



CLIMATE CONTROL SYSTEMS / PRODUCT INFORMATION

# VEHICLE HEATERS, ADDITIONAL PARTS, INSTALLATION TIPS AND TECHNICAL DATA

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# 1 | Heating systems – air or water?

The basic principle of pre-heaters is to heat the passenger compartment of all kinds of vehicles without having to depend on the heat given off by a running engine. That's a well-known fact. **But at some point or other you must have asked yourself what the actual difference is between air and water heaters.**

## Air-based pre-heater – Eberspächer Airtronic:

**Air-based pre-heaters** are mostly installed inside the cab and directly heat the air inside it, which is sucked in via the unit's own fan. Their effects are noticeable almost instantly, as the heat in the form of hot gas, which is produced by a burner, does not have to heat up a water circuit first. Modern devices are very quiet, low on emissions and chiefly used to maintain the temperature in the cab of a truck or van at a pleasant level even while it is at a standstill (e.g. overnight).

## Water-based pre-heater – Eberspächer Hydronic:

**Water-based pre-heaters** have a compact design and can be fitted almost anywhere in the engine compartment. They are therefore the pre-heater of choice for cars with interiors too cramped for additional installations. The heat generated by a burner is transferred to

the vehicle's coolant. An (additional) electric circulation pump distributes the heat, even when the engine is switched off. Then, the interior fan is activated automatically – everything works as it does in normal heater operation. **Water-based heaters therefore not only warm up the interior but, depending on the application, also the engine or the water used in boats or motor homes.** Engines heated in this way can be started more easily in cold weather while also protecting the car battery from the effects of the cold, and producing fewer harmful emissions on starting, as the hotter exhaust temperature enables the catalytic converter to reach its operating temperature more quickly. The cold-starting phase, which produces mechanical stress and higher emissions, is dramatically reduced, as the oil reaches operating temperature fast when the engine is started. This saves fuel and money while **lowering CO<sub>2</sub> emissions at the same time.**

Both systems generally run on the vehicle's fuel, straight out of the fuel tank. Depending on the model, you can use a timer, remote control, smartphone, smartwatch, Alexa or a browser to control them.

# 1 | Heating systems: Hydronic – water heaters

## Hydronic S3 (4 kW):

Cab and engine heater

-  Passenger cars (up to 2.0 l displacement)
-  Emergency vehicles
-  Station wagons (with additional thermo-combi valve if using Hydronic 4; ideally use Hydronic 5)
-  Small agricultural and construction machines
-  Motor yachts up to around 22 ft. long\*

## Hydronic S3 (5 kW):

Cab and engine heater

-  Passenger cars (from 2.0 l displacement)
-  Emergency vehicles
-  Vans, large taxis, minivans
-  Commercial vehicles, including tandem configurations with air heaters
-  Construction and agricultural machines
-  Motor yachts\* up to around 25 ft. long
-  Motor homes\*

## Hydronic M2 (8/10/12 kW):

-  Commercial vehicles from approx. 150 kW engine power
-  Cargo area heating
-  Military vehicles
-  Large agricultural and construction machines
-  Motor yachts up to around 45 ft. long
-  Motor homes

## Hydronic L3 (16/24/30/35 kW):

-  Coaches and city buses
-  Large freight compartments for goods that need to be kept warm
-  Container setups
-  Diesel locomotives
-  Yachts and ships up to around 72 ft. long

\* The heater may be used in combination with a mains connection (230 V/50 Hz) as used in camping or parking areas for motor homes or in marinas for boats, for example, only in combination with a special cable harness (order no.: 25 2652 82 11 00, see page 106). The cable harness is included in the universal installation kit for recreational vehicles (order no.: 25 2652 82 00 00).

# 1 | Heating systems: Airtronic – air heaters

## Airtronic S3 (2.2 kW):

Heating comfort for a variety of applications.

-  Vans, small motor homes, small buses
-  Truck cabs with sleeping cabins
-  Construction and agricultural machines without engine-dependent heating
-  Forklifts and other plant machinery
-  Electric vehicles
-  Yachts up to around 22 ft. long

ADR variants available (24 V devices)

## Airtronic M3 (4 kW):

The high-performance, compact air heater for mid-range requirements.

-  Large trucks – cabs with sleeping cabins
-  Vans, small buses
-  Large agricultural and construction machines
-  Yachts up to around 35 ft. long
-  Motor homes
-  Minivans, and vehicles used for conferences and consultancy

ADR variants available (24 V devices)

## Airtronic L3 (6 kW):

-  Vans, workshop vehicles, personnel carriers, small buses (fast heating despite door opening frequently)
-  Ambulances and emergency medics' vehicles (special heating and temperature requirements)
-  Freight compartment and freight goods heating plus frost protection and dew point prevention
-  Yachts, ships up to around 45 ft. long

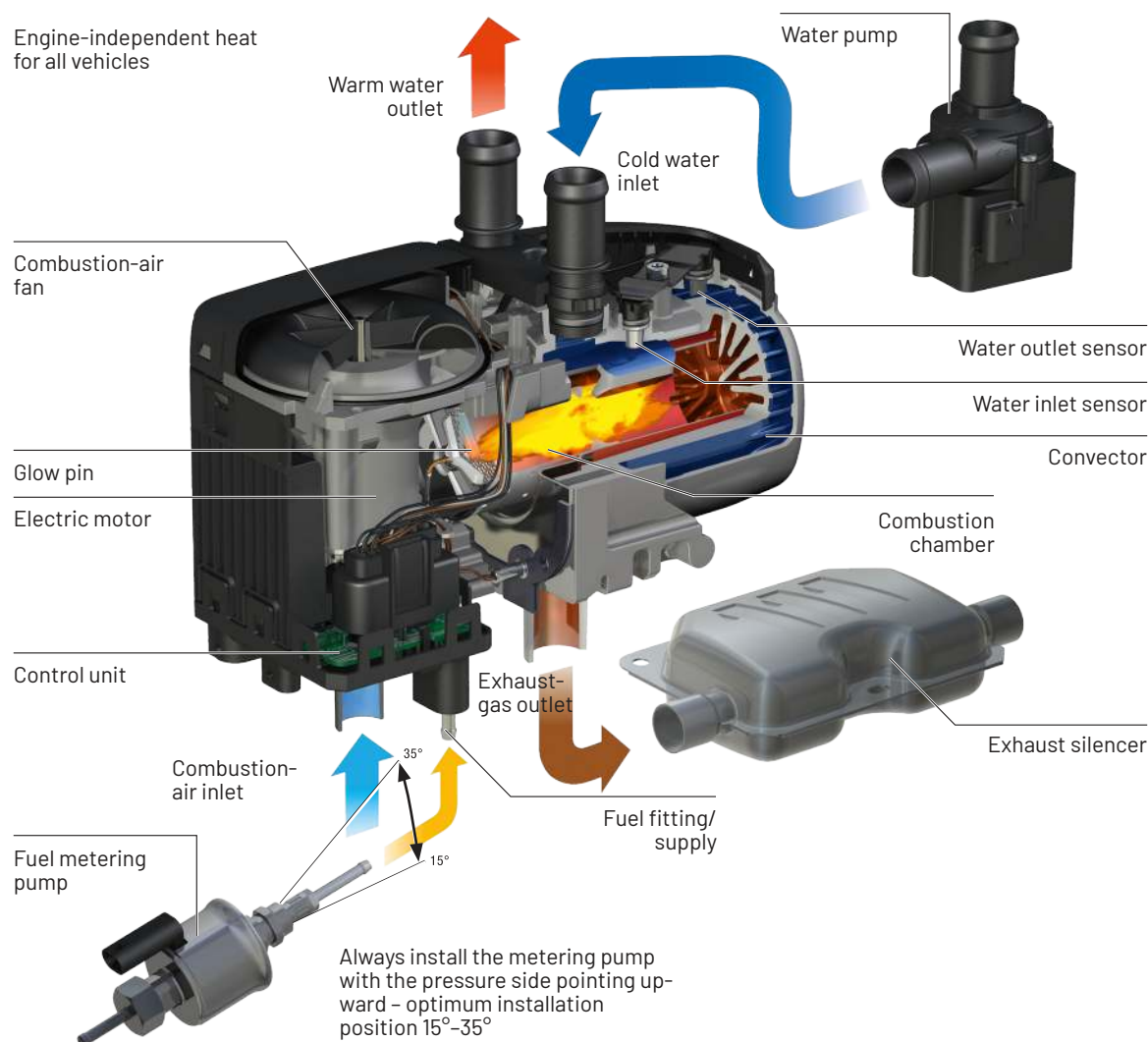
ADR variants available (24 V devices)

## Airtronic XL3 (8 kW):

Continuously variable, pre-selectable heating performance regulation.

-  Large freight compartments, containers
-  Personnel carriers
-  Coaches and city buses
-  Ships up to around 62 ft. long

## 2 | Hydronic S3 Economy: technology

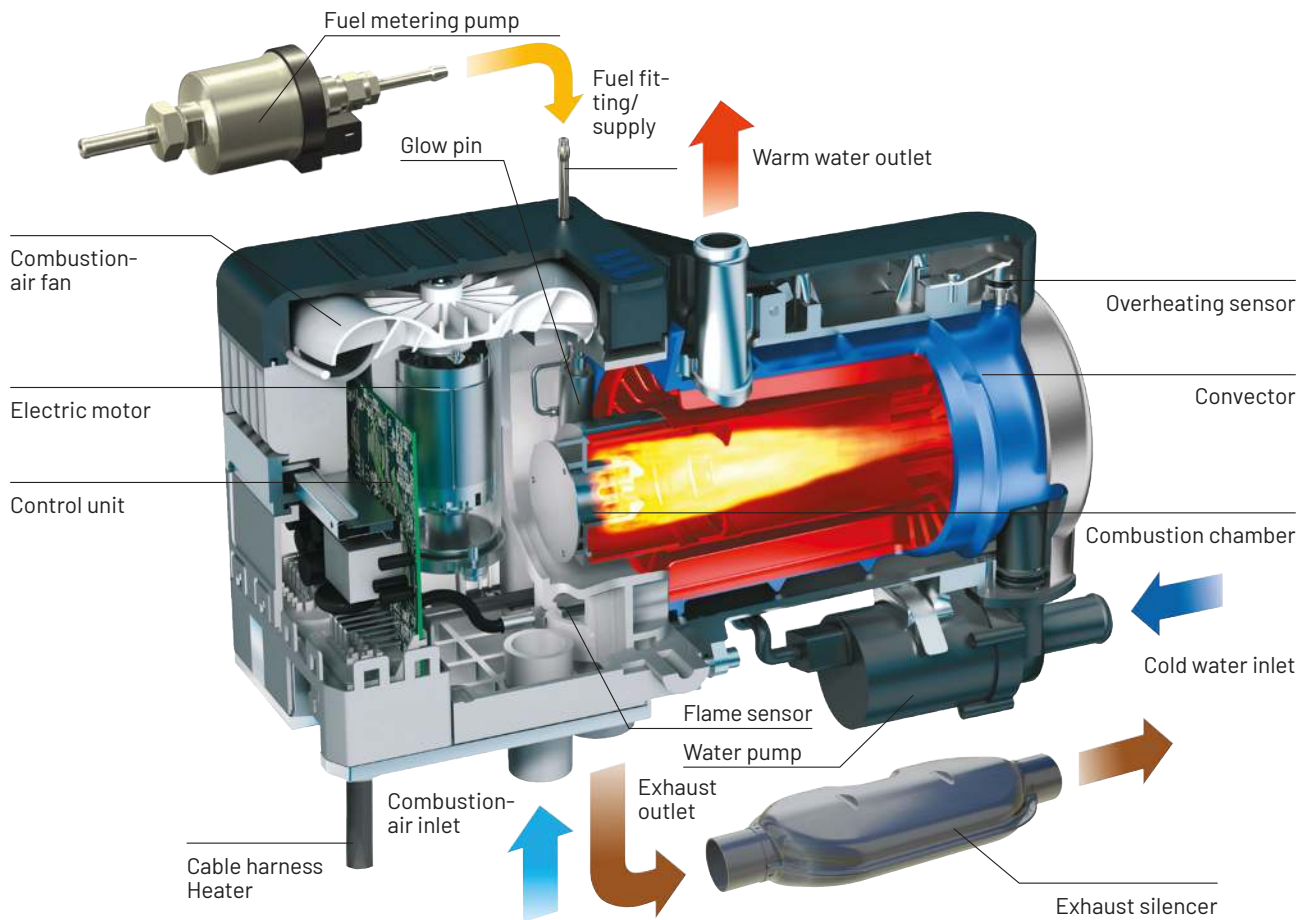


### Hydronic S3 Economy\* functions:

- Combustion air is conveyed to the combustion chamber by the fan motor and impeller.
- Fuel is drawn from the vehicle's tank.
- Fuel is conveyed to the combustion chamber by the metering pump (reciprocating pump).
- The glow pin vaporizes this fuel as it enters the combustion chamber and creates a combustible fuel-air mix with the combustion air.
- The resulting flame formation switches off the glow pin, transfers the heat to the coolant via the convector, and diverts exhaust gas via the exhaust silencer.
- The coolant circulation pump conveys cool water to the heater, where it is warmed by the convector and then routed to the vehicle's convector and combustion engine.

\* The heater may be used in combination with a mains connection (230 V/50 Hz) as used in camping or parking areas for motor homes or in marinas for boats, for example, only in combination with a special cable harness (order no.: 25 2652 82 11 00, see page 106). The cable harness is included in the universal installation kit for recreational vehicles (order no.: 25 2652 82 00 00).

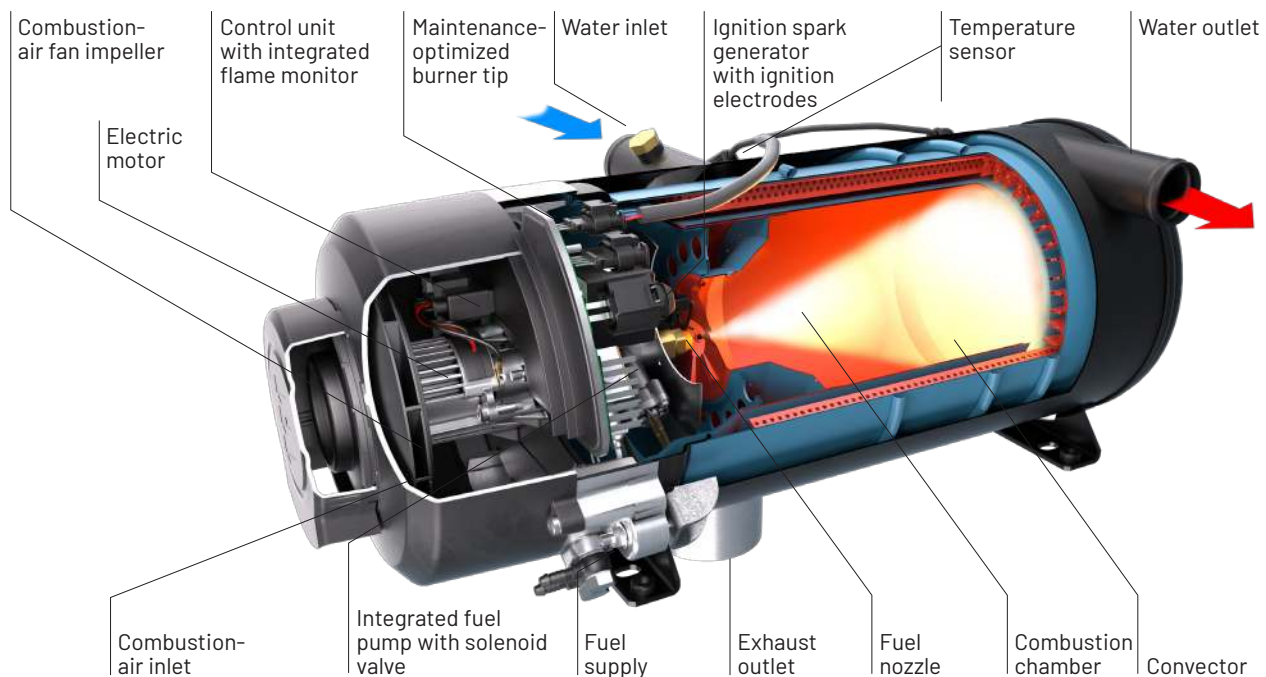
## 2 | Hydronic M2: technology



### Hydronic M2 functions:

- Combustion air is conveyed to the combustion chamber by the fan motor and impeller.
- Fuel is drawn from the vehicle's tank.
- Fuel is conveyed to the combustion chamber by the metering pump (reciprocating pump).
- The glow pin vaporizes this fuel as it enters the combustion chamber and creates a combustible fuel-air mix with the combustion air.
- The resulting flame formation switches off the glow pin, transfers the heat to the coolant via the convactor, and diverts exhaust gas via the exhaust silencer.
- The coolant circulation pump conveys cool water to the heater, where it is warmed by the convactor and then routed to the vehicle's convactor and combustion engine.

## 2 | Hydronic L3: technology



### Hydronic L3 functions:

- Combustion air is conveyed to the combustion chamber by the fan motor and impeller.
- A gear pump conveys fuel from the vehicle's tank and builds up pressure against the closed solenoid valve.
- The solenoid valve opens, and the fuel is atomized by the fuel nozzle in the combustion chamber/flame tube.
- The ignition spark generator ignites the fuel-air mix.
- The resulting flame detection by an optical flame sensor switches off the ignition spark generator, transfers the heat to the coolant via the convector, and diverts exhaust gas via the exhaust silencer.
- The coolant circulation pump conveys cool water to the heater, where it is warmed by the convector and then routed to the vehicle's convector and combustion engine.

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## Eberspächer Hydronic

|                                |                                             |                       |
|--------------------------------|---------------------------------------------|-----------------------|
| Heater                         | Hydronic 2 Ethanol E4S                      |                       |
| Product package                | Heater, water pump, metering pump           |                       |
| Techn. designation             | E4S 12V                                     |                       |
| Order no. for heater           | 20 1920 05 00 00                            |                       |
| Fuel                           | E85 bio-ethanol according to DIN 51625/E100 |                       |
| Voltage                        | V                                           | 12                    |
| Heating medium                 | Mixture of water and (max 50%) coolant      |                       |
| Control/heat settings          | low/high/power                              |                       |
| Heating performance            | W                                           | 1,300 / 3,700 / 4,300 |
| Fuel consumption               | l/h                                         | 0.23 / 0.67 / 0.78    |
| Power consumption, heater      | W                                           | 7 / 20 / 27           |
| Power consumption, water pump  | W                                           | 11                    |
| Elec. power consumption, start | W                                           | 120                   |
| Minimum water throughput       | l/h                                         | 250                   |
| Lower voltage limit            | V                                           | 10.5                  |
| Upper voltage limit            | V                                           | 16                    |
| Interference suppression       | 5 (DIN EN 55025)                            |                       |
| Dimensions L x W x H           | mm                                          | 214 x 86 x 139        |
| Weight empty                   | kg                                          | 2.4                   |



## Eberspächer Hydronic

|                                  |                                                      |                                                   |                         |                         |                |
|----------------------------------|------------------------------------------------------|---------------------------------------------------|-------------------------|-------------------------|----------------|
| Heater                           | Hydronic S3 Economy (CS)*                            |                                                   |                         |                         |                |
| Product package                  | Heater, water pump, metering pump                    |                                                   |                         |                         |                |
| Techn. designation               | Hydronic S3 Economy B4E                              | Hydronic S3 Economy B5E                           | Hydronic S3 Economy D4E | Hydronic S3 Economy D5E |                |
| Order no. for heater             | 20 2050 05 0000                                      | 20 2051 05 0000                                   | 25 2992 05 0000         | 25 2993 05 0000         |                |
| Order no. for heater with APRMP* | -                                                    | -                                                 | 25 2995 05 0000         | 25 2994 05 0000         |                |
| Fuel                             | Gasoline                                             |                                                   | Diesel                  |                         |                |
| Voltage                          | V                                                    | 12                                                |                         |                         |                |
| Heating medium                   | Water                                                |                                                   |                         |                         |                |
| Control/heat settings            | Stepless                                             |                                                   |                         |                         |                |
| Heating performance              | W                                                    | 1,800 to 4,300                                    | 1,800 to 5,000          | 1,300 to 4,300          | 1,300 to 5,000 |
| Fuel consumption                 | l/h                                                  | 0.57                                              | 0.67                    | 0.53                    | 0.59           |
| Power consumption, heater        | W                                                    | 7 / 24                                            | 7 / 32                  | 5 / 27                  | 5 / 32         |
| Power consumption, water pump    | W                                                    | 17                                                |                         |                         |                |
| Elec. power consumption, start   | W                                                    | 135                                               |                         |                         |                |
| Minimum water throughput         | l/h                                                  | 300                                               |                         |                         |                |
| Lower voltage limit              | V                                                    | 10.5                                              |                         |                         |                |
| Upper voltage limit              | V                                                    | 16                                                |                         |                         |                |
| IP type of protection            | Heater: IP5K6K, IP5K9K, control unit: IP6K6K, IP6K9K |                                                   |                         |                         |                |
| Dimensions L x W x H             | mm                                                   | 215 x 91 x 180 (with straight connection fitting) |                         |                         |                |
| Weight empty                     | kg                                                   | 2.0                                               |                         |                         |                |

\* The heater may be used in combination with a mains connection (230 V/50 Hz) as used in camping or parking areas for motor homes or in marinas for boats, for example, only in combination with a special cable harness (order no.: 25 2652 82 11 00, see page 95). The cable harness is included in the universal installation kit for recreational vehicles (order no.: 25 2652 82 00 00).

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### Eberspächer Hydronic

|                                |                                                                                                                          |                                                   |                                |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------|
| Heater                         | Hydronic S3 Commercial                                                                                                   |                                                   |                                |
| Product package                | Heater, water pump, metering pump                                                                                        |                                                   |                                |
| Techn. designation             | Hydronic S3 Commercial D5L                                                                                               | Hydronic S3 Commercial D6L                        | Hydronic S3 Commercial D6L ADR |
| Order no. for heater           | 25 3009 05 0000                                                                                                          | 25 2972 05 0000                                   | 25 3004 05 0000                |
| Fuel                           | Diesel fuel – commercially available (DIN EN 590)<br>Addition of max. 30% FAME according to DIN EN 14214 is permissible. |                                                   |                                |
| Voltage                        | V                                                                                                                        | 24                                                |                                |
| Heating medium                 | Mix of water and antifreeze<br>(proportion of antifreeze min. 10% to max. 50%)                                           |                                                   |                                |
| Control/heat settings          | Stepless                                                                                                                 |                                                   |                                |
| Heating performance            | W                                                                                                                        | 1,300 to 5,000                                    | 1,300 to 5,600                 |
| Fuel consumption               | l/h                                                                                                                      | 0.59                                              | 0.65                           |
| Power consumption, heater      | W                                                                                                                        | 32                                                | 37                             |
| Power consumption, water pump  | W                                                                                                                        | 35                                                |                                |
| Elec. power consumption, start | W                                                                                                                        | 135                                               |                                |
| Minimum water throughput       | l/h                                                                                                                      | 300                                               |                                |
| Lower voltage limit            | V                                                                                                                        | 20.4                                              |                                |
| Upper voltage limit            | V                                                                                                                        | 32                                                |                                |
| IP type of protection          | Heater: IP5K6K, IP5K9K, control unit: IP6K6K, IP6K9K*                                                                    |                                                   |                                |
| Dimensions L x W x H           | mm                                                                                                                       | 215 x 91 x 180 (with straight connection fitting) |                                |
| Weight empty                   | kg                                                                                                                       | 2.0                                               |                                |

\* The heater is protected against dust in harmful quantities, against powerful water jets under increased pressure and against water during high-pressure/steam jet cleaning (provided it is not in operation). The control unit is fully dustproof, fully protected against powerful water jets under increased pressure, as well as against water during high-pressure/steam jet cleaning (provided it is not in operation).

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## Eberspächer Hydronic

|                                |     |                                   |                  |                               |                  |
|--------------------------------|-----|-----------------------------------|------------------|-------------------------------|------------------|
| Heater                         |     | Hydronic M8 Biodiesel             |                  | Hydronic M10                  |                  |
| Product package                |     | Heater, water pump, metering pump |                  |                               |                  |
| Techn. designation             |     | Hydronic M2 (D8W)                 |                  | Hydronic M2 (D10W)            |                  |
| Order no. for heater           |     | 25 2470 05 00 00                  | 25 2471 05 00 00 | 25 2434 05 00 00              | 25 2435 05 00 00 |
| Fuel                           |     | Diesel and FAME (biodiesel)       |                  | Diesel                        |                  |
| Voltage                        | V   | 12                                | 24               | 12                            | 24               |
| Heating medium                 |     | Water                             |                  |                               |                  |
| Control/heat settings          |     | low/medium/high/power             |                  |                               |                  |
| Heating performance            | W   | 1,500 / 3,500 / 5,000 / 8,000     |                  | 1,500 / 3,500 / 8,000 / 9,500 |                  |
| Fuel consumption               | l/h | 0.18 / 0.4 / 0.65 / 0.9           |                  | 0.18 / 0.4 / 0.9 / 1.2        |                  |
| Power consumption, heater      | W   | 6 / 10 / 17 / 26                  |                  | 6 / 10 / 31 / 57              |                  |
| Power consumption, water pump  | W   | 29                                |                  |                               |                  |
| Elec. power consumption, start | W   | 200                               |                  | 120                           |                  |
| Minimum water throughput       | l/h | 500                               |                  |                               |                  |
| Lower voltage limit            | V   | 10                                | 20               | 10                            | 20               |
| Upper voltage limit            | V   | 15                                | 30               | 15                            | 30               |
| Interference suppression       |     | 5 (DIN EN 55025)                  |                  |                               |                  |
| Dimensions L x W x H           | mm  | 331 x 138 x 221                   |                  |                               |                  |
| Weight empty                   | kg  | 6.2                               |                  |                               |                  |

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## Eberspächer Hydronic

| Heater                         |     | Hydronic M12                                   | Hydronic M12     |
|--------------------------------|-----|------------------------------------------------|------------------|
| Product package                |     | Heater, water pump, metering pump              |                  |
| Techn. designation             |     | Hydronic M2 (D12W)                             |                  |
| Order no. for heater           |     | 25 2472 05 00 00                               | 25 2473 05 00 00 |
| Fuel                           |     | Diesel                                         |                  |
| Voltage                        | V   | 12                                             | 24               |
| Heating medium                 |     | Water                                          |                  |
| Control/heat settings          |     | low/medium 1/medium 2/medium 3/high/power      |                  |
| Heating performance            | W   | 1,200 / 1,500 / 3,500 / 5,000 / 9,500 / 12,000 |                  |
| Fuel consumption               | l/h | 0.15 / 0.18 / 0.4 / 0.65 / 1.2 / 1.5           |                  |
| Power consumption, heater      | W   | 5 / 6 / 10 / 17 / 57 / 103                     |                  |
| Power consumption, water pump  | W   | 29                                             |                  |
| Elec. power consumption, start | W   | 120                                            |                  |
| Minimum water throughput       | l/h | 500                                            |                  |
| Lower voltage limit            | V   | 10                                             | 20               |
| Upper voltage limit            | V   | 15                                             | 30               |
| Interference suppression       |     | 5 (DIN EN 55025)                               |                  |
| Dimensions L x W x H           | mm  | 331 x 138 x 221                                |                  |
| Weight empty                   | kg  | 6.2                                            |                  |

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## Eberspächer Hydronic

| Heater                        |     | Hydronic L16           | Hydronic L24         | Hydronic L30         | Hydronic L35         |
|-------------------------------|-----|------------------------|----------------------|----------------------|----------------------|
| Product package               |     | Heater                 |                      |                      |                      |
| Techn. designation            |     | Hydronic L3 (HL3-16)   | Hydronic L3 (HL3-24) | Hydronic L3 (HL3-30) | Hydronic L3 (HL3-35) |
| Order no. for heater          |     | 25 3042 02 0000        | 25 3043 02 0000      | 25 3040 02 0000      | 25 3041 02 0000      |
| Order no. for compact heater* |     | -                      | 25 3043 05 0000      | 25 3040 05 0000      | 25 3041 05 0000      |
| HVO version                   |     | -                      | -                    | 25 3116 02 0000      | 25 3117 02 0000      |
| Fuel                          |     | Diesel and heating oil |                      |                      |                      |
| Voltage                       | V   | 24                     |                      |                      |                      |
| Heating medium                |     | Water                  |                      |                      |                      |
| Heating performance           | W   | 16,000                 | 24,000               | 30,000               | 35,000               |
| Fuel consumption              | l/h | 1.9                    | 2.7                  | 3.15                 | 3.7                  |
| Power consumption, heater     | W   | 65                     | 85                   | 95                   | 110                  |
| Minimum water throughput      | l/h | 1,400                  | 2,000                | 2,500                | 3,000                |
| Lower voltage limit           | V   | 20                     |                      |                      |                      |
| Upper voltage limit           | V   | 32                     |                      |                      |                      |
| Dimensions L x W x H          | mm  | 544 x 230 x 221        |                      |                      |                      |
| Weight empty                  | kg  | 16                     |                      |                      |                      |

\* Incl. water pump Flowtronic 5000 (25 2488 27 0000)

## Eberspächer water pumps for Hydronic L3



| Water pumps              |     | Flowtronic 5000                            | Flowtronic 5000 S | Flowtronic 6000 SC                               |
|--------------------------|-----|--------------------------------------------|-------------------|--------------------------------------------------|
| Order no. for water pump |     | 25 2488 26 00 00                           | 25 1818 30 00 00  | 25 2488 25 00 00                                 |
| Coolant                  |     | Water-glycol mix with up to max 50% glycol |                   |                                                  |
| Delivery rate            | l/h | 5,200 at 0.2 bar                           |                   | 6,000 at 0.4 bar                                 |
| Operating pressure       | bar | max. 2                                     |                   |                                                  |
| Nominal voltage          | V   | 24                                         |                   |                                                  |
| Elec. power consumption  | W   | 104                                        |                   | 210                                              |
| Protection class         |     | IP5K4                                      | IP54A             | IP25 (potted electronics)                        |
| Dry running              |     | No                                         |                   | Yes – motor switches itself off after 45 minutes |
| Shaft-impeller connector |     | Mechanical seal                            | Magnetic coupling |                                                  |
| Weight empty             | kg  | 2.04                                       | 2.2               | 2.5                                              |

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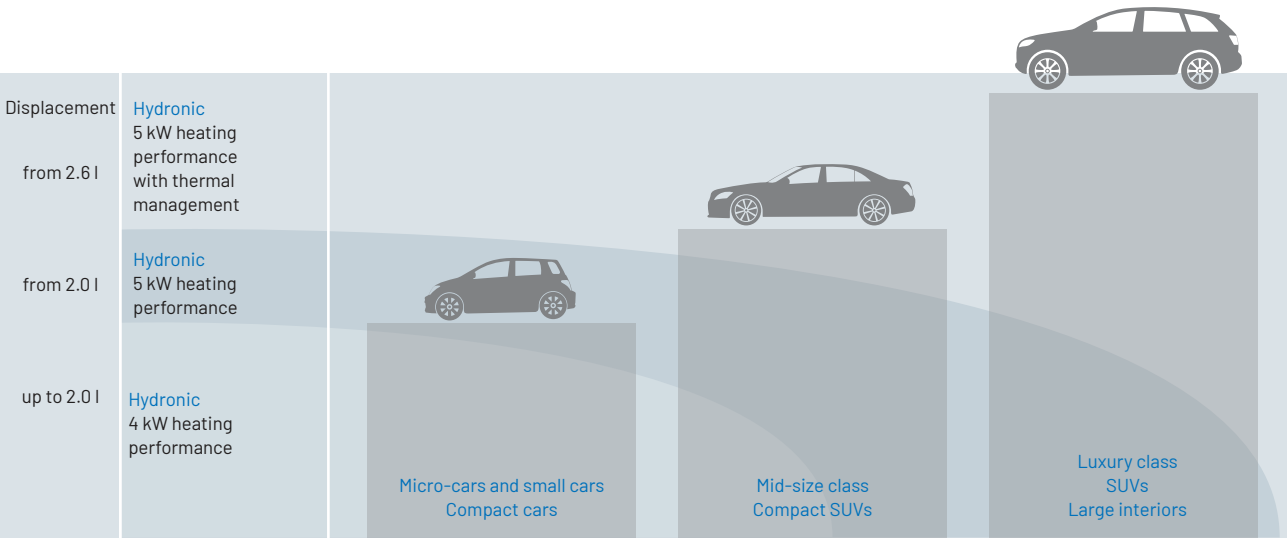
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## 2 | Selecting the water heater for passenger cars



### Advantages:

- Hydronic S3 Economy & Commercial (4 to 6 kW): New holder design plus straight and 90° angled water fittings (rotatable through 360°), which can be used in any combination for faster installation. New installation recommendations and kits are available.
- A 4 kW heater is generally sufficient for installations with decoupled engine (small circuit).
- Hydronic M2 (8 to 12 kW): increased power for larger engines and cabins, e.g. large trucks, small buses, cargo areas.
- Hydronic L3 (16 to 35 kW) is ideally suited for buses, trains, boats and cargo areas.

### Fuel compatibility:

- Biodiesel: Hydronic S3 Economy (up to 30%), Hydronic M8 (100%), Hydronic M10 / M12 (up to 20%).
- E10: all (professionally installed) water heaters.
- HVO: all current Hydronic devices, Hydronic L3: 30 & 35 kW as HVO versions

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## 2 | Vehicle-specific additional parts

The product package for individual devices generally includes the heater itself, the fuel metering pump and the water pump. For retrofitting vehicles for which Eberspächer provides installation recommendations, a vehicle-specific installation kit (IK) and, if applicable, an air-conditioning kit are also required.

|                                   |                                                                                                                                                                                                                                                             |                                                                                       |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Heater                            | <ul style="list-style-type: none"> <li>• Heater</li> <li>• Water pump</li> <li>• Metