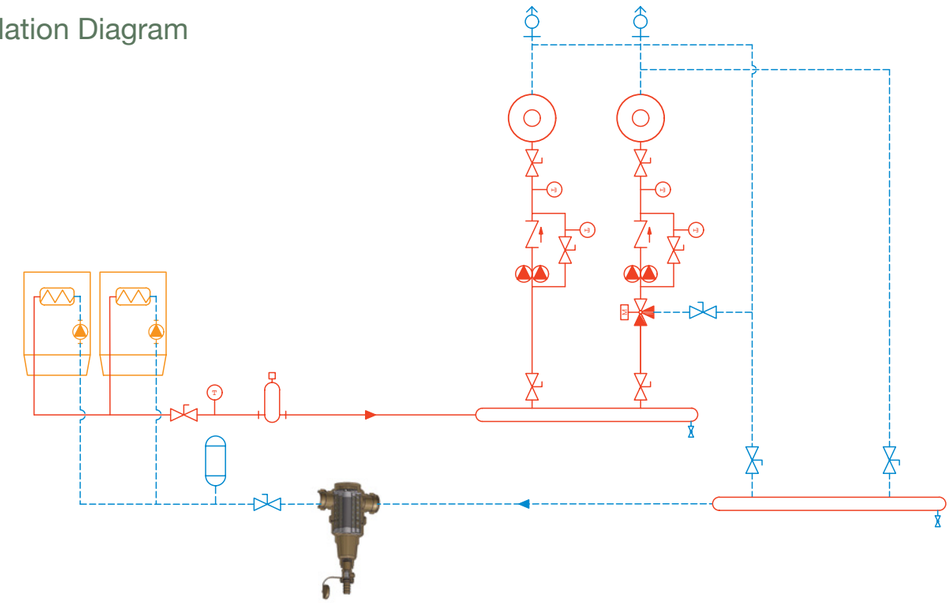
| TYPE | A | | B (mm) | C (inch) | D (mm) | E (mm) | F (inch) | Weight (kg) | Kv ($m^3/h$) | Volume (lt) | Flow Rate ($m^3/h$) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 131.13.16.2 | DN 50 | 60,3 | 330 | ¾” | 322 | 480 | 1” | 8 | 75 | 7 | 8-12 |
| 131.13.17.2 | DN 65 | 76,1 | 330 | ¾” | 322 | 480 | 1” | 8 | 150 | 7 | 10-22 |
| 131.13.18.2 | DN 80 | 88,9 | 400 | ¾” | 384 | 556 | 1” | 11 | 180 | 15 | 18-30 |
| 131.13.19.2 | DN 100 | 114,3 | 400 | ¾” | 384 | 556 | 1” | 12 | 280 | 15 | 28-48 |
| 131.13.20.2 | DN 125 | 139,7 | 525 | ¾” | 480 | 725 | 1” | 24 | 450 | 45 | 45-71 |
| 131.13.21.2 | DN 150 | 168,3 | 525 | ¾” | 480 | 725 | 1” | 24 | 720 | 45 | 67-105 |

Kv = Q / √ΔP
Q = Water flow rate ($m^3$ / h)  ΔP = Pressure loss on the product (bar)

# R2829 SELF-CLEANING DIRT SEPARATOR

KODSAN

## Installation Diagram



Installation diagram given above is just a template. Installation must be done according to update standards and directives

| | | |
|---|---|---|
| **Body** | : | Brass CW 617N UNI EN 12165 |
| **Seals** | : | EPDM and NBR |
| **Cartridge** | : | Stainless steel, AISI 302 |
| **Connection Size** | : | G ½”-G 2” |
| **Threaded Connection** | : | F UNI EN ISO 228 |

**TECHNICAL CHARACTERISTICS**

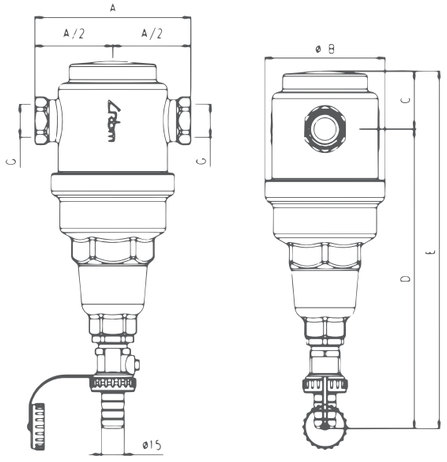
| | | |
|---|---|---|
| **Fluids** | : | Water<br>Water + Glycol 30% |
| **Maximum Operating Temperature** | : | 110 °C |
| **Maximum Operating Pressure** | : | 1000 kPa (10 bar) |

Self-cleaning dirt separator series is used to remove the dirt inside the fluids circulating in heating and cooling systems. The continuous, constant action of these devices helps to eliminate impurities inside the system as well as to ensuring a more efficient operation thereof, reducing failures and malfunctions, with consequent advantages for the user in terms of:
- Energy consumption reduction
- Maintenance work reduction
- System management cost reduction

Unlike traditional filters, dirt separators feature reduced head losses, the ability to separate and remove much smaller particles, and a lower frequency of filtering mesh cleaning operations, besides being self-cleaning (just open the purge valve to remove accumulated dirt, even with the system running).

CAUTION:
In order to function properly, the dirt separator must be installed in a vertical position (on horizontal pipes), with the impurity drain valve facing downwards.

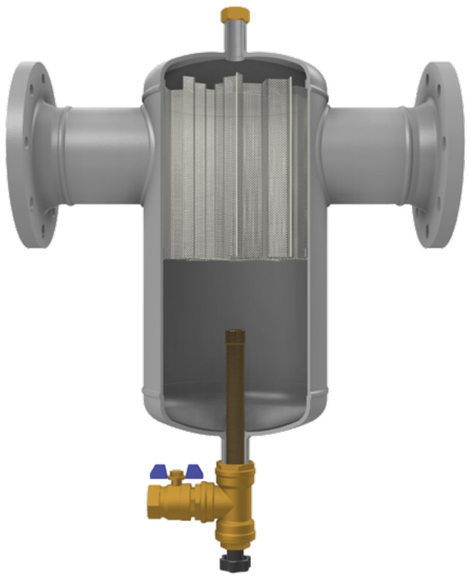
## Scaling




| Product Code | Connection Size | A (mm) | ØB (mm) | C (mm) | D (mm) | E (mm) | Kv ($m^3/h$) | Flow Rate ($m^3/h$) |
|---|---|---|---|---|---|---|---|---|
| R28290400 | ½” | 100 | 79 | 37,5 | 194 | 231,5 | 7,40 | 0,79 |
| R28290500 | ¾” | 105 | 79 | 37,5 | 194 | 231,5 | 12,66 | 1,37 |
| R28290600 | 1” | 110 | 79 | 37,5 | 194 | 231,5 | 20,44 | 2,12 |
| R28290700 | 1¼” | 115 | 79 | 37,5 | 194 | 231,5 | 28,14 | 3,49 |
| R28290800 | 1½” | 120 | 88 | 47 | 201 | 248 | 44,45 | 5,44 |
| R28290900 | 2” | 125 | 88 | 47 | 201 | 248 | 65,58 | 8,50 |

# 131.15 **KMTT** STEEL MAGNETIC DIRT SEPARATOR

KODSAN

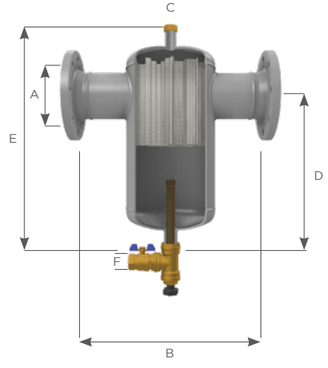
Manufactured in accordance with 2014/68/EU Pressure Equipment Directive and EN 13445-3 standards.

| | | |
|---|---|---|
| **Maximum Operating Temperature** | : | 110 °C |
| **Maximum Operating Pressure** | : | 1000 kPa (10 bar) |
| **Connection Sizes / Pressure Class** | | |
| **Flanged Connection** | : | DN50-DN150 / PN16 |
| **Welded Connection** | : | 60,3 mm-168,3 mm |
| | | (Please contact for products between DN200-DN250) |
| **Filter Material** | : | Stainless steel |
| **Outer Surface Protection Paint** | : | Electrostatic Powder Paint |

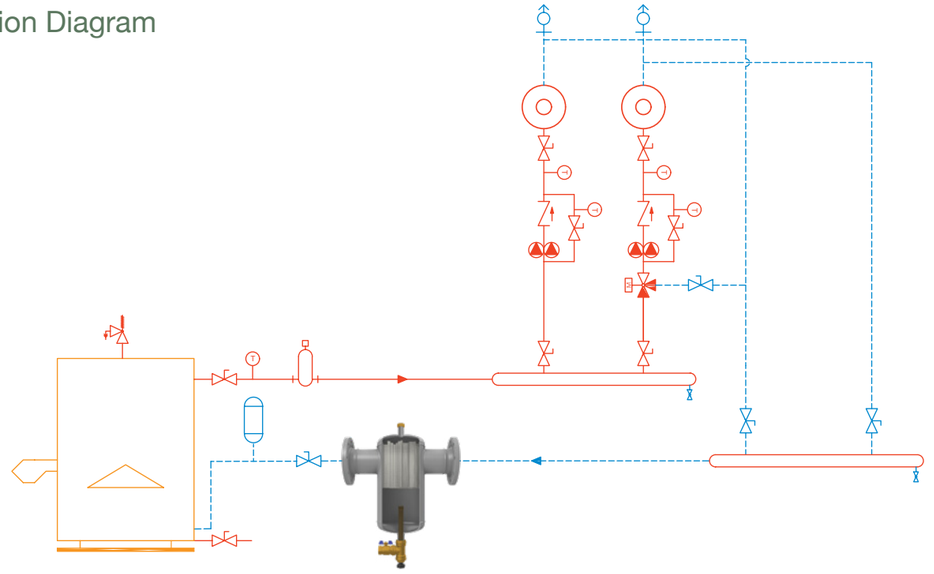
**SPECIFICATIONS / USAGE AREAS**

- Since the cleaning and maintenance of the classical type of dirt separators cannot be made easily by the user, they generally become out of function by time. With the help of ball valve on the bottom of the Steel Magnetic Dirt Separator, cleaning can be done very easily.
- Specially designed stainless steel mesh filters are present.
- Percentage of glycol in the heating system is maximum 50%
- Accumulated impurity volume is much bigger according to classical dirt separators. Needed periodic cleaning is much more less.
- The water flow rate is low at the bottom where the super strong magnet is located. Therefore, it can catch even the smallest parts.
- When the discharge valve is opened, the magnet is removed and accumulated parts under the body are taken out. In order for the magnet to be removed easily, the Steel Magnetic Dirt Seperator must be mounted at least 30 cm above the ground.

## Scaling




## Installation Diagram



Installation diagram given above is just a template. Installation must be done according to update standards and directives

## 131.15 FLANGED STEEL MAGNETIC DIRT SEPARATOR

| TYPE | A | | B (mm) | C (inch) | D (mm) | E (mm) | F (inch) | Weight (kg) | Kv ($m^3$/h) | Volume (lt) | Flow Rate ($m^3$/h) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 131.15.16.1 | DN 50 | 2” | 420 | ¾” | 322 | 480 | 1” | 13 | 75 | 7 | 8-12 |
| 131.15.17.1 | DN 65 | 2½” | 420 | ¾” | 322 | 480 | 1” | 15 | 150 | 7 | 10-22 |
| 131.15.18.1 | DN 80 | 3” | 500 | ¾” | 384 | 556 | 1” | 19 | 180 | 15 | 18-30 |
| 131.15.19.1 | DN 100 | 4” | 504 | ¾” | 384 | 556 | 1” | 22 | 280 | 15 | 28-48 |
| 131.15.20.1 | DN 125 | 5” | 635 | ¾” | 480 | 725 | 1” | 37 | 450 | 45 | 45-71 |
| 131.15.21.1 | DN 150 | 6” | 635 | ¾” | 480 | 725 | 1” | 40 | 720 | 45 | 67-105 |

Kv = Q / √ΔP
Q = Water flow rate ($m^3$ / h)  ΔP = Pressure loss on the product (bar)

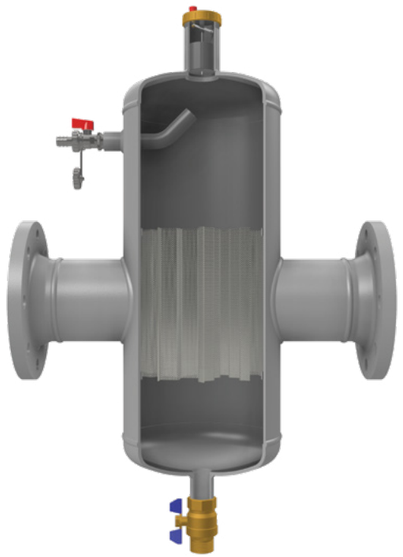
## 131.15 WELDED STEEL MAGNETIC DIRT SEPARATOR

| TYPE | A | | B (mm) | C (inch) | D (mm) | E (mm) | F (inch) | Weight (kg) | Kv ($m^3$/h) | Volume (lt) | Flow Rate ($m^3$/h) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 131.15.16.2 | DN 50 | 60,3 | 330 | ¾” | 322 | 480 | 1” | 8 | 75 | 7 | 8-12 |
| 131.15.17.2 | DN 65 | 76,1 | 330 | ¾” | 322 | 480 | 1” | 8 | 150 | 7 | 10-22 |
| 131.15.18.2 | DN 80 | 88,9 | 400 | ¾” | 384 | 556 | 1” | 11 | 180 | 15 | 18-30 |
| 131.15.19.2 | DN 100 | 114,3 | 400 | ¾” | 384 | 556 | 1” | 12 | 280 | 15 | 28-48 |
| 131.15.20.2 | DN 125 | 139,7 | 525 | ¾” | 480 | 725 | 1” | 24 | 450 | 45 | 45-71 |
| 131.15.21.2 | DN 150 | 168,3 | 525 | ¾” | 480 | 725 | 1” | 24 | 720 | 45 | 67-105 |

Kv = Q / √ΔP
Q = Water flow rate ($m^3$ / h)  ΔP = Pressure loss on the product (bar)

# 131.17 **KPH** STEEL AIR&DIRT SEPARATOR

KODSAN

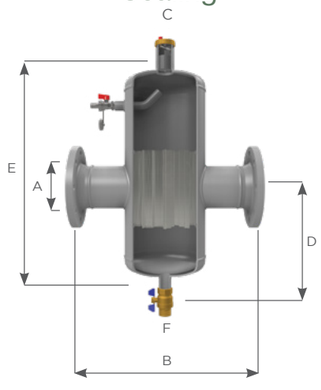
Manufactured in accordance with 2014/68/EU Pressure Equipment Directive and EN 13445-3 standards.

| | | |
|---|---|---|
| **Maximum Operating Temperature** | : | 110 °C |
| **Maximum Operating Pressure** | : | 1000 kPa (10 bar) |
| **Connection Sizes / Pressure Class** | | |
| **Flanged Connection** | : | DN50-DN150 / PN16 |
| **Welded Connection** | : | 60,3 mm-168,3 mm |
| | | (Please contact for products between DN200- DN600) |
| **Filter Material** | : | Stainless steel |
| **Outer Surface Protection Paint** | : | Electrostatic Powder Paint |

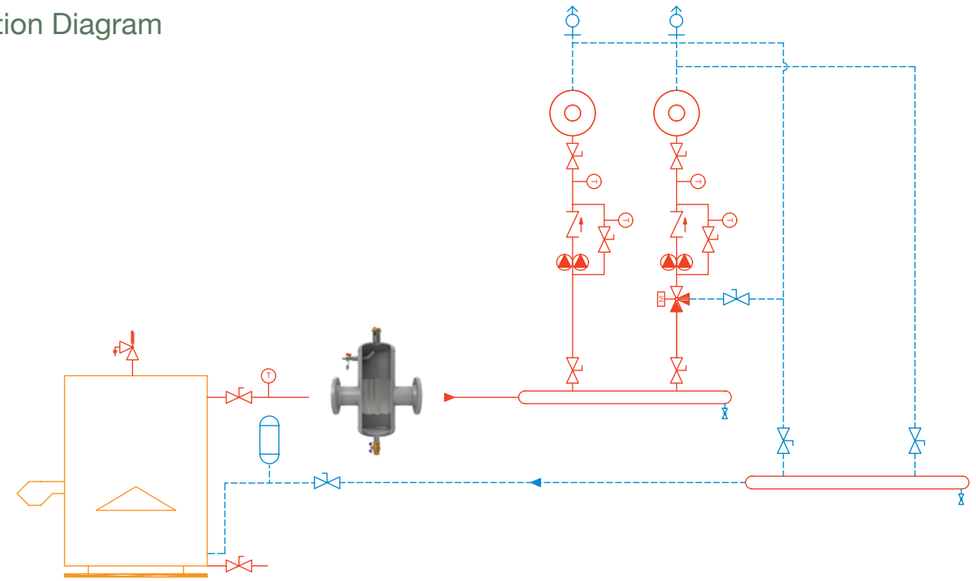
**SPECIFICATIONS / USAGE AREAS**

- Steel Air& Dirt Separator product offers a solution by combining two functions in one product. Due to the dual function it is cost and installation space efficient.
- If there are some limitations to install air and dirt separator separately the Steel Air& Dirt Separator series will be the ideal solution.
- The efficient and continuous separation of air and impurities circulating in the heating system considerably increases the efficiency and service life of the whole system.
- Simultaneously performs air seperator and dirt separator in the same unit. It automatically evacuates the air. Through its large reservoir, the cleaning period for sediment is long. Optional automatic residue discharge system can be applied.
- Percentage of glycol in the heating system is maximum 50%.

## Scaling




## Installation Diagram



Installation diagram given above is just a template. Installation must be done according to update standards and directives

## 131.17 FLANGED STEEL AIR & DIRT SEPARATOR

| TYPE | A | | B (mm) | C* | D (mm) | E (mm) | F (inch) | Weight (kg) | Kv ($m^3$/h) | Volume (lt) | Flow Rate ($m^3$/h) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 131.17.16.1 | DN 50 | 2” | 420 | Special Thread | 268 | 578 | 1” | 13 | 75 | 9 | 8 - 12 |
| 131.17.17.1 | DN 65 | 2½” | 420 | Special Thread | 268 | 578 | 1” | 14 | 150 | 9 | 10 - 22 |
| 131.17.18.1 | DN 80 | 3” | 500 | Special Thread | 293 | 683 | 1” | 22 | 180 | 18 | 18 - 30 |
| 131.17.19.1 | DN 100 | 4” | 504 | Special Thread | 293 | 683 | 1” | 25 | 280 | 18 | 28 - 48 |
| 131.17.20.1 | DN 125 | 5” | 635 | Special Thread | 403 | 903 | 1” | 46 | 450 | 57 | 45 - 71 |
| 131.17.21.1 | DN 150 | 6” | 635 | Special Thread | 403 | 903 | 1” | 47 | 720 | 57 | 67 - 105 |

Kv = Q / √ΔP
Q = Water flow rate ($m^3$ / h)  ΔP = Pressure loss on the product (bar)
*: Connection C has special design with Ø50 whitworth thread.

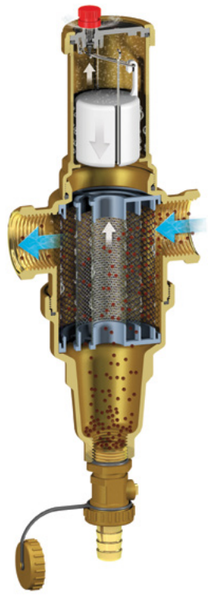
## 131.17 WELDED STEEL AIR & DIRT SEPARATOR

| TYPE | A | | B (mm) | C* | D (mm) | E (mm) | F (inch) | Weight (kg) | Kv ($m^3$/h) | Volume (lt) | Flow Rate ($m^3$/h) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 131.17.16.2 | DN50 | 60,3 | 330 | Special Thread | 268 | 578 | 1” | 8 | 75 | 9 | 8 - 12 |
| 131.17.17.2 | DN65 | 76,1 | 330 | Special Thread | 268 | 578 | 1” | 8 | 150 | 9 | 10 - 22 |
| 131.17.18.2 | DN80 | 88,9 | 400 | Special Thread | 293 | 683 | 1” | 11 | 180 | 18 | 18 - 30 |
| 131.17.19.2 | DN100 | 114,3 | 400 | Special Thread | 293 | 683 | 1” | 12 | 280 | 18 | 28 - 48 |
| 131.17.20.2 | DN125 | 139,7 | 525 | Special Thread | 403 | 903 | 1” | 24 | 450 | 57 | 45 - 71 |
| 131.17.21.2 | DN150 | 168,3 | 525 | Special Thread | 403 | 903 | 1” | 24 | 720 | 57 | 67 - 105 |

Kv = Q / √ΔP
Q = Water flow rate ($m^3$ / h)  ΔP = Pressure loss on the product (bar)
*: Connection C has special design with Ø50 whitworth thread.

# R2831 COMBINED SELF-CLEANING DIRT SEPARATOR & DEAERATOR

KODSAN



| | | |
|---|---|---|
| **Body** | : | Brass CW 617N UNI EN 12165 |
| **Seals** | : | EPDM and NBR |
| **Float** | : | Float and lever in polypropylene |
| **Cartridge** | : | Stainless steel, AISI 302 |
| **Spring** | : | Stainless steel, AISI 302 |
| **Connection Size** | : | G ½"- G 1¼" |
| **Threaded Connection** | : | F UNI EN ISO 228 |

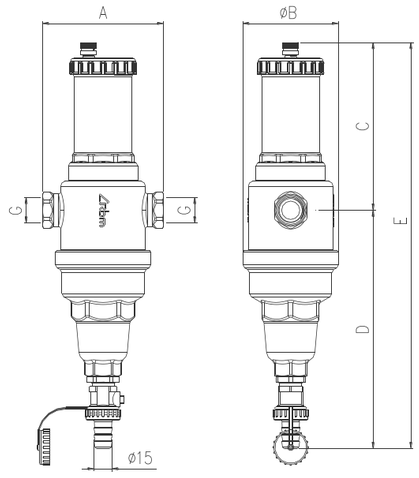
**TECHNICAL CHARACTERISTICS**

| | | |
|---|---|---|
| **Fluids** | : | Water<br>Water + Glycol 30% |
| **Maximum Operating Temperature** | : | 110 °C |
| **Maximum Operating Pressure** | : | 1000 kPa (10 bar) |
| **Maximum Discharge Pressure** | : | 1000 kPa (10 bar) |

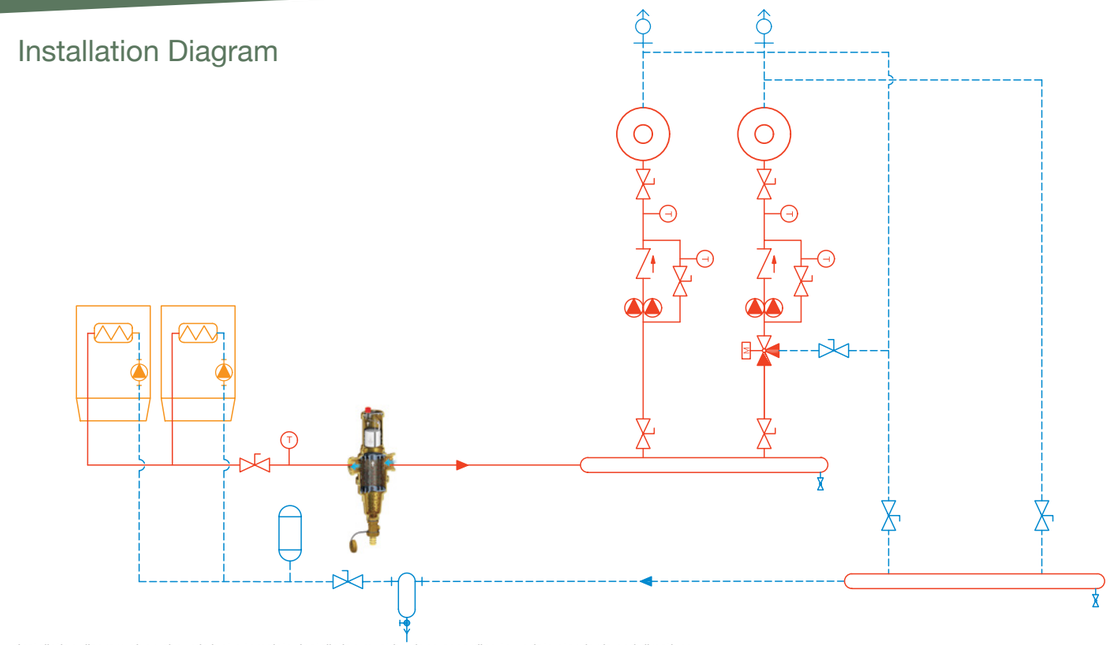
R2831 series combine the functions of common dirt separators and deaerators in a single solution. They can be used in heating and cooling systems. They are used to remove air and impurities from hydraulic circuits.
In addition, by removing dirt and air from the system, unnecessary breakdowns and malfunctions can be reduced, helping to:
- Increase heating and cooling efficiency
- Reduce the formation of corrosion in all points of the system
- Reduce extraordinary maintenance work
- Reduce the effects causing system noise
- Lower the cost of system management

Merging two different components into one solution has allowed us to significantly reduce overall dimensions with respect to conventionally assembling two different products: dirt separator + deaerator.
CAUTIONS:
In order to function properly, the dirt separator / deaerator must be installed in a vertical position (on horizontal pipes), with the impurity drain valve facing downwards.

## Scaling




## Installation Diagram

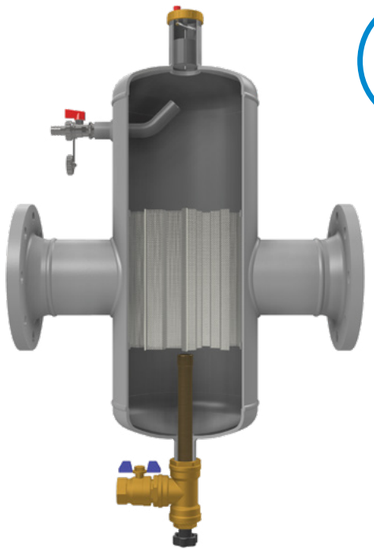


Installation diagram given above is just a template. Installation must be done according to update standards and directives

| Product Code | Connection Size | A (mm) | ØB (mm) | C (mm) | D (mm) | E (mm) | Kv ($m^3/h$) | Flow Rate ($m^3/h$) |
|---|---|---|---|---|---|---|---|---|
| R28310400 | ½" | 100 | 79 | 136,5 | 194 | 330,5 | 7,40 | 0,79 |
| R28310500 | ¾" | 105 | 79 | 136,5 | 194 | 330,5 | 12,66 | 1,37 |
| R28310600 | 1" | 110 | 79 | 136,5 | 194 | 330,5 | 20,44 | 2,12 |
| R28310700 | 1¼" | 115 | 79 | 136,5 | 194 | 330,5 | 28,14 | 3,49 |

# 131.18 **KMPH** STEEL MAGNETIC AIR&DIRT SEPARATOR

KODSAN

NEW PRODUCT

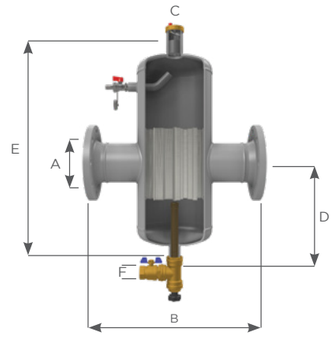
Manufactured in accordance with 2014/68/EU Pressure Equipment Directive and EN 13445-3 standards.

| | | |
|---|---|---|
| **Maximum Operating Temperature** | : | 110 °C |
| **Maximum Operating Pressure** | : | 1000 kPa (10 bar) |
| **Connection Sizes / Pressure Class** | | |
| **Flanged Connection** | : | DN50-DN150 / PN16 |
| **Welded Connection** | : | 60,3 mm-168,3 mm<br>(Please contact for products between DN200-DN250) |
| **Filter Material** | : | Stainless steel |
| **Outer Surface Protection Paint** | : | Electrostatic Powder Paint |

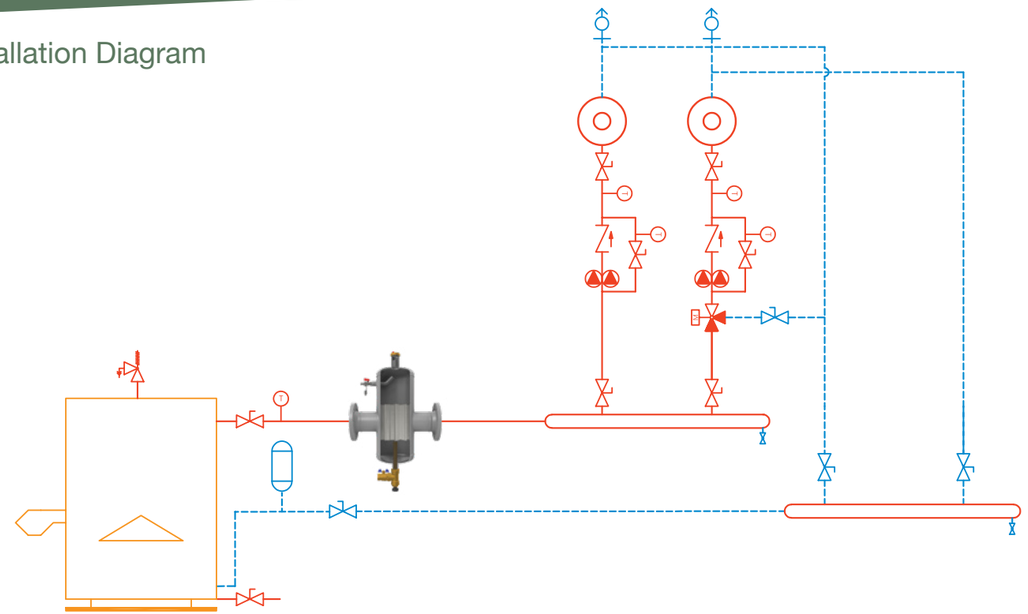
**SPECIFICATIONS / USAGE AREAS**

- Since the cleaning and maintenance of the classical type of dirt separators cannot be made easily by the user, they generally become out of function by time. With the help of ball valve on the bottom of the Steel Magnetic Dirt Separator, cleaning can be done very easily.
- Specially designed stainless steel mesh filters are present.
- Percentage of glycol in the heating system is maximum 50%
- Accumulated impurity volume is much bigger according to classical dirt separators. Needed periodic cleaning is much more less.
- The water flow rate is low at the bottom where the super strong magnet is located. Therefore, it can catch even the smallest parts.
- When the discharge valve is opened, the magnet is removed and accumulated parts under the body are taken out. In order for the magnet to be removed easily, the Steel Magnetic Dirt Seperator must be mounted at least 30 cm above the ground.

## Scaling




## Installation Diagram



Installation diagram given above is just a template. Installation must be done according to update standards and directives

## 131.18 FLANGED STEEL MAGNETIC AIR&DIRT SEPARATOR

| TYPE | A | | B (mm) | C* | D (mm) | E (mm) | F (inch) | Weight (kg) | Kv ($m^3$/h) | Volume (lt) | Flow Rate ($m^3$/h) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 131.18.16.1 | DN 50 | 2” | 420 | Special Thread | 268 | 578 | 1” | 13 | 75 | 9 | 8 - 12 |
| 131.18.17.1 | DN 65 | 2½” | 420 | Special Thread | 268 | 578 | 1” | 14 | 150 | 9 | 10 - 22 |
| 131.18.18.1 | DN 80 | 3” | 500 | Special Thread | 293 | 683 | 1” | 22 | 180 | 18 | 18 - 30 |
| 131.18.19.1 | DN 100 | 4” | 504 | Special Thread | 293 | 683 | 1” | 25 | 280 | 18 | 28 - 48 |
| 131.18.20.1 | DN 125 | 5” | 635 | Special Thread | 403 | 903 | 1” | 46 | 450 | 57 | 45 - 71 |
| 131.18.21.1 | DN 150 | 6” | 635 | Special Thread | 403 | 903 | 1” | 47 | 720 | 57 | 67 - 105 |

Kv = Q / √ΔP
Q = Water flow rate ($m^3$ / h)  ΔP = Pressure loss on the product (bar)
*: Connection C has special design with Ø50 whitworth thread.

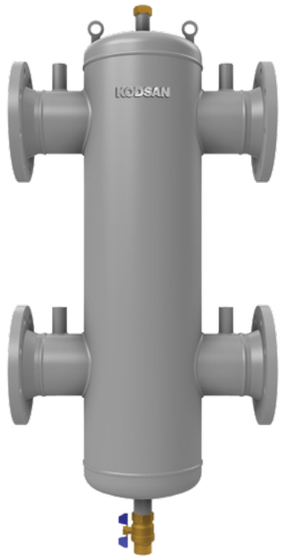
## 131.18 WELDED STEEL MAGNETIC AIR&DIRT SEPARATOR

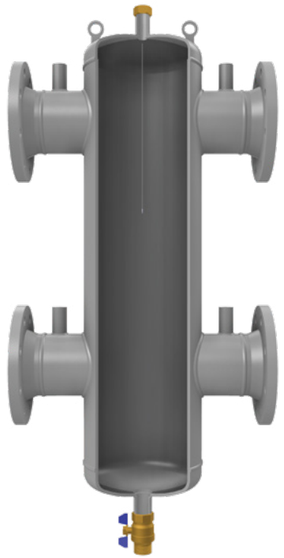
| TYPE | A | | B (mm) | C* | D (mm) | E (mm) | F (inch) | Weight (kg) | Kv ($m^3$/h) | Volume (lt) | Flow Rate ($m^3$/h) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 131.18.16.2 | DN50 | 60,3 | 330 | Special Thread | 268 | 578 | 1” | 8 | 75 | 9 | 8 - 12 |
| 131.18.17.2 | DN65 | 76,1 | 330 | Special Thread | 268 | 578 | 1” | 8 | 150 | 9 | 10 - 22 |
| 131.18.18.2 | DN80 | 88,9 | 400 | Special Thread | 293 | 683 | 1” | 11 | 180 | 18 | 18 - 30 |
| 131.18.19.2 | DN100 | 114,3 | 400 | Special Thread | 293 | 683 | 1” | 12 | 280 | 18 | 28 - 48 |
| 131.18.20.2 | DN125 | 139,7 | 525 | Special Thread | 403 | 903 | 1” | 24 | 450 | 57 | 45 - 71 |
| 131.18.21.2 | DN150 | 168,3 | 525 | Special Thread | 403 | 903 | 1” | 24 | 720 | 57 | 67 - 105 |

Kv = Q / √ΔP
Q = Water flow rate ($m^3$ / h)  ΔP = Pressure loss on the product (bar)
*: Connection C has special design with Ø50 whitworth thread.

# 131.19 **KDT** STEEL HYDRAULIC SEPARATOR

KODSAN



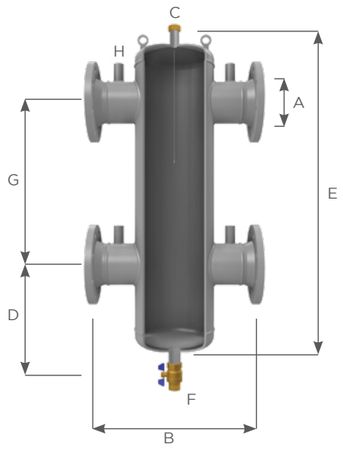



Manufactured in accordance with 2014/68/EU Pressure Equipment Directive and EN 13445-3 standards.

**Maximum Operating Temperature** : 110 °C
**Maximum Operating Pressure** : 1000 kPa (10 bar)
**Connection Sizes / Pressure Class**
**Flanged Connection** : DN50-DN150 / PN16
**Welded Connection** : 60,3 mm-168,3 mm
(Please contact for products between DN200- DN600)
**Filter Material** : Perforated Turbulator
**Outer Surface Protection Paint** : Electrostatic Powder Paint

The Steel Hydraulic Separator is a device which makes the primary and secondary circuits connected to it independently. It can be used in hot or chilled water systems. The Steel Hydraulic Separators are supplied with air vent to permit automatic discharge of the air in the circuit and a drain valve for removing any impurities accumulated in the bottom of the unit. The hydraulic separator should be sized according to the maximum flow rate value of the primary or secondary circuit, whichever is the greatest.

## Scaling

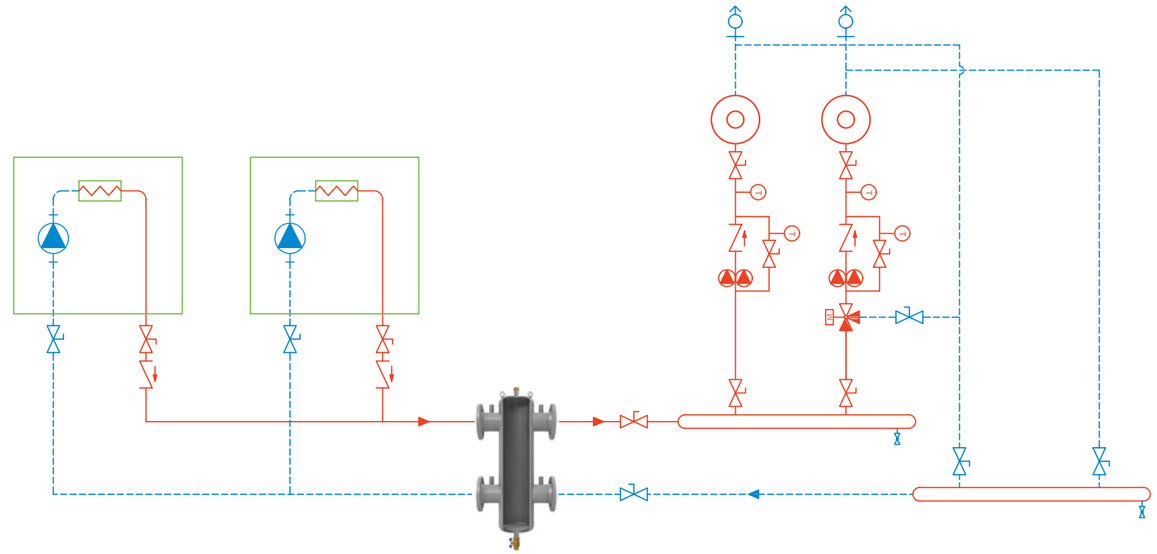



### SPECIFICATIONS / USAGE AREAS

- In systems where primary and secondary hydraulic circuits should be separated hydraulically from each other.
- When circulation capacity needs are different in primary and secondary circuits
- In systems where more than one energy sources (cascade system) are used
- In systems where several pumps and heating circuits are present
- In systems where pressure balancing is needed
- In systems where energy supply and/or energy demand are not constant
- Percentage of glycol in the heating system is maximum 50%.



## Installation Diagram



Installation diagram given above is just a template. Installation must be done according to update standards and directives

## 131.19 FLANGED STEEL HYDRAULIC SEPARATOR

| TYPE | A | | B (mm) | C (inch) | D (mm) | E (mm) | F (inch) | G (mm) | H (inch) | Weight (kg) | Kv ($m^3$/h) | Volume (lt) | Flow Rate ($m^3$/h) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 131.19.16.1 | DN 50 | 2” | 450 | ¾” | 265 | 795 | 1” | 330 | ½” | 24 | 76 | 14 | 5-15 |
| 131.19.17.1 | DN 65 | 2½” | 450 | ¾” | 265 | 795 | 1” | 330 | ½” | 27 | 125 | 14 | 10-22 |
| 131.19.18.1 | DN 80 | 3” | 470 | ¾” | 285 | 940 | 1” | 450 | ½” | 37 | 172 | 28 | 15-30 |
| 131.19.19.1 | DN 100 | 4” | 470 | ¾” | 285 | 940 | 1” | 450 | ½” | 40 | 304 | 28 | 25-60 |
| 131.19.20.1 | DN 125 | 5” | 635 | ¾” | 300 | 1160 | 1” | 560 | ½” | 65 | 451 | 78 | 35-83 |
| 131.19.21.1 | DN 150 | 6” | 635 | ¾” | 300 | 1160 | 1” | 560 | ½” | 75 | 663 | 78 | 55-125 |

Kv = Q / √ΔP
Q = Water flow rate ($m^3$ / h)  ΔP = Pressure loss on the product (bar)

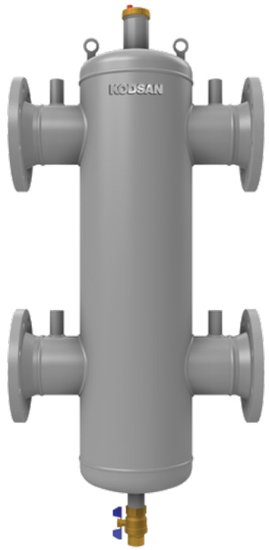
## 131.19 WELDED STEEL HYDRAULIC SEPARATOR

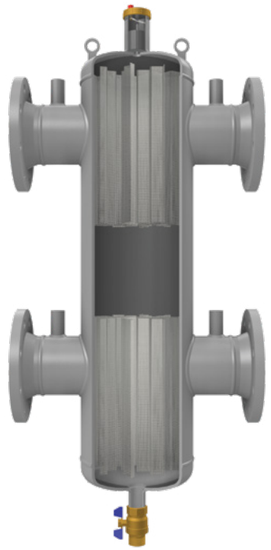
| TYPE | A | | B (mm) | C (inch) | D (mm) | E (mm) | F (inch) | G (mm) | H (inch) | Weight (kg) | Kv ($m^3$/h) | Volume (lt) | Flow Rate ($m^3$/h) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 131.19.16.2 | DN 50 | 60,3 | 360 | ¾” | 265 | 795 | 1” | 330 | ½” | 14 | 76 | 14 | 5-15 |
| 131.19.17.2 | DN 65 | 76,1 | 360 | ¾” | 265 | 795 | 1” | 330 | ½” | 15 | 125 | 14 | 10-22 |
| 131.19.18.2 | DN 80 | 88,9 | 370 | ¾” | 285 | 940 | 1” | 450 | ½” | 21 | 172 | 28 | 15-30 |
| 131.19.19.2 | DN 100 | 114,3 | 370 | ¾” | 285 | 940 | 1” | 450 | ½” | 22 | 304 | 28 | 25-60 |
| 131.19.20.2 | DN 125 | 139,7 | 580 | ¾” | 300 | 1160 | 1” | 560 | ½” | 40 | 451 | 78 | 35-83 |
| 131.19.21.2 | DN 150 | 168,3 | 580 | ¾” | 300 | 1160 | 1” | 560 | ½” | 45 | 663 | 78 | 55-125 |

Kv = Q / √ΔP
Q = Water flow rate ($m^3$ / h)  ΔP = Pressure loss on the product (bar)

# 131.20 **KPD** STEEL MULTIFUNCTION HYDRAULIC SEPARATOR

KODSAN



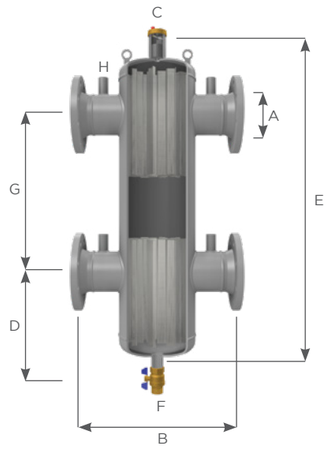
Manufactured in accordance with 2014/68/EU Pressure Equipment Directive and EN 13445-3 standards.

**Maximum Operating Temperature** : 110 °C
**Maximum Operating Pressure** : 1000 kPa (10 bar)
**Connection Sizes / Pressure Class**
**Flanged Connection** : DN50-DN150 / PN16
**Welded Connection** : 60,3 mm-168,3 mm
(Please contact for products between DN200- DN600)
**Filter Material** : Stainless steel
**Outer Surface Protection Paint** : Electrostatic Powder Paint

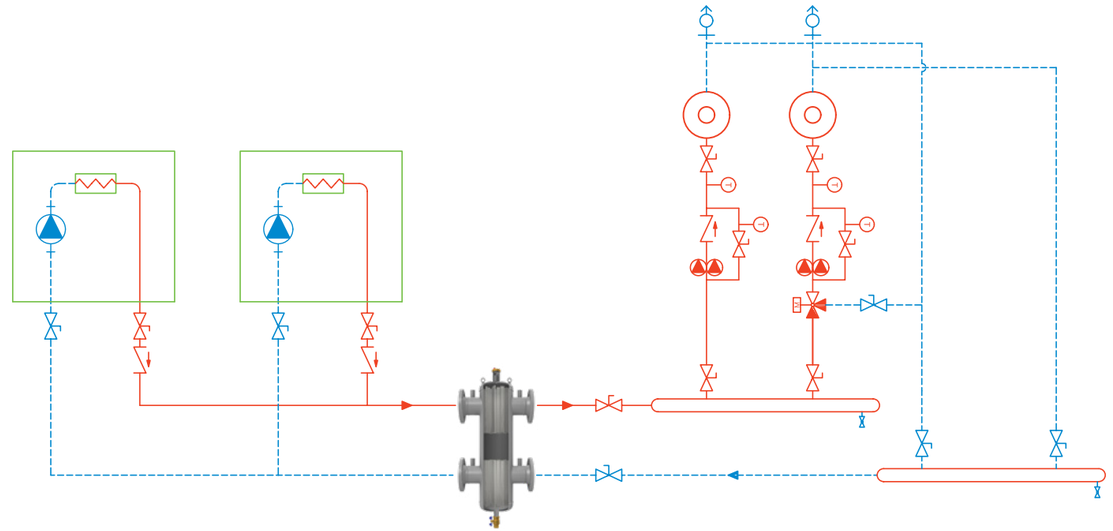
Steel Multifunction Hydraulic Separator provides the benefits of the Steel Hydraulic Separator in the system, as well as automatic air releasing, impurity and dirt separation functions.
Steel Multifunction Hydraulic Separator perform triple functions. Air, dirt separation and hydraulic balancing together in one unit which is highly cost and space effective.Usage of a Steel Multifunction Hydraulic Separator solves hydraulic imbalance problems.

**SPECIFICATIONS / USAGE AREAS**
• Steel Multifunction Hydraulic Separator units prevent overloading of boilers or pumps.
• Automation systems will control the heating circuit more effective
• Percentage of glycol in the heating system is maximum 50%

## Scaling




## Installation Diagram



Installation diagram given above is just a template. Installation must be done according to update standards and directives

## 131.20 FLANGED STEEL MULTIFUNCTION HYDRAULIC SEPARATOR

| TYPE | A | | B (mm) | C* | D (mm) | E (mm) | F (inch) | G (mm) | H (inch) | Weight (kg) | Kv ($m^3$/h) | Volume (lt) | Flow Rate ($m^3$/h) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 131.20.16.1 | DN 50 | 2” | 450 | Special Thread | 265 | 818 | 1” | 330 | ½” | 24 | 75 | 14 | 8-12 |
| 131.20.17.1 | DN 65 | 2½” | 450 | Special Thread | 265 | 818 | 1” | 330 | ½” | 27 | 150 | 14 | 10-22 |
| 131.20.18.1 | DN 80 | 3” | 470 | Special Thread | 285 | 963 | 1” | 450 | ½” | 37 | 180 | 28 | 18-30 |
| 131.20.19.1 | DN 100 | 4” | 470 | Special Thread | 285 | 963 | 1” | 450 | ½” | 40 | 280 | 28 | 28-48 |
| 131.20.20.1 | DN 125 | 5” | 635 | Special Thread | 300 | 1183 | 1” | 560 | ½” | 65 | 450 | 78 | 45-71 |
| 131.20.21.1 | DN 150 | 6” | 635 | Special Thread | 300 | 1183 | 1” | 560 | ½” | 75 | 720 | 78 | 67-105 |

Kv = Q / √ΔP
Q = Water flow rate ($m^3$ / h) ΔP = Pressure loss on the product (bar)
*: Connection C has special design with Ø50 whitworth thread.

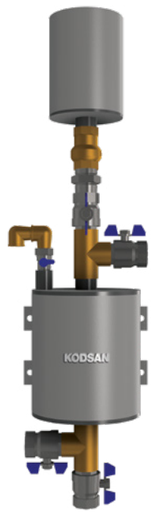
## 131.20 WELDED STEEL MULTIFUNCTION HYDRAULIC SEPARATOR

| TYPE | A | | B (mm) | C* | D (mm) | E (mm) | F (inch) | G (mm) | H (inch) | Weight (kg) | Kv ($m^3$/h) | Volume (lt) | Flow Rate ($m^3$/h) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 131.20.16.2 | DN 50 | 60,3 | 360 | Special Thread | 265 | 818 | 1” | 330 | ½” | 14 | 75 | 14 | 8-12 |
| 131.20.17.2 | DN 65 | 76,1 | 360 | Special Thread | 265 | 818 | 1” | 330 | ½” | 15 | 150 | 14 | 10-22 |
| 131.20.18.2 | DN 80 | 88,9 | 370 | Special Thread | 285 | 963 | 1” | 450 | ½” | 21 | 180 | 28 | 18-30 |
| 131.20.19.2 | DN 100 | 114,3 | 370 | Special Thread | 285 | 963 | 1” | 450 | ½” | 22 | 280 | 28 | 28-48 |
| 131.20.20.2 | DN 125 | 139,7 | 580 | Special Thread | 300 | 1183 | 1” | 560 | ½” | 40 | 450 | 78 | 45-71 |
| 131.20.21.2 | DN 150 | 168,3 | 580 | Special Thread | 300 | 1183 | 1” | 560 | ½” | 45 | 720 | 78 | 67-105 |

Kv = Q / √ΔP
Q = Water flow rate ($m^3$ / h) ΔP = Pressure loss on the product (bar)
*: Connection C has special design with Ø50 whitworth thread.

# 131.21 **KJT** DOSING POT

KODSAN




Conform to the requirements of Pressure Equipment Directive 2014/68/EU and are designed and manufactured according to Sound Engineering Practice (S.E.P).

| | | |
|---|---|---|
| **Vessel** | : | Carbon Steel |
| **Tundish** | : | Carbon Steel |
| **Flow/Return Valve** | : | Brass (plated) |
| **Drain Valve** | : | Brass (plated) |
| **Maximum Operating Temperature** | : | 100 °C |
| **Maximum Operating Pressure** | : | 1000 kPa (10 bar) |

Dosing Pots are designed to provide the means of introducing chemical solutions such as corrosion inhibitors into closed heating and chilled water systems.

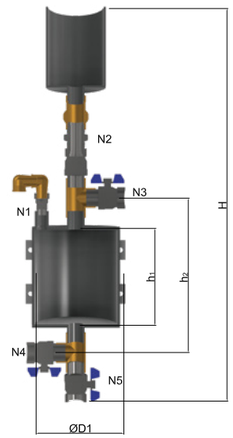
The specific size of the dosing pot in a system is not critical as the pot can be filled multiple times to obtain the correct concentration. The benefit of using a smaller unit, is that it is easier to physically handle and also allows for more accurate dosing. However, since chilled water systems generally require higher concentrations of dosing chemical, usually glycol, to be dosed into the system a larger dosing pot may be required. For concentration levels always consult the manufacturer.

**CAUTION**

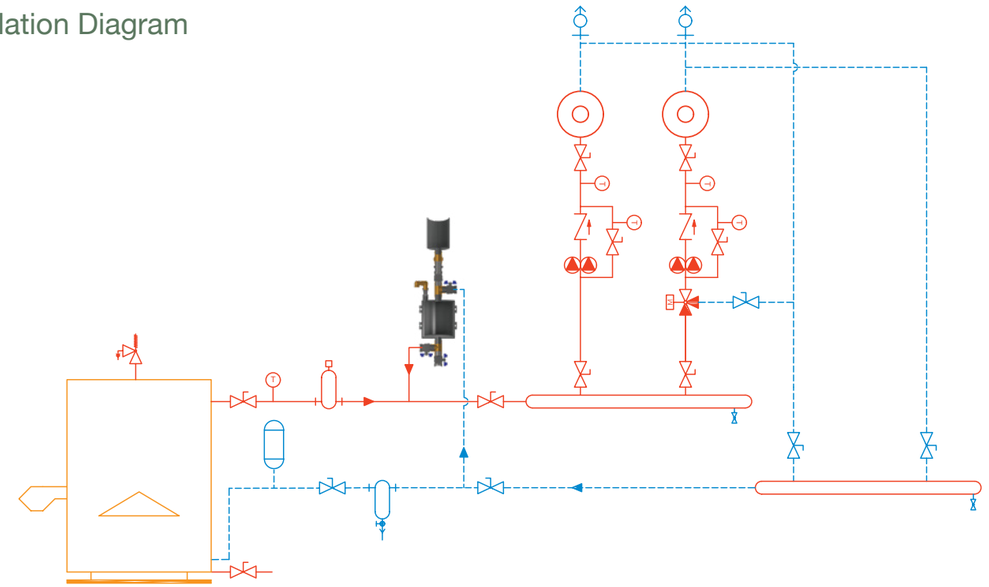
To prevent scalding safe practice must be observed when venting or draining hot water at pressure.

**SPECIFICATIONS / USAGE AREAS**

- Dosing pots provide safe and controlled chemical introduction into sealed heating and cooling water systems.
- Dose chemicals without interrupting system operation.
- Supplied fully assembled for ease of installation and facilitate simple, regular on-going maintenance of your heating or chilled water system.




## Installation Diagram



Installation diagram given above is just a template. Installation must be done according to update standards and directives

| Product Code | Code | Unit | 131.21.03 | 131.21.06 | 131.21.11 | 131.21.15 | 131.21.20 | 131.21.25 |
|---|---|---|---|---|---|---|---|---|
| Capacity | V | lt | 3,5 | 6 | 11 | 15 | 20 | 25 |
| Vessel Diameter | $ØD_1$ | mm | 168,3 | 168,3 | 219,1 | 219,1 | 219,1 | 273 |
| Vessel Height | h1 | mm | 190 | 315 | 320 | 445 | 590 | 495 |
| Height Between Flow/Return Valves | h2 | mm | 295 | 420 | 425 | 550 | 695 | 600 |
| Height | H | mm | 755 | 880 | 885 | 1010 | 1155 | 1060 |
| Air Vent Valve Assebly Connections | N1 | inch | ½” | ½” | ½” | ½” | ½” | ½” |
| Filling Valve Connection | N2 | inch | 1” | 1” | 1” | 1” | 1” | 1” |
| Return Valve Connection | N3 | inch | 1” | 1” | 1” | 1” | 1” | 1” |
| Flow Valve Connection | N4 | inch | 1” | 1” | 1” | 1” | 1” | 1” |
| Drain Valve Connection | N5 | inch | 1” | 1” | 1” | 1” | 1” | 1” |
| Bracket Width Dimension | a | mm | 185 | 215 | 265 | 265 | 265 | 320 |
| Bracket Height Dimension | b | mm | 90 | 205 | 210 | 335 | 480 | 405 |
| Dry Weight | W | kg | 11,5 | 14 | 20 | 24 | 28 | 32 |

# R2319 MULTIFUNCTION MAGNETIC DIRT SEPARATOR FILTER


| | |
|---|---|
| Diverter Body | : Polyamid PA66+ %30 FV |
| Cartridge Body | : Polyamid PA66+ %30 FV |
| Locking Ring | : Polyamid PA66+ %30 FV |
| Filter Cap | : Polyamid PA66+ %30 FV |
| Filter Cartridge | : Stainless steel, AISI 304 |
| Hydraulic Seals | : EPDM PEROX |
| Magnet | : Neodymium REN35 B = 11000 Gauss |
| Connection Size | : G ¾”- G 1¼” |
| Threaded Connections | : FF UNI EN ISO 226 |

TECHNICAL CHARACTERISTICS

| | |
|---|---|
| Fluids | : Water<br>Water + Glycol |
| Maximum Operating Pressure | : 400 kPa (4 bar) |
| Temperature Range | : 0 °C ≤ T ≤90 °C |
| Noise Induced | : The noise induced by R2319 in the piping is 0 dB(A). As specified in EN 13443 regulation, R2319 belongs to the I group, as well as all other products having noise levels < 20 dB(A). |

| Product Code | Connection Size | Threaded Connections | Kv (m³/h) |
|---|---|---|---|
| R23190550 | ¾” | FF UNI-EN-ISO 228 with ball valves | 6,81 |
| R23190650 | 1” | FF UNI-EN-ISO 228 with ball valves | 7,51 |
| R23190750 | 1¼” | FF UNI-EN-ISO 228 with ball valves | 7,51 |

Multipurpose polymer magnetic dirt separator represents the best solution to solve plant problems due to particle presence, especially rust and sand that are formed due to corrosion and scale during the normal operation of a system.

Through its effective and constant action, the magnetic filter collects all the impurities present in the system, preventing them from circulating within it, thus avoiding wear and damage of the rest of the components making up the system, circulators and heat exchangers in particular.

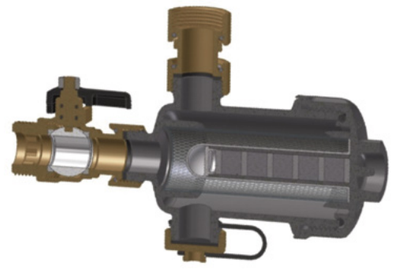
It performs as continuous protective action on the boiler.

It is advised to install multipurpose polymer magnetic dirt separator on the return circuit, at the inlet of the boiler, in order to protect it from any impurities in the system, especially during the start-up phase.

It is important to follow the direction indicated by the arrow on the body to ensure the maximum efficiency of the filtering action. The jointed part allows installation on vertical, horizontal and diagonal piping. Thanks to its jointed seal and to the presence of an opening cap, it is suitable to easily add chemicals for the treatment of the system.



# R3070 MAGNETIC SUPER COMPACT SYSTEM FILTER

| | |
|---|---|
| Cartridge Body | : Polyamid PA66+ %30 FV |
| Filter Cap | : Polyamid PA66+ %30 FV |
| Filter Cartridge | : Stainless Steel, AISI 304 |
| Hydraulic Seals | : EPDM PEROX |
| Magnet | : Neodymium REN35 B = 11000 Gauss |
| Ball Valve Body | : Brass |
| Swivel Fitting | : Brass |
| Connection Size | : G ¾” |
| Threaded Connections | : M UNI EN ISO 228 (Ball Valve Connection)<br>F UNI EN ISO 228 (Swivel Connection) |

TECHNICAL CHARACTERISTICS

| | |
|---|---|
| Fluids | : Water<br>Water + Glycol 30% |
| Maximum Operating Pressure | : 300 kPa (3 bar) |
| Temperature Range | : 0 °C ≤ T ≤90 °C |
| Degree of Filtration | : 800 µm |
| Noise Induced | : The noise induced by R3070 in the piping is 0 dB(A). As specified in EN 13443 regulation, R3070 belongs to the I group, as well as all other products having noise levels < 20 dB(A). |

| Product Code | Connection Size | Threaded Connections | Kv (m³/h) |
|---|---|---|---|
| R30700500 | ¾” | M UNI EN ISO 228 (Ball Valve Connection)<br>F UNI EN ISO 228 (Swivel Connection) | 5,49 (Angle Connection)<br>5,37 (Straight Connection) |

DESCRIPTION

R3070 represents the best solution to solve plant problems due to particle pollution, especially sand and rust that are formed due to corrosion and scale during the normal operation of a system.

OPERATING PRINCIPLE

Through its effective and constant action, the magnetic filter collects all the impurities present in the system, preventing them from circulating within it, thus avoiding wear and damage of the rest of the components making up the system, circulators and heat exchangers in particular. R3070 performs as continuous protective action on the water heater.

USE

It is advised to install R3070 on the return circuit, at the inlet of the boiler, in order to protect it from any impurities in the system, especially during the start-up phase. Thanks to its compact dimensions, it can be installed under the boiler, in systems for domestic use, where installation spaces are very limited and there is no room for a traditional dirt separator.

# 131.23 **KVF-M** MANUALLY CONTROLLED BERNOULLI FILTER

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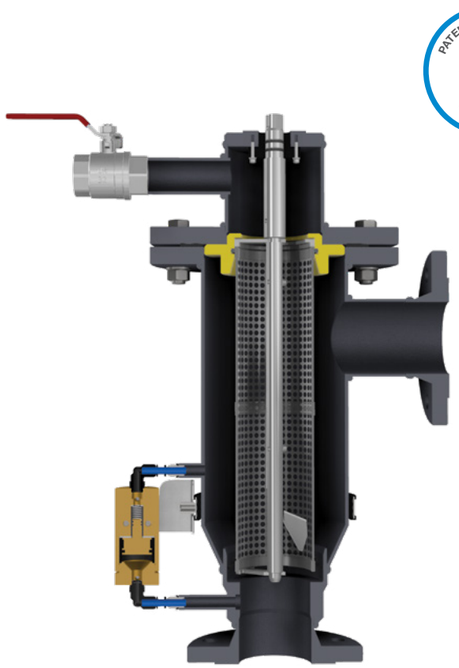
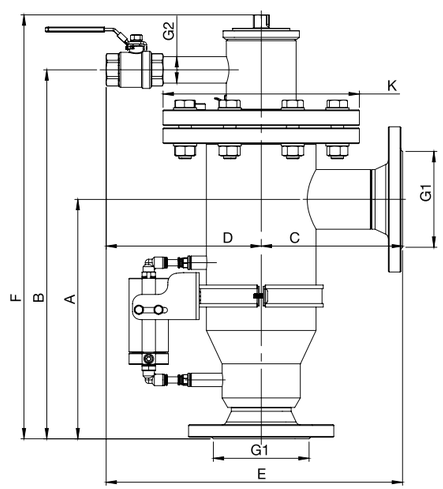
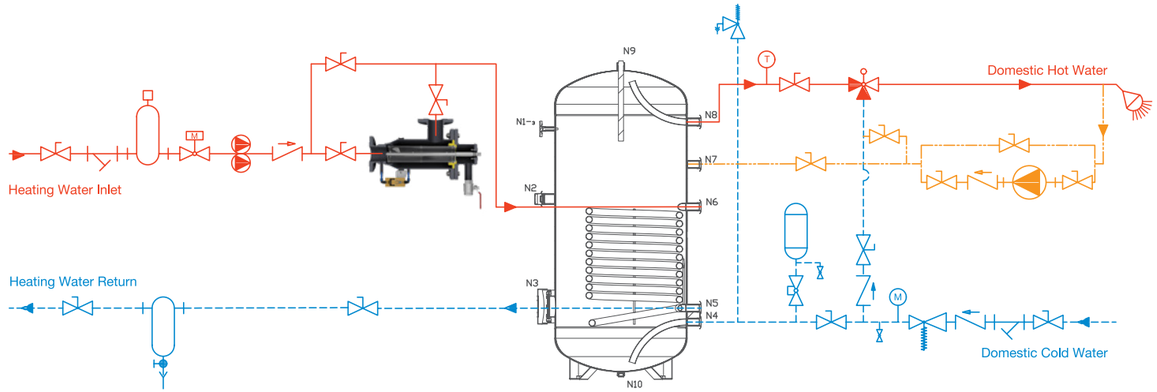


PATENTED PRODUCT

| | | |
|---|---|---|
| Temperature Range | : | 4 °C ≤ T ≤90 °C |
| Minimum Filter Upstream Pressure | : | 100 kPa (1 bar, 10 mSS) |
| Pressure Loss | : | 0,1 - 0,2 bar |
| Maximum Allowed Pressure Differences between Inlet and Outlet | : | 1 bar |
| Connection Sizes/ Pressure Classes | | |
| Flanged Connection | : | DN50-DN200 / PN10-PN16 |
| Threaded Connection | : | DN25-DN50 / PN10-PN16 (Please contact for products between DN250- DN400) |
| Filter Material | : | Perforated Turbulator |
| Degree of Filtration | : | >200 µm |
| Outer Surface Protection Paint | : | Electrostatic Powder Paint |
| Supply Voltage | : | 220 V AC |




## Installation Diagram




Installation diagram given above is just a template. Installation must be done according to update standards and directives

### 131.23 FLANGED MANUALLY CONTROLLED BERNOULLI FILTER

| TYPE | G1 | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G2 (inch) | K (mm) | Kv ($m^3/h$) | Flow Rate ($m^3/h$) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 131.23.16.1 | DN50 | 300 | 455 | 160 | 155 | 335 | 510 | ¾” | 220 | 64 | 16-32 |
| 131.23.17.1 | DN65 | 305 | 470 | 180 | 200 | 380 | 540 | 1” | 250 | 110 | 30-55 |
| 131.23.18.1 | DN80 | 370 | 555 | 200 | 230 | 430 | 625 | 1¼” | 285 | 160 | 40-80 |
| 131.23.19.1 | DN100 | 380 | 610 | 230 | 265 | 495 | 685 | 1½” | 340 | 270 | 65-135 |
| 131.23.20.1 | DN150 | 550 | 845 | 270 | 405 | 675 | 930 | 2” | 395 | 560 | 135-280 |
| 131.23.21.1 | DN200 | 710 | 1070 | 300 | 420 | 720 | 1175 | 3” | 445 | 1020 | 255-510 |

Kv = Q / √ΔP
Q = Water flow rate ($m^3$ / h)  ΔP = Pressure loss on the product (bar)
*: Connection C has special design with Ø50 whitworth thread.

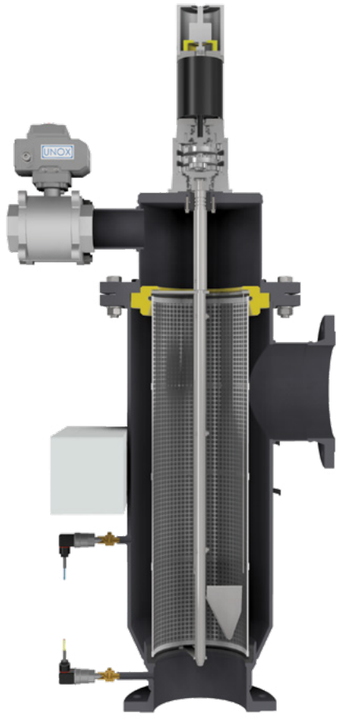
### 131.23 THREADED MANUALLY CONTROLLED BERNOULLI FILTER

| TYPE | G1 | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G2 (inch) | K (mm) | Kv ($m^3/h$) | Flow Rate ($m^3/h$) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 131.23.14.2 | DN25 | 175 | 290 | 110 | 145 | 255 | 340 | ½” | 185 | 16 | 3-8 |
| 131.23.15.2 | DN40 | 235 | 385 | 110 | 165 | 275 | 425 | ¾” | 200 | 39 | 8-20 |
| 131.23.16.2 | DN50 | 275 | 425 | 130 | 185 | 315 | 485 | ¾” | 220 | 64 | 16-32 |

Kv = Q / √ΔP
Q = Water flow rate ($m^3$ / h)  ΔP = Pressure loss on the product (bar)
*: Connection C has special design with Ø50 whitworth thread.

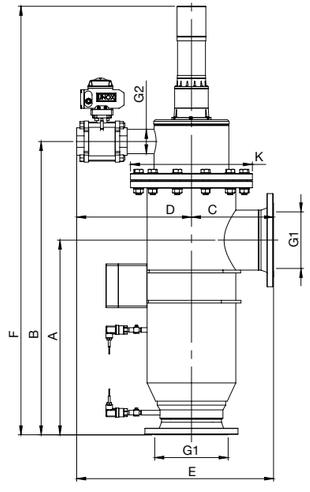
# 131.23 **KVF-A** AUTOMATICALLY CONTROLLED BERNOULLI FILTER

KODSAN

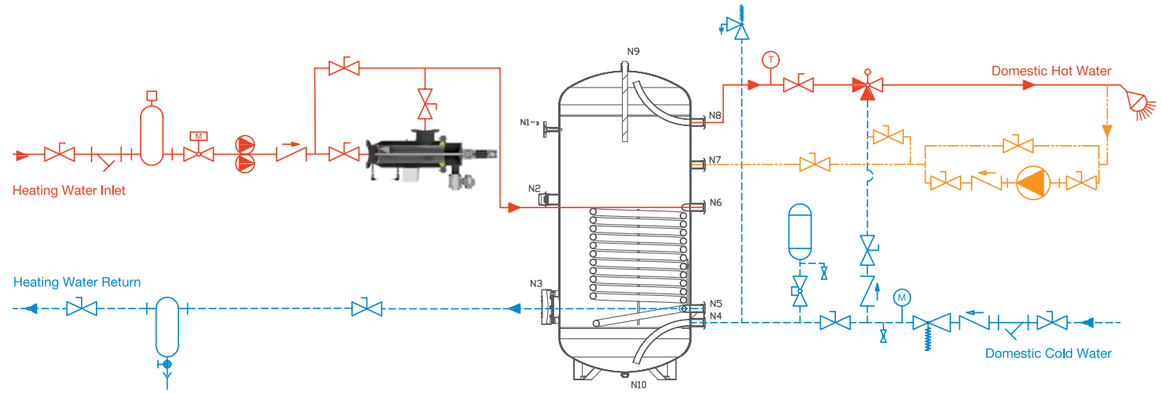


PATENTED PRODUCT

| | | |
|---|---|---|
| Temperature Range | : | 4 °C ≤ T ≤90 °C |
| Minimum Filter Upstream Pressure | : | 100 kPa (1 bar, 10 mSS) |
| Pressure Loss | : | 0,1 - 0,2 bar |
| Maximum Allowed Pressure Differences between Inlet and Outlet | : | 1 bar |
| Connection Sizes/ Pressure Classes | | |
| Flanged Connection | : | DN50-DN200 / PN10-PN16 (Please contact for products between DN250- DN400) |
| Filter Material | : | Perforated Turbulator |
| Degree of Filtration | : | >200 µm |
| Outer Surface Protection Paint | : | Electrostatic Powder Paint |
| Supply Voltage | : | 220 V AC |




## Installation Diagram




Installation diagram given above is just a template. Installation must be done according to update standards and directives

## 131.23 FLANGED AUTOMATICLY CONTROLLED BERNOULLI FILTER

| TYPE | G1 | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G2 (inch) | K (mm) | Kv ($m^3$/h) | Flow Rate ($m^3$/h) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 131.23.16.0 | DN50 | 300 | 455 | 160 | 175 | 335 | 770 | ¾” | 220 | 64 | 16-32 |
| 131.23.17.0 | DN65 | 305 | 470 | 180 | 210 | 390 | 825 | 1” | 250 | 110 | 30-55 |
| 131.23.18.0 | DN80 | 370 | 555 | 200 | 230 | 430 | 910 | 1¼” | 285 | 160 | 40-80 |
| 131.23.19.0 | DN100 | 380 | 610 | 230 | 280 | 510 | 670 | 1½” | 340 | 270 | 65-135 |
| 131.23.20.0 | DN150 | 550 | 845 | 270 | 295 | 565 | 1320 | 2” | 395 | 560 | 135-280 |
| 131.23.21.0 | DN200 | 710 | 1070 | 300 | 420 | 720 | 1565 | 3” | 445 | 1020 | 255-510 |

Kv = Q / √ΔP
Q = Water flow rate ($m^3$ / h)  ΔP = Pressure loss on the product (bar)
*: Connection C has special design with Ø50 whitworth thread.

# R3286 NT1 ACID CONDENSATION NEUTRALISING FILTER


| | |
|---|---|
| **Body** | : Transparent PA Polyamide cartridge |
| **Caps and Hose** | : PA Polyamide |
| **Fastening Collar** | : Polymer |
| **Neutralising Mesh Door** | : Stainless steel, AISI 304 |
| **Neutralising Load** | : $CaCO^3$ (calcium carbonate) |
| **Hydraulic Seals** | : EPDM PEROX |
| **Connection Size** | : G ¾" x DN 20 |

NT1 Acid Condensation Neutralising Filter Kit inclusive of;
Acid condensation neutralising filter
Fastening collar
Pair of DN20 elbow hose connection fittings
2 neutralising loads of calcium carbonate ($CaCO^3$)

**WARNING**
It is recommended replacing the residual load annually, at the end or beginning of the season, after the filter has been cleaned.
Use original parts exclusively . (Product Code: R32900000)

# R3287-3288 PAIR OF HOSE CONNECTION FITTINGS

| | |
|---|---|
| **Fittings** | : PA Poliamid |
| **Connection Size** | : G ¾" x DN 16<br>G ¾" x DN 20 |

| Product Code | Connection Size (A) | Connection Size (B) |
|---|---|---|
| R32870516 | ¾" | DN16 |
| R32870520 | ¾" | DN20 |
| R32880516 | ¾" | DN16 |
| R32880520 | ¾" | DN20 |



# R126 SELF-CLEANING WATER FILTER


| | |
|---|---|
| **Body** | : Nickel plated brass CW 617N UNI EN 12165 |
| **Nut** | : Nickel plated brass CW 617N UNI EN 12165 |
| **Filter** | : Stainless steel, AISI 304 |
| **Seals (Elostomers)** | : Nitrile |
| **Connection Size** | : G ½"- G 4" |
| **Threaded Connections** | : FF UNI EN ISO 228 |

**TECHNICAL CHARACTERISTICS**

| | |
|---|---|
| **Fluids** | : Water |
| **Maximum Operating Temperature** | : 100 °C |
| **Maximum Operating Pressure** | : 1600 kPa (16 bar) |
| **Standard Degree of Filtration** | : 100µm |
| **Optional Filtration** | : 100µm, 300µm, 800µm |
| **Pressure Gauge Scale** | : 0-16 bar |

| Product Code | Connection Size | Threaded Connections | Kv [$m^3/h$] |
|---|---|---|---|
| R1260410 | ½" | FF UNI EN ISO 228 | 3,10 |
| R1260510 | ¾" | FF UNI EN ISO 228 | 5,80 |
| R1260610 | 1" | FF UNI EN ISO 228 | 8,55 |
| R1260710 | 1¼" | FF UNI EN ISO 228 | 14,85 |
| R1260810 | 1½" | FF UNI EN ISO 228 | 24,40 |
| R1260910 | 2" | FF UNI EN ISO 228 | 26,10 |
| R1261010 | 2½" | FF UNI EN ISO 228 | 107,80 |
| R1261110 | 3" | FF UNI EN ISO 228 | 120,20 |
| R1261310 | 4" | FF UNI EN ISO 228 | 129,00 |

# R304 MAGNETIC ANTI-SCALE DEVICE

| | |
|---|---|
| **Body** | : Nickel plated brass CW 617N UNI EN 12165 |
| **Magnet Container** | : Food-grade plastic polymer |
| **Magnet** | : Sintered Rings, Ferrite-Strontium mix |
| **Seals** | : NBR |
| **Connection Size** | : G ½”- G 4” |
| **Threaded Connections** | : MM UNI EN ISO 228 for ½”-2”<br>FF UNI EN ISO 228 for 2½”-4” |

**TECHNICAL CHARACTERISTICS**

| | |
|---|---|
| **Fluids** | : Water |
| **Maximum Operating Temperature** | : 80 °C |
| **Maximum Operating Pressure** | : 1600 kPa (16 bar) |
| **Magnetic Field** | : 700 Gauss (average weighted value) |
| **Coercive Field** | : 2800-3200 Oersted |
| **Energy Product** | : 2,4- 3,0 M Gauss-Oersted |
| **Residual Induction** | : 2300-3700 Gauss |
| **Equivalent treatment Capacity** | : 30°F every 0,10 sec. of performance in the magnetic field |
| **Maximum Reference Speed of the Fluid** | : 2,0 m/sec |

| Product Code | Connection Size | Threaded Connections | Kv [m³/h] |
|---|---|---|---|
| R3040400 | ½” | MM UNI EN ISO 228 | 10,20 |
| R3040500 | ¾” | MM UNI EN ISO 228 | 14,80 |
| R3040600 | 1” | MM UNI EN ISO 228 | 26,00 |
| R3040700 | 1¼” | MM UNI EN ISO 228 | 30,40 |
| R3040800 | 1½” | MM UNI EN ISO 228 | 63,00 |
| R3040900 | 2” | MM UNI EN ISO 228 | 74,00 |
| R3041000 | 2½” | FF UNI EN ISO 228 | 125,00 |
| R3041100 | 3” | FF UNI EN ISO 228 | 160,00 |
| R3041300 | 4” | FF UNI EN ISO 228 | 252,00 |



KODSAN

# B651 PUMP KIT

Preassembled pump group for direct distribution or circulation. Allows the circulation of the thermal fluid, coming from the primary circuit, without performing any thermal regulation. It is used when the same flow temperature of the primary circuit is requested by the user in heating and air-conditioning systems. The group is composed of a pump, flow/return shut-off valves, shut-off valve at the pump inlet, flow/return temperature gauges, anti-thermosiphon check valve, thermal insulation. In this group, the differential by-pass can be installed only externally. The group is reversible (flow line can be exchanged with the return line).

**TECHNICAL CHARACTERISTICS**

| | |
|---|---|
| **Fluids** | : Water,<br>Water + Glycol Solutions 30% |
| **Maximum Operating Temperature** | : 90 °C |
| **Maximum Operating Pressure** | : 10 bar |
| **Temperature Gauge** | : 0-120 °C |
| **Pump** | : Grundfos UPM3 AUTO L 15-70<br>Grundfos UPM3 AUTO L 25-70<br>Grundfos UPM3 AUTO L 32-70 |

| | |
|---|---|
| **Body** | : Brass CW 617N UNI EN 12165 |
| **Seals** | : PTFE, EPDM, Viton |
| **Insulation** | : EPP |
| **Connection Size** | : See table below. |
| **Threaded Connections** | : M ISO 228-1<br>F EN 10226-1 |

| Product Code | Pump Connection | Connection Size | Threaded Connections | Pump |
|---|---|---|---|---|
| 651.12 | DN20 | 1”M - (1”M+¾”F) | M ISO 228-1<br>F EN 10226-1 | Grundfos UPM3 AUTO L 15-70 (DN20) |
| 651.13 | DN25 | 1½”M- 1”F | M ISO 228-1<br>F EN 10226-1 | Grundfos UPM3 AUTO L 25-70 (DN25) |
| 651.14 | DN32 | 2”M- 1¼”F | M ISO 228-1<br>F EN 10226-1 | Grundfos UPM3 AUTO L 32-70 (DN32) |

# R51 “RINOX” COMPANSATED DIAPHRAGM PRESSURE REDUCING VALVE

| | |
|---|---|
| Body | : Nickel plated brass CW 617N UNI EN 12165 |
| Sealing Seat | : Stainless steel, AISI 303 |
| Metal Internal Components | : Brass CW 614N UNI EN 12164 |
| Rod | : Brass CW 614N UNI EN 12164 |
| Diaphragm | : NBR Nitril Elastomer |
| Seals | : NBR Nitril Elastomer |
| Plastic Components | : Nylon 6 with 30% fibreglass |
| Pressure Gauge Connection | : G ¼” F |
| Connection Size | : G ½” -G 4” |
| Threaded Connections | : FF UNI EN ISO 228 |

TECHNICAL CHARACTERISTICS

| | |
|---|---|
| Fluids | : Water |
| Maximum Operating Temperature | : 80 °C |
| Nominal Pressure | : PN 40 |
| Maximum Upstream Pressure | : 2500 kPa (25 bar)<br>1600 kPa (16 bar) (in accordance with NF) |
| Adjustable Downstream Pressure | : See table below. |
| Factory Presetting | : 300 kPa (3 bar) (Only models with *) |

| Product Code | Connection Size | Threaded Connections | $P_{max}$ Upstream (bar) | $P_{adj}$ Downstream (bar) | $P_{presetting}$ (bar) |
|---|---|---|---|---|---|
| R510495 | ½” | FF UNI EN ISO 228 | 25 [16 bar (in accordance with standard NF)] | 6 - 10 | - |
| R510595 | ¾” | FF UNI EN ISO 228 | | | |
| R510695 | 1” | FF UNI EN ISO 228 | | | |
| R510795 | 1¼” | FF UNI EN ISO 228 | | | |
| R510895 | 1½” | FF UNI EN ISO 228 | | | |
| R510995 | 2” | FF UNI EN ISO 228 | | | |
| R510470* | ½” | FF UNI EN ISO 228 | | 0,8 - 5,5 | 3 |
| R510570* | ¾” | FF UNI EN ISO 228 | | | |
| R510670* | 1” | FF UNI EN ISO 228 | | | |
| R510770 | 1¼” | FF UNI EN ISO 228 | | 0,8 - 7 | - |
| R510870 | 1½” | FF UNI EN ISO 228 | | | |
| R510970 | 2” | FF UNI EN ISO 228 | | | |
| R511070 | 2½” | FF UNI EN ISO 228 | | | |
| R511170 | 3” | FF UNI EN ISO 228 | | | |
| R511370 | 4” | FF UNI EN ISO 228 | | | |

Models with *, default presetting pressure is 3 bar.
Models with *, adjustable downstream pressure might be set 0,8-7 bar on request.



# R2848 “RINOXPLUS M” DIAPHRAGM OPERATED PRESSURE REDUCING VALVE


| | |
|---|---|
| Body | : DZR Brass (CR) CW602N |
| Metal Internal Components | : DZR Brass (CR) CW602N |
| Internal Cartridge | : POM |
| Filter | : Stainless steel, AISI 302 |
| Rod | : DZR Brass (CR) CW602N |
| Seals | : Elastomer |
| External Plastic Components | : Nylon 6 with 30% fibreglass |
| Pressure Gauge Connection | : G ¼” F |
| Connection Size | : G ½” -G 2” |
| Threaded Connections | : FF UNI EN ISO 228 |

TECHNICAL CHARACTERISTICS

| | |
|---|---|
| Fluids | : Water |
| Maximum Operating Temperature | : 80 °C |
| Nominal Pressure | : PN 25 (cold water 40°C) / PN 16 (hot water 80°C) |
| Maximum Upstream Pressure | : 2500 kPa (25 bar) (cold water 40°C)<br>1600 kPa (16 bar) (hot water 80°C) |
| Adjustable Downstream Pressure | : 80-700 kPa (0,8- 7 bar) |
| Factory Presetting | : 300 kPa (3 bar) |

| Product Code | Connection Size | Threaded Connections | $P_{max}$ Upstream (bar) | $P_{adj}$ Downstream (bar) | $P_{presetting}$ (bar) |
|---|---|---|---|---|---|
| R28480400 | ½” | FF UNI EN ISO 228 | 25 (cold water40°C) / 16 (hot water 80°C) | 0,8 - 7 | 3 |
| R28480500 | ¾” | FF UNI EN ISO 228 | | | |
| R28480600 | 1” | FF UNI EN ISO 228 | | | |
| R28480700 | 1¼” | FF UNI EN ISO 228 | | | |
| R28480800 | 1½” | FF UNI EN ISO 228 | | | |
| R28480900 | 2” | FF UNI EN ISO 228 | | | |

# R87 “RINOX” COMPANSATED PISTON PRESSURE REDUCING VALVE

| | |
|---|---|
| Body | : Nickel plated brass CW 617N UNI EN 12165 |
| Sealing Seat | : Stainless steel, AISI 303 |
| Metal Internal Components | : Brass CW 614N UNI EN 12164 |
| Rod | : Brass CW 614N UNI EN 12164 |
| Seals | : NBR Nitril Elastomer |
| Plastic Components | : Nylon 6 with 30% fibreglass |
| Pressure Gauge Connection | : G ¼” F |
| Connection Size | : G ½” -G 2” |
| Threaded Connections | : FF UNI EN ISO 228 |

TECHNICAL CHARACTERISTICS

| | |
|---|---|
| Fluids | : Water |
| Maximum Operating Temperature | : 80 °C |
| Nominal Pressure | : PN 25 |
| Maximum Upstream Pressure | : 2500 kPa (25 bar) |
| Adjustable Downstream Pressure | : 50-700 kPa (0,5-7 bar) |

| Product Code | Connection Size | Threaded Connections | $P_{max}$ Upstream (bar) | $P_{adj}$ Downstream (bar) | $P_{presetting}$ (bar) |
|---|---|---|---|---|---|
| R870470 | ½” | FF UNI EN ISO 228 | 25 | 0,5 - 7 | - |
| R870570 | ¾” | FF UNI EN ISO 228 | | | |
| R870670 | 1” | FF UNI EN ISO 228 | | | |
| R870770 | 1¼” | FF UNI EN ISO 228 | | | |
| R870870 | 1½” | FF UNI EN ISO 228 | | | |
| R870970 | 2” | FF UNI EN ISO 228 | | | |



# R1139 “RIS” COMPANSATED PISTON PRESSURE REDUSING VALVE

| | |
|---|---|
| Body | : Nickel plated brass CW 617N UNI EN 12165<br>Brass CW 617N UNI EN 12165 |
| Metal Internal Components | : Brass CW 614N UNI EN 12164 |
| Rod | : Brass CW 614N UNI EN 12164 |
| Seals | : EPDM PEROX / NBR Nitril Elastomer |
| Plastic Components | : Nylon 6 with 30% fibreglass<br>PA66 with 30% fibreglass |
| Pressure Gauge Connection | : G ¼” F (for only R11390X00 code version) |
| Connection Size | : G ½” -G ¾” |
| Threaded Connections | : FF UNI EN ISO 228 |

TECHNICAL CHARACTERISTICS

| | |
|---|---|
| Fluids | : Water |
| Maximum Operating Temperature | : 80 °C |
| Nominal Pressure | : PN 16 |
| Maximum Upstream Pressure | : 16 bar |
| Adjustable/ Fixed Downstream Pressure | : See table below. |
| Factory Presetting | : 300 kPa (3 bar) (Only models with *) |

| Product Code | Connection Size | Threaded Connections | $P_{max}$ Upstream (bar) | $P_{adj}$ Downstream (bar) | $P_{presetting}$ (bar) |
|---|---|---|---|---|---|
| R11390400* | ½” | FF UNI EN ISO 228 | 16 | 0,5 - 4 (with inlet pressure of 8 bar) | 3 |
| R11390500* | ¾” | FF UNI EN ISO 228 | | | |
| R11390440 | ½” | FF UNI EN ISO 228 | | | |
| R11390540 | ¾” | FF UNI EN ISO 228 | | | |
| R11390490 | ½” | FF UNI EN ISO 228 | | 3 (fixed calibration) | |
| R11390590 | ¾” | FF UNI EN ISO 228 | | | |

Models only with * have pressure gauge connection.

# R37 DEGASSER - VASA

| | |
|---|---|
| Body | : Nickel-plated brass CW 617N UNI EN 12165 |
| Float | : Lever type made of polypropylene resin |
| Spring | : Stainless steel, AISI 302 |
| Seals (Elastomers) | : EPDM PEROX and NBR |
| Surface Finish | : Nikel-plated satin finish |
| Connection Size | : G ½”- G 1” |
| Threaded Connection | : M UNI EN ISO 228 |

TECHNICAL CHARACTERISTICS

| | |
|---|---|
| Fluids | : Water<br>Water + Glycol 30% |
| Maximum Operating Temperature | : 100 °C |
| Maximum Operating Pressure | : 600 kPa (6 bar) |
| Maximum Discharge Pressure | : 250 kPa (2,5 bar) |

| Product Code | Connection Size | Threaded Connection | Discharge Pressure |
|---|---|---|---|
| R370460 | ½” | E UNI EN ISO 228 | 2,5 bar |
| R370560 | ¾” | E UNI EN ISO 228 | 2,5 bar |
| R370660 | 1” | E UNI EN ISO 228 | 2,5 bar |

# R37 DEGASSER - VASASETTE

| | |
|---|---|
| Cover | : Nickel-plated brass CW 617N UNI EN 12165 |
| Float | : Lever type made of polypropylene resin |
| Spring | : Stainless steel, AISI 302 |
| Seals (Elastomers) | : EPDM PEROX and NBR |
| Surface Finish | : Nikel-plated satin finish |
| Connection Size | : G ¾” x G ½” |
| Threaded Connection | : FF UNI EN ISO 228 |

TECHNICAL CHARACTERISTICS

| | |
|---|---|
| Fluids | : Water<br>Water + Glycol 30% |
| Maximum Operating Temperature | : 100 °C |
| Maximum Operating Pressure | : 600 kPa (6 bar) |
| Maximum Discharge Pressure | : 300 kPa (3 bar) |
| Maximum Pressure Withstood | : 1000 kPa (10 bar) |

| Product Code | Connection Size | Threaded Connection | Discharge Pressure |
|---|---|---|---|
| R370570 | ¾” x ½” | FF UNI EN ISO 228 | 3 bar |



# R2828 MINILUFT AIR VENT

| | |
|---|---|
| Body/ Cap | : Brass CW 617N UNI EN 12165 |
| Float | : Float and lever in polypropylene |
| Spring | : Stainless steel, AISI 302 |
| Seals (Elostomers) | : EPDM PEROX and NBR |
| Connection Size | : G ½” |
| Threaded Connection | : M UNI EN ISO 228 |

TECHNICAL CHARACTERISTICS

| | |
|---|---|
| Fluids | : Water<br>Water + Glycol 30% |
| Maximum Operating Temperature | : 115 °C |
| Maximum Operating Pressure | : 1000 kPa (10 bar) |
| Maximum Discharge Pressure | : 600 kPa (6 bar) |

| Product Code | Connection Size | Threaded Connection | Discharge Pressure |
|---|---|---|---|
| R28280400 | ½” | M UNI EN ISO 228 | 6 bar |

# R2836 MEGALUFT HP AIR VENT

| | |
|---|---|
| Body/ Cap | : Brass CW 617N UNI EN 12165 |
| Float | : Float and lever in polypropylene |
| Spring | : Stainless steel, AISI 302 |
| Seals (Elostomers) | : EPDM PEROX and NBR |
| Connection Size | : G ½” |
| Threaded Connection | : M UNI EN ISO 228 |

TECHNICAL CHARACTERISTICS

| | |
|---|---|
| Fluids | : Water<br>Water + Glycol 30% |
| Maximum Operating Temperature | : 115 °C |
| Maximum Operating Pressure | : 1000 kPa (10 bar) |
| Maximum Discharge Pressure | : 1000 kPa (10 bar) |

| Product Code | Connection Size | Threaded Connection | Discharge Pressure |
|---|---|---|---|
| R28360400 | ½” | M UNI EN ISO 228 | 10 bar |

# R3153 AUTOMATIC ADJUSTABLE FILLING UNIT

| | |
|---|---|
| **Body** | : Nickel plated brass CW 617N UNI EN 12165 |
| **Metal Internal Components** | : Brass CW 614N UNI EN 12164 |
| **Plastic External Components** | : Nylon 6 with 30% fibreglass |
| **Seals** | : NBR |
| **Sealing Seat** | : Stainless steel |
| **Pressure Gauge Connection** | : G ¼" F |
| **Connection Size** | : G ½" |
| **Threaded Connections** | Input : M UNI EN ISO 228<br>Output : F UNI EN ISO 228 |

| TECHNICAL CHARACTERISTICS | |
|---|---|
| **Fluids** | : Water |
| **Maximum Operating Temperature** | : 80 °C |
| **Nominal Pressure** | : PN 16 |
| **Maximum Upstream Pressure** | : 1600 kPa (16 bar) |
| **Adjustable Downstream Pressure** | : 50-400 kPa (0,5-4 bar) |
| **Pressure Gauge** | : 0-4 bar |
| **Degree of Filtration** | : 500 µm |

| Product Code | Connection Size | Threaded Connections | $P_{max}$ Upstream (bar) | $P_{adj}$ Downstream (bar) | $P_{Pre\text{-}calibration}$ (bar) |
|---|---|---|---|---|---|
| R31530400 | ½" | Input: M UNI EN ISO 228<br>Output: F UNI EN ISO 228 | 16 | 0,5 - 4 | - |



# R39 AUTOMATIC ADJUSTABLE FILLING UNIT

| | |
|---|---|
| **Body** | : Nickel plated brass CW 617N UNI EN 12165 |
| **Metal Internal Components** | : Brass CW 614N UNI EN 12164 |
| **Plastic External Components** | : Nylon 6 with 30% fibreglass |
| **Seals** | : NBR |
| **Sealing Seat** | : Stainless steel |
| **Pressure Gauge Connection** | : G ¼" F |
| **Connection Size** | : G ½", G ¾" |
| **Threaded Connections** | Input : M UNI EN ISO 228<br>Output : F UNI EN ISO 228 |

| TECHNICAL CHARACTERISTICS | |
|---|---|
| **Fluids** | : Water |
| **Maximum Operating Temperature** | : 80 °C |
| **Nominal Pressure** | : PN 16 |
| **Maximum Upstream Pressure** | : 1600 kPa (16 bar) |
| **Adjustable Downstream Pressure** | : 50-400 kPa (0,5-4 bar) |
| **Pressure Gauge** | : 0-4 bar |
| **Degree of Filtration** | : 500 µm |

| Product Code | Connection Size | Threaded Connections | $P_{max}$ Upstream (bar) | $P_{adj}$ Downstream (bar) | $P_{Pre\text{-}calibration}$ (bar) |
|---|---|---|---|---|---|
| R390400 | ½" | Input: M UNI EN ISO 228<br>Output: F UNI EN ISO 228 | 16 | 0,5 - 4 | - |
| R390500 | ¾" | Input: M UNI EN ISO 228<br>Output: F UNI EN ISO 228 | 16 | 0,5 - 4 | - |

# R46 AUTOMATIC ADJUSTABLE FILLING UNIT

| | | | |
|---|---|---|---|
| Body | : Nickel plated brass CW 617N UNI EN 12165 | TECHNICAL CHARACTERISTICS | |
| Metal Internal Components | : Brass CW 614N UNI EN 12164 | Fluids | : Water |
| Plastic External Components | : Nylon 6 with 30% fibreglass | Maximum Operating Temperature | : 80 °C |
| Seals | : NBR | Nominal Pressure | : PN 25 |
| Sealing Seat | : Stainless steel | Maximum Upstream Pressure | : 2500 kPa (25 bar) |
| Pressure Gauge Connection | : G ¼" F | Adjustable Downstream Pressure | : 80-550 kPa (0,8-5,5 bar) |
| Connection Size | : G ½" | Pressure Gauge | : 0-10 bar |
| Threaded Connections | : FF UNI EN ISO 228 | Degree of Filtration | : 800 µm |

| Product Code | Connection Size | Threaded Connections | $P_{max}$ Upstream (bar) | $P_{adj}$ Downstream (bar) | $P_{Pre\text{-}calibration}$ (bar) |
|---|---|---|---|---|---|
| R460400 | ½" | FF UNI EN ISO 228 | 25 | 0,8 - 5,5 | - |



# R811 SAFETY RELIEF VALVE

| | |
|---|---|
| Body | :Brass CW 614N UNI EN 12164 |
| Spring | :Stainless steel, AISI 302 |
| Diaphragm | :Elastomer |
| Obturator Seals | :Elastomer |
| Connection Size | :G ½"x G ¾"- G 1¼"x G 1½" |
| Threaded Connections | :FF UNI EN ISO 228 |

| TECHNICAL CHARACTERISTICS | |
|---|---|
| Fluids | :Water, air |
| Maximum Operating Temperature | :120 °C |
| Maximum Allowable Pressure | :PS 12 |
| Calibration Pressure | :250 kPa (2,5 bar) ≤ Pset ≤330 kPa (3,30 bar) |
| Discharge Overpressure | :+ %10 |
| Closing Differential | : - %20 |

| Product Code | Connection Size | Threaded Connections | Calibration, $P_{set}$ (bar) | Max. Power (kW) |
|---|---|---|---|---|
| R8111430 | ½" x ¾" | FF UNI EN ISO 228 | 2,50 | 50 |
| R8111440 | ½" x ¾" | FF UNI EN ISO 228 | 3,00 | |
| R8111530 | ¾" x 1" | FF UNI EN ISO 228 | 2,50 | 100 |
| R8111540 | ¾" x 1" | FF UNI EN ISO 228 | 3,00 | |
| R8111630 | 1" x 1¼" | FF UNI EN ISO 228 | 3,00 | 200 |
| R8111640 | 1" x 1¼" | FF UNI EN ISO 228 | 3,10 | |
| R8111730 | 1¼" x 1½" | FF UNI EN ISO 228 | 3,20 | 350 |
| R8111740 | 1¼" x 1½" | FF UNI EN ISO 228 | 3,30 | |

# R2809 SAFETY RELIEF VALVE

| | |
|---|---|
| Body | : Brass CW 614N UNI EN 12164 |
| Spring | : Stainless steel, AISI 302 |
| Diaphragm | : Elastomer |
| Obturator Seals | : Elastomer |
| Connection Size | : G ½"x G ¾"- G 1¼"x G 1½" |
| Threaded Connections | : FF UNI EN ISO 228 |

TECHNICAL CHARACTERISTICS

| | |
|---|---|
| Fluids | : Water, air |
| Maximum Operating Temperature | : 100 °C |
| Maximum Allowable Pressure | : PS 12 |
| Calibration Pressure | : 400 kPa (4 bar) ≤ Pset ≤100 kPa (10 bar) |
| Discharge Overpressure | : + %10 |
| Closing Differential | : - %20 |

| Product Code | Connection Size | Threaded Connections | Calibration, $P_{set}$ (bar) | Max. Power (kW) |
|---|---|---|---|---|
| R28090460 | ½" x ¾" | FF UNI EN ISO 228 | 4,00 | 75 |
| R28090490 | ½" x ¾" | FF UNI EN ISO 228 | 6,00 | |
| R28090481 | ½" x ¾" | FF UNI EN ISO 228 | 8,00 | |
| R28090411 | ½" x ¾" | FF UNI EN ISO 228 | 10,00 | |
| R28090560 | ¾" x 1" | FF UNI EN ISO 228 | 4,00 | 150 |
| R28090590 | ¾" x 1" | FF UNI EN ISO 228 | 6,00 | |
| R28090581 | ¾" x 1" | FF UNI EN ISO 228 | 8,00 | |
| R28090511 | ¾" x 1" | FF UNI EN ISO 228 | 10,00 | |
| R28090660 | 1" x 1¼" | FF UNI EN ISO 228 | 4,00 | 250 |
| R28090690 | 1" x 1¼" | FF UNI EN ISO 228 | 6,00 | |
| R28090681 | 1" x 1¼" | FF UNI EN ISO 228 | 8,00 | |
| R28090611 | 1" x 1¼" | FF UNI EN ISO 228 | 10,00 | |
| R28090760 | 1¼" x 1½" | FF UNI EN ISO 228 | 4,00 | 350 |
| R28090790 | 1¼" x 1½" | FF UNI EN ISO 228 | 6,00 | |
| R28090781 | 1¼" x 1½" | FF UNI EN ISO 228 | 8,00 | |
| R28090711 | 1¼" x 1½" | FF UNI EN ISO 228 | 10,00 | |



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# R351 SAFETY RELIEF VALVE

| | |
|---|---|
| Body | : Brass CW 614N UNI EN 12164 |
| Spring | : Stainless steel, AISI 302 |
| Diaphragm | : Elastomer |
| Obturator Seals | : Elastomer |
| Connection Size | : G ½"x G ¾"- G 1¼"x G 1½" |
| Threaded Connections | : FF UNI EN ISO 228 |

TECHNICAL CHARACTERISTICS

| | |
|---|---|
| Fluids | : Water, air |
| Temperature Range | : +5 °C ≤ T ≤120 °C |
| Maximum Allowable Pressure | : PS 12 |
| Calibration Pressure | : 150 kPa (1,5 bar) ≤ Pset ≤1000 kPa (10 bar) |
| Backpressure | : Atmospheric |
| Discharge Overpressure | : + %10 |
| Closing Differential | : - %20 |
| Orifis Diameter | : DN=15 mm |
| Net Section | : A=1,76 cm² |
| Maximum Power | : 48 kW ≤ P ≤181 kW |

| Product Code | Connection Size | Product Code | Connection Size | Threaded Connections | Calibration, $P_{set}$ (bar) | Max. Power (kW) |
|---|---|---|---|---|---|---|
| R3510410 | ½" x ½" | R3510510 | ¾" x ¾" | FF UNI EN ISO 228 | 1,50 | 48 |
| R3510420 | | R3510520 | | FF UNI EN ISO 228 | 2,00 | 55 |
| R3510430 | | R3510530 | | FF UNI EN ISO 228 | 2,50 | 68 |
| R3510440 | | R3510540 | | FF UNI EN ISO 228 | 3,00 | 75 |
| R3510450 | | R3510550 | | FF UNI EN ISO 228 | 3,50 | 83 |
| R3510460 | | R3510560 | | FF UNI EN ISO 228 | 4,00 | 96 |
| R3510470 | | R3510570 | | FF UNI EN ISO 228 | 4,50 | 103 |
| R3510480 | | R3510580 | | FF UNI EN ISO 228 | 5,00 | 109 |
| R3510490 | | R3510590 | | FF UNI EN ISO 228 | 6,00 | 128 |
| R3510471 | | R3510571 | | FF UNI EN ISO 228 | 7,00 | 148 |
| R3510481 | | R3510581 | | FF UNI EN ISO 228 | 8,00 | 166 |
| R3510411 | | R3510511 | | FF UNI EN ISO 228 | 10,00 | 181 |

# R605 SAFETY RELIEF VALVE

Body : Brass CW 614N UNI EN 12164
Spring : Galvanized steel
Diaphragm : Elastomer
Obturator Seals : Elastomer
Connection Size : G ½"x G ¾"- G 1¼"x G 1½"
Threaded Connections : FF UNI EN ISO 228

TECHNICAL CHARACTERISTICS
Fluids : Water, air
Temperature Range : +5 °C ≤ T ≤110 °C
Maximum Allowable Pressure : PS 12
Calibration Pressure : 600 kPa (6 bar)
Backpressure : Atmospheric
Discharge Overpressure : + %10
Closing Differential : - %20

Orifis Diameter : 15 mm≤ DN ≤32 mm
Net Section : 1,76 cm² ≤ A ≤8,03 cm²
Discharge Coefficient : 0,50 ≤ K ≤0,75
Maximum Power : 217 kW ≤ P ≤824kW

| Product Code | Connection Size | Threaded Connections | Orifice Dia. [DN(mm)] | Net Section (cm²) | Discharge Coefficient | Flow Rate (kg/sa) | Calibration, $P_{set}$ (bar) | Max. Power (kW) |
|---|---|---|---|---|---|---|---|---|
| R6050490 | ½" x ¾" | FF UNI EN ISO 228 | 15 | 1,76 | 0,60 | 374 | 6,00 | 217 |
| R6050590 | ¾" x 1" | FF UNI EN ISO 228 | 20 | 3,14 | 0,65 | 720 | | 418 |
| R6050690 | 1" x 1¼" | FF UNI EN ISO 228 | 25 | 4,90 | 0,75 | 1298 | | 754 |
| R6050790 | 1¼" x 1½" | FF UNI EN ISO 228 | 32 | 8,03 | 0,50 | 1418 | | 824 |



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# R2201 T&P COMBINED SAFETY VALVE

Body : Brass CW 614N UNI EN 12164
Spring : Stainless steel, AISI 302
Diaphragm : Elastomer
Obturator Seals : Elastomer
Pipe End Connection : Copper
Connection Size : G ½"x Ø15
Threaded Connections : M UNI EN ISO 228

TECHNICAL CHARACTERISTICS
Fluids : Water
Calibration Temperature : 90+2 °C
Maximum Allowable Pressure : PS 12
Calibration Pressure : 1000 kPa (10 bar)

Orifis Diameter : DN=15 mm
Maximum Power : 10 kW

| Product Code | Connection Size | Threaded Connections | Orifice Diameter [DN(mm)] | Prob Length (inch) | Calibration, $P_{set}$ (bar) | Max. Power (kW) |
|---|---|---|---|---|---|---|
| R22010410 | ½" x Ø15 | M UNI EN ISO 228 | 15 | 4" | 10,00 | 10 |
| R22011410 | ½" x Ø15 | M UNI EN ISO 228 | | 8" | | |

# R47 SAFETY RELIEF VALVE

Body : Brass CW 614N UNI EN 12164
Float (Air Vent) : Float and lever in polypropylene
Spring (Air Vent) : Stainless steel, AISI 302
Diaphragm (Safety Valve) : Elastomer
Seals : Elastomer
Connection Size : G 1"
Threaded Connections : F UNI EN ISO 228

TECHNICAL CHARACTERISTICS
Fluids : Water
Water + Glycol 30%
Maximum Operating Temperature : 90 °C
Maximum Operating Pressure : 600 kPa (6 bar)
Maximum Withstand Pressure : 1000 kPa (10 bar)
Maximum Power : 76 kW
Pressure Gauge : 0-6 bar
Opening Overpressure : 300 kPa (3 bar)

| Product Code | Connection Size | Threaded Connections | Max. Power (kW) |
|---|---|---|---|
| R470610 | 1" | F UNI EN ISO 228 | 76 |

# R3072 WATER HAMMER ARRESTOR

Body : Brass CW 614N UNI EN 12164
Spring : Stainless steel
Piston : POM Polymer
Hydraulic Seals : EPDM PEROX
Connection Size : G ½”
Threaded Connection : M UNI EN ISO 228

TECHNICAL CHARACTERISTICS
Fluids : Water
Maximum Operating Temperature : 90 °C
Maximum Operating Pressure : 1000 kPa (10 bar)
Operating Start Pressure : 300 kPa (3 bar)

| Product Code | Connection Size | Threaded Connection | Operating Start Pressure |
|---|---|---|---|
| R30720400 | ½” | M UNI EN ISO 228 | 3 bar |

# R860 NON-RETURN VALVE

Body : Brass DIN 17660
Ring : Brass DIN 17660
Spring : Stainless steel, AISI 302
Seals : Elastomer
Connection Size : G ½” - G 2”
Treaded Connection : FF UNI EN ISO 228
TECHNICAL CHARACTERISTICS
Fluid : Water, air
Temperature Range : 0 °C ≤ Tmax ≤ 90 °C (Water)
-20 °C ≤ Tmax ≤ 110 °C (Air)
Maximum Operating Pressure : 25 bar /16 bar
Minimum Opening Pressure : 4 kPa (0,04 bar)

| Product Code | Connection Size | Threaded Connection | Pmax (bar) | Kv ($m^3/h$) |
|---|---|---|---|---|
| R8600402 | ½” | FF UNI EN ISO 228 | 25 | 3,11 |
| R8600502 | ¾” | FF UNI EN ISO 228 | 25 | 6,39 |
| R8600602 | 1” | FF UNI EN ISO 228 | 25 | 10,11 |
| R8600702 | 1¼” | FF UNI EN ISO 228 | 16 | 16,67 |
| R8600802 | 1½” | FF UNI EN ISO 228 | 16 | 24,62 |
| R8600902 | 2” | FF UNI EN ISO 228 | 16 | 38,84 |

# B671 REGULATING GROUP WITH THERMOSTATIC MIXING VALVE


Instrument Holder Fitting : Brass CW 617N EN 12165

Fittings for Secondary Manifold
Body : Brass CW 617N EN 12165
Seals : EPDM
Pump : UPM3 AUTO L 25-70 130
Temperature Adjustment Range : 30-60°C
Connection Size : Rp ¾”- G 1”
Threaded Connections : M ISO 228-1

TECHNICAL CHARACTERISTICS
Fluid : Water,
Water + Glycol Solutions 30%
Maximum Operating Temperature : 90°C
Factory Setting Temperature : 45°C
Accuracy : ±2 °C
Maximum Operating Pressure : 10 bar
Flow Coefficient, $Kv_s$ : 3,5 $m^3/h$
Temperature Gauge : 0-80 °C

Pre-assembled pump group for fixed point regulation and circulation of mixed fluid. Allows the circulation of the thermal fluid, coming from the primary circuit, by keeping the temperature at a pre-set value (fixed point) through the help of a mixing valve with thermostatic element. It is used in heating systems in general and radiant panel systems. The group is composed of a pump, thermostatic mixing valve, flow temperature gauge, manual air vent, fittings for secondary distribution manifolds. The group can be installed with the secondary distribution manifolds on the right or the left.

# B621 THERMOSTATIC MIXING VALVE


**621.1 | V07 M25 0BB**

This series of valves can be equipped with nuts and tailpieces with or without built-in check valve.

| | |
|---|---|
| Body | : Brass CW 617N UNI EN 12165 |
| Flow Regulator | : PSU |
| Seals | : EPDM |
| Handle | : ABS |
| Temperature Adjustment Range | : 35- 60 °C |
| Reference Operating Conditions | : $T_{hot}$= 65 °C<br>$T_{cold}$= 15 °C<br>$P_{hot\&cold}$= 3 bar |
| Connection Size | : G 1” |
| Threaded Connections | : MM ISO 228-1 |
| Fluid | : Domestic Water,<br>Water + Glycol Solutions 30% |
| Maximum Operating Temperature | : 95 °C |
| Factory Setting Temperature | : 44 °C |
| Accuracy | : ±2 °C |
| Maximum Structural Pressure | : 10 bar |
| Maximum Operating Pressure | : 5 bar |
| Max. Difference between Inlet Pressures | : 4 bar |
| Flow Coefficient, $Kv_s$ | : 2,5 $m^3/h$ |

**621.2 | V17 M32 0AA**

This series of valves can be equipped with union fittings with or without built-in check valve or built-in check valve and filter. If they need to be connected directly to a pump, versions with running nut on the central port are available (art. P09) .

| | |
|---|---|
| Body | : Brass CW 617N UNI EN 12165 |
| Seals | : EPDM |
| Handle | : ABS |
| Temperature Adjustment Range | : 30 - 65 °C |
| Reference Operating Conditions | : $T_{hot}$= 70 °C<br>$T_{cold}$= 15 °C<br>$P_{hot\&cold}$= 3 bar |
| Connection Size | : G 1¼” |
| Threaded Connections | : MM ISO 228-1 |
| Fluid | : Domestic Water,<br>Water for thermal systems<br>Water + Glycol Solutions 30% |
| Maximum Operating Temperature | : 90 °C |
| Factory Setting Temperature | : 40 °C |
| Accuracy | : ±2 °C |
| Maximum Structural Pressure | : 10 bar |
| Maximum Operating Pressure | : 5 bar |
| Maximum Allowed Pressure Loss | : 2 bar |
| Flow Coefficient, $Kv_s$ | : 3,5 $m^3/h$ |

| Product Code | Connection Size | Threaded Connection | Kv ($m^3/h$) |
|---|---|---|---|
| 621.1 | 1” | MM ISO 228-1 | 2,5 |
| 621.2 | 1¼” | MM ISO 228-1 | 3,5 |

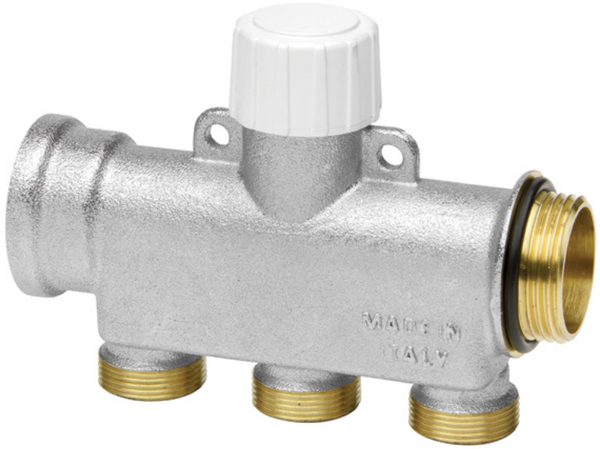


# B622 THERMAL SOLAR SYSTEMS THERMOSTATIC MIXING VALVE


| | | | |
|---|---|---|---|
| Body | : Brass CW 602N UNI EN 12165 | Fluid | : Potable Water,<br>Water for thermal systems<br>Water + Glycol Solutions 30% |
| Seals | : EPDM | | |
| Handle | : ABS | | |
| Temperature Adjustment Range | : 30- 65 °C | Maximum Operating Temperature | : 110 °C |
| Reference Operating Conditions | : Thot= 70 °C<br>Tcold= 15 °C<br>Phot&cold= 3 bar | Factory Setting Temperature | : 40 °C |
| | | Accuracy | : ±2 °C |
| | | Maximum Operating Pressure | : 10 bar |
| | | Maximum Allowed Pressure Loss | : 2 bar |
| Connection Size | : G ¾”, G 1” | Flow Coefficient, $Kv_s$ | : 2,3 $m^3/h$ |
| Threaded Connections | : EE ISO 228-1 | Maximum Difference between Inlet Press. | : 4 bar |

Thermostatic mixing valves are devices with mixed water coming from the central port and are used to adjust the water temperature. They are normally used in domestic water systems or in heating systems served by a thermal solar system through forced or natural circulation. Their function is to maintain constant the temperature of the mixed water sent to users even if hot and cold water inlet temperatures or pressures vary. This series of valves can be equipped with nuts and tailpieces with or without built-in check valve or built-in check valve and filter.

# R3616 SIMPLE SINGLE-ZONE MANIFOLD (RETURN)



| | |
|---|---|
| Body | : Nickel plated brass CW 617N UNI EN 12165 |
| Valve Seals | : EPDM PEROX |
| Hand Wheels and Caps | : ABS |
| Junction Connections | : Standard RBM (W24.5 x 19F) |
| Connection Size | : G1” |
| Line Connections | : MF 1” UNI-EN-ISO 228 |

TECHNICAL CHARACTERISTICS

| | |
|---|---|
| Fluid | : Water<br>Water + Glycol %50* |
| Temperature Range | : 0 °C ≤ T ≤100 °C |
| Maximum Operating Pressure | : 1000 kPa (10 bar) |
| Differential Pressure ΔPmax | : 100 kPa (1 bar) |

*: Make sure that the antifreeze fluid or glycol used is not aggressive for the O-rings, flow meters and construction materials of the manifold
**: Available thermal insulation shell accessory cod. 3673X002

| Product Code | Connection Size | Threaded Connection | Number of Ways |
|---|---|---|---|
| R36160600 | 1” | MF UNI-EN-ISO 228 | 1 |
| R36170600 | 1” | MF UNI-EN-ISO 228 | 2 |
| R36180600 | 1” | MF UNI-EN-ISO 228 | 3 |
| R36190600 | 1” | MF UNI-EN-ISO 228 | 4 |
| R36200600 | 1” | MF UNI-EN-ISO 228 | 5 |



# R3201 MANIFOLDS WITH LOCKSHIELD VALVES

KODSAN

| | |
|---|---|
| Body | : Nickel plated brass CW 617N UNI EN 12165 |
| Valve Seals | : Elastomer |
| Hand Wheels and Caps | : ABS |
| Junction Connections | : Standard RBM (W24.5 x 19F) |
| Connection Size | : G1” |
| Line Connections | : MF UNI-EN-ISO 228 |

TECHNICAL CHARACTERISTICS

| | |
|---|---|
| Fluid | : Water<br>Water + Glycol %50* |
| Temperature Range | : +5 °C ≤ T ≤100 °C |
| Maximum Operating Pressure | : 1000 kPa (10 bar) |
| Differential Pressure ΔPmax | : 100 kPa (1 bar) |

*: Make sure that the antifreeze fluid or glycol used is not aggressive for the O-rings, flow meters and construction materials of the manifold
**: Available thermal insulation shell accessory cod. 3673X002
Modular manifold with several ways complete with micrometric Lockshield valves and graduated hand-wheel.

| Product Code | Connection Size | Threaded Connection | Number of Ways |
|---|---|---|---|
| R32010620 | 1” | MF UNI-EN-ISO 228 | 1 |
| R32020620 | 1” | MF UNI-EN-ISO 228 | 2 |
| R32030620 | 1” | MF UNI-EN-ISO 228 | 3 |
| R32040620 | 1” | MF UNI-EN-ISO 228 | 4 |
| R32050620 | 1” | MF UNI-EN-ISO 228 | 5 |

# R3201 MANIFOLDS WITH FLOWMETER

**Body** : Nickel plated brass CW 617N UNI EN 12165
**Valve Seals** : EPDM
**Hand Wheels and Caps** : ABS
**Junction Connections** : Standard RBM (W24.5 x 19F)
**Connection Size** : G1”
**Line Connections** : MF UNI-EN-ISO 228

TECHNICAL CHARACTERISTICS
**Fluid** : Water
Water + Glycol %50*
**Temperature Range** : +5 °C ≤ T ≤80 °C
**Maximum Operating Pressure** : 1000 kPa (10 bar)
**Differential Pressure ΔPmax** : 100 kPa (1 bar)
**Flow Meter** : 1-4 l/min
**Flow Meter Accuracy** : ±10%

*: Make sure that the antifreeze fluid or glycol used is not aggressive for the O-rings, flow meters and construction materials of the manifold
**: Available thermal insulation shell accessory cod. 3673X002
Modular manifold with several ways complete with micrometric Lockshield valves and graduated hand-wheel.

| Product Code | Connection Size | Threaded Connection | Number of Ways |
|---|---|---|---|
| R32010600 | 1” | MF UNI-EN-ISO 228 | 1 |
| R32020600 | 1” | MF UNI-EN-ISO 228 | 2 |
| R32030600 | 1” | MF UNI-EN-ISO 228 | 3 |
| R32040600 | 1” | MF UNI-EN-ISO 228 | 4 |
| R32050600 | 1” | MF UNI-EN-ISO 228 | 5 |



# R3215 AIR & WATER AUTOMATIC DISCHARGE TERMINAL

KODSAN

Standard installation on the delivery line of modular brass manifold kits.
**Pressure Gauge Holder Connection** : G ⅛”
**Connection Size** : G1”
**Pressure Gauge** : 0-16 bar

| Product Code | Connection Size | Pressure Gauge Connection Size |
|---|---|---|
| R32150650 | 1” | ⅛” |

# R3216 AIR & WATER MANUAL DISCHARGE TERMINAL



Standard installation on return line of modular brass manifold kits.
**Pressure Gauge Holder Connection** : G ⅛”
**Connection Size** : G1”
**Pressure Gauge** : 0-16 bar

| Product Code | Connection Size | Pressure Gauge Connection Size |
|---|---|---|
| R32160650 | 1” | ⅛” |

# R3217 BY-PASS GROUP WITH ROTATABLE ELBOW FITTINGS

It consists of (loose pieces):
Automatic air vent,
By-pass adjustment group,
Fittings and connection pipe.
**Pressure Gauge Holder Connection** : G ⅛”
**Connection Size** : G1”
**Pressure Gauge** : 0-10 bar

| Product Code | Connection Size | Pressure Gauge Connection Size |
|---|---|---|
| R32170600 | 1” | ⅛” |

# R2028 COMPACT BRASS MANIFOLD KIT

Each kit contains:

- n° 1 multi-way manifold unit complete with flow meters with lockshield and flow indicator function;
- n° 1 multi-way manifold unit complete with valves with thermostatic option with hand wheel;
- 1 pair of plastic brackets for fixing manifolds;
- n° 2 thermometers 0÷80 °C;
- n° 2 union fittings;
- 1 x 1” air & water automatic discharge terminal unit;
- n° 1 manual 1” air & water discharge terminal unit.

| | |
|---|---|
| **Body** | : Nickel plated brass CW 617N UNI EN 12165 |
| **Valve Seals** | : Elastomer |
| **Hand Wheels and Caps** | : ABS |
| **Junction Connections** | : Euroconus (G ¾” UNI EN ISO 228) |
| **Connection Size** | : G1” |
| **Line Connections** | : F UNI-EN-ISO 228 |

TECHNICAL CHARACTERISTICS

| | |
|---|---|
| **Fluid** | : Water<br>Water + Glycol %50* |
| **Temperature Range** | : +5 °C ≤ T ≤100 °C (Manifold kit with Lockshield valves)<br>+5 °C ≤ T ≤ 80 °C (Manifold kit with flow-meters ) |
| **Maximum Operating Pressure** | : 1000 kPa (10 bar) |
| **Differential Pressure ΔPmax** | : 100 kPa (1 bar)<br>(only for solo manifolds with a thermostatic option) |
| **Flow Meter** | : 1-4 l/min |
| **Flow Meter Accuracy** | : ±10% |

*: Make sure that the antifreeze fluid or glycol used is not aggressive for the O-rings, flow meters and construction materials of the manifold.

| Product Code | Connection Size | Threaded Connection | Number of Ways |
|---|---|---|---|
| R20280610 | 1” | F UNI-EN-ISO 228 | 2+2 |
| R20290610 | 1” | F UNI-EN-ISO 228 | 3+3 |
| R20300610 | 1” | F UNI-EN-ISO 228 | 4+4 |
| R20310610 | 1” | F UNI-EN-ISO 228 | 5+5 |
| R20320610 | 1” | F UNI-EN-ISO 228 | 6+6 |
| R20330610 | 1” | F UNI-EN-ISO 228 | 7+7 |
| R20340610 | 1” | F UNI-EN-ISO 228 | 8+8 |
| R20350610 | 1” | F UNI-EN-ISO 228 | 9+9 |
| R20360610 | 1” | F UNI-EN-ISO 228 | 10+10 |
| R20370610 | 1” | F UNI-EN-ISO 228 | 11+11 |
| R20380610 | 1” | F UNI-EN-ISO 228 | 12+12 |
| R20381310 | 1” | F UNI-EN-ISO 228 | 13+13 |
| R20381410 | 1” | F UNI-EN-ISO 228 | 14+14 |



# R1410 COMPACT POLYMER MANIFOLD KIT

Each kit contains:

- n° 1 multi-way manifold unit complete with flow meters with lockshield and flow indicator function;
- n° 1 multi-way manifold unit complete with valves with thermostatic option with hand wheel;
- 1 pair of plastic brackets for fixing manifolds;
- n° 2 thermometers 0÷80 °C;
- n° 2 union fittings;
- 1 x 1” air / water automatic discharge terminal unit;
- n° 1 manual 1” air / water discharge terminal unit.

| | |
|---|---|
| **Body** | : Polymer (Pa66 + 30% FV) with Brass inserts on the threaded parts |
| **Valve Seals** | : Elastomer |
| **Hand Wheels and Caps** | : ABS |
| **Junction Connections** | : Euroconus (G ¾” UNI EN ISO 228) |
| **Connection Size** | : G1” |
| **Line Connections** | : F UNI-EN-ISO 228 |

TECHNICAL CHARACTERISTICS

| | |
|---|---|
| **Fluid** | : Water<br>Water + Glycol %50* |
| **Temperature Range** | : +5 °C ≤ T ≤100 °C (Manifold kit with Lockshield valves)<br>+5 °C ≤ T ≤ 80 °C (Manifold kit with flow-meters ) |
| **Maximum Operating Pressure** | : 800 kPa (8 bar) |
| **Maximum Circuit Test Pressure** | : 1000 kPa (10 bar) |
| **Differential Pressure ΔPmax** | : 100 kPa (1 bar) |
| **Flow Meter** | : 1-4 l/min |
| **Flow Meter Accuracy** | : ±10% |

*: Make sure that the antifreeze fluid or glycol used is not aggressive for the O-rings, flow meters and construction materials of the manifold

| Product Code | Connection Size | Threaded Connection | Number of Ways |
|---|---|---|---|
| R14100640 | 1” | F UNI-EN-ISO 228 | 2+2 |
| R14110640 | 1” | F UNI-EN-ISO 228 | 3+3 |
| R14120640 | 1” | F UNI-EN-ISO 228 | 4+4 |
| R14130640 | 1” | F UNI-EN-ISO 228 | 5+5 |
| R14140640 | 1” | F UNI-EN-ISO 228 | 6+6 |
| R14150640 | 1” | F UNI-EN-ISO 228 | 7+7 |
| R14160640 | 1” | F UNI-EN-ISO 228 | 8+8 |
| R14170640 | 1” | F UNI-EN-ISO 228 | 9+9 |
| R14180640 | 1” | F UNI-EN-ISO 228 | 10+10 |
| R14190640 | 1” | F UNI-EN-ISO 228 | 11+11 |
| R14200640 | 1” | F UNI-EN-ISO 228 | 12+12 |
| R14201340 | 1” | F UNI-EN-ISO 228 | 13+13 |
| R14201440 | 1” | F UNI-EN-ISO 228 | 14+14 |

# COMPLEMENTARY & SPARE PARTS

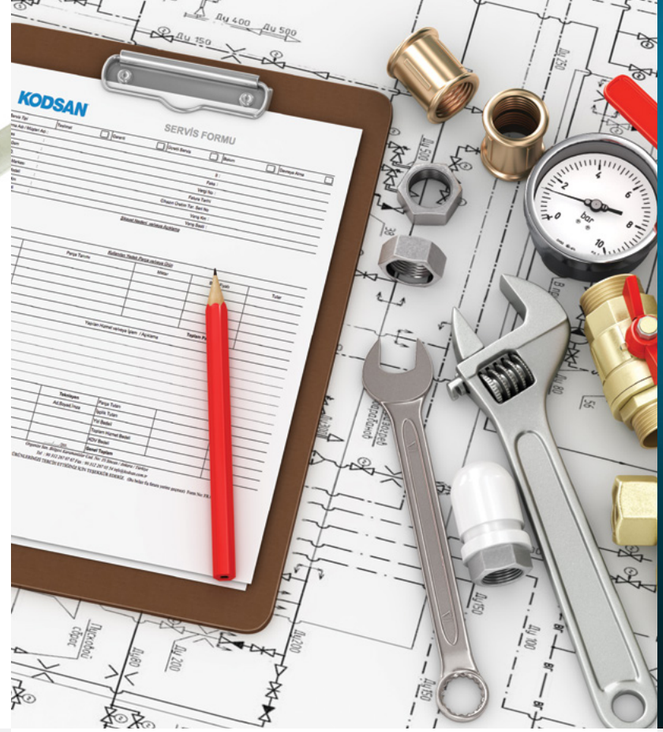
## COMPLEMENTARY & SPARE PARTS

## ONLINE
### TECH SUPPORT

Our top priority is customer satisfaction. Now Kodsan has an online technical support service. You may benefit from maintenance tracking system option.

## LIFELONG
### DURABILITY

Magnesium or current anodes are the main protection elements for Kodsan water heaters. With the right periodic maintenance you may extend your product's life.




## SAVE
### TIME & COST

Kodsan supplies high quality spare parts and complementary items with competitive offers.

## UP TO
### 10 YEARS WARRANTY

It is possible for you to extend your product's warranty by using Kodsan's modified safety kit alternatives.

## DO NOT FORGET PERIODIC MAINTENANCE

Be sure to replace the magnesium anode rod for periodic maintenance at least once a year.

The anode rod is located on the upper center of the tank. For detailed information, check the operating and installation manual.

## ABOUT SAFETY EQUIPMENTS

Max. 8 bar full-lift safety valve must be used at the cold water inlet of all enamel coated water heaters.

The expansion tank should be selected by consideration of total volume of water heaters used at the system. Water heaters will be out of warranty conditions in case of not usage / failure or incorrect installation of the safety equipments.

ABS UPPER COVER

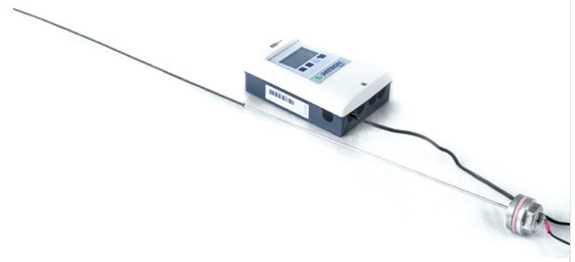
ABS FLANGE COVER

MAGNESIUM ANODE

MAGNESIUM CHAIN ANODE

ABS RESISTANCE PANEL


TEMPERATURE GAUGE



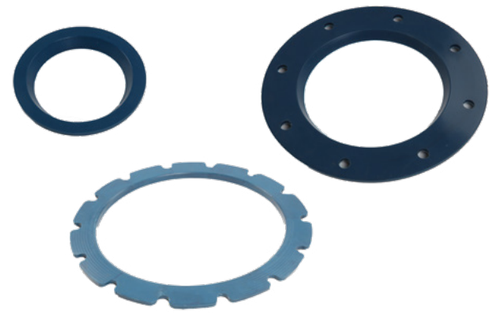
ELECTRONIC ANODE

PLASTIC ROSETTE

SENSOR TUBE

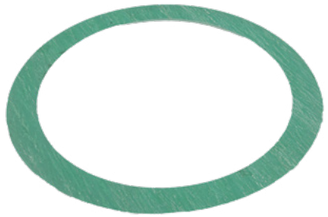
BRASS BLIND PLUG

BLANK FLANGE SET



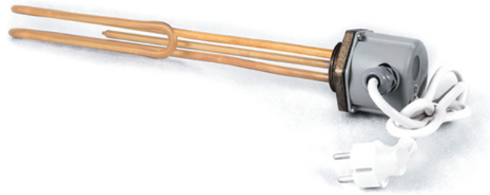
SILICONE FLANGE GASKET

SILICONE GASKET



CYLINDER HEAD GASKET

RESISTANCE



PLUG & PLAY RESISTANCE

VINLEKS- ARTIFICIAL LEATHER

BLUESHELL INSULATION (Grey)

RESISTANCE CAP

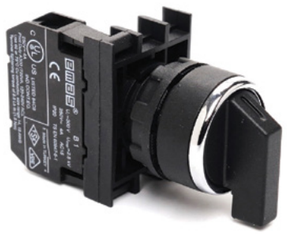
DIGITAL THERMOSTAT

SOFT PU INSULATION

FLAME RETARDANT SOFT PU INSULATION

ANALOG THERMOSTAT (30-90)

INDICATING LAMP

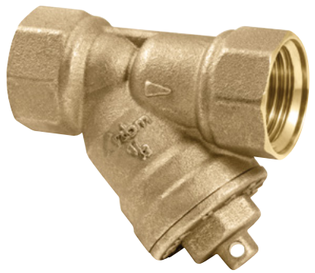


ON-OFF SWITCH

CIRCUIT BREAKER AND CONTACTOR

HEXAGONAL NUT

LOCK-NUT



STRAINER

MOVABLE TEE FITTING

THREADED DOUBLE NIPPLE

THREADED SLEEVE

TEE FITTING

REDUCING BUSHING

MOVABLE HEAD SLEEVE COUPLING

ELBOW JOINT

BLIND PLUG

SENSOR TUBE

NON-RETURN SPRİNG-LOADED VALVE

THERMOCOUPLE OUTLET BALL VALVE

SAFETY RELIEF VALVE

DIFFERENTIAL PRESSURE REGULATING VALVE

BALL VALVE

EXPANSION TANK WITH MEMBRANE

CAPILLARY PIPE

CONNECTION PART WITH STRAINER

HEAT EXCHANGER

EPP HEAT EXCHANGER INSULATION

THERMOSTATIC VALVE

THERMOSTATIC VALVE BODY

PAIR OF STEEL BRACKETS

COMPRESSION FITTING

ELECTROMOTORIC DRIVEN 2-WAY CONTROL VALVE BODY


ELECTROMOTORIK DRIVEN CONTROL ACTUATOR


THERMO-ELECTRICALLY CONTROLLED SERVO MOTOR
WITH AUXILIARY MICROSWITCH

FITTING FOR PIPE CONNECTION TO MANIFOLD


PRESSURE GAUGE

REPAIR KIT/ CURCUITS JUNCTION

BALL DISCHARGE COCK

FULL BORE BALL VALVE

ACID CONDENSATION NEUTRALISING FILTER INSULATION


NEUTRALISING LOAD OF CALCIUM CARBONATE

SELF-CLENANING FILTER CARTRIDGE

CARTRIDGE FOR MG1 MAGNETIC SLUDGE REMOVER FILTER

KODSAN

KODSAN

COMPANY LOGO


CAPACITY LABEL

# IMPORTANT NOTES

- We highly recommend to follow instructions specified at the user and installation guide attached to your product in order to secure of using it in safe and efficient.
- Safety Valve, expansion tank and, if required, pressure reducer valve should be used with our products (water heaters and storage tanks).
- KODSAN reserves the right to change the product specifications, technical information and installation diagrams without any notifications.
  All information written on this page can not be copied or used without permission of KODSAN. Kodsan can not be held responsible if any of the technical information and schemes are considered exemplary by third parties.
- You may contact Kodsan for more details about your product.

# SYMBOLS

| | | | | | |
|---|---|---|---|---|---|
| Two-Way Motorized Valve | Bypass Valve | Pump | Pressure Relief Valve | Air Separator | Boiler System |
| Three-Way Modulating Motorized Valve | Drain Valve | Twin-Head Pump | Differential Pressure Regulating Valve | Dirt Separator | Condensing Boiler System |
| Two Way Thermostatic Valve | Shut Off Valve | Heat Meter | Flow Limiter | Membrane Expansion Tank | Cascade System |
| Three Way Thermostatic Valve | Strainer | Cold Water Flow Meter | Flow Sensor | Radiator or Underfloor Heating System | Combi System |
| Filling Valve | Check Valve | Pressure Gauge | Water Hammer Arrestor | Underfloor Heating System | Solar Panel |
| Ball Valve | Pressure Release Valve | Thermometer | Cable Terminal Box | Radiator Heating System | Heat Pump System |
| Thermostatic Outlet Ball Valve | Safety Thermostat | Air Relief Cock | Heat Exchanger | District Heating System | Usage Area |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Experience

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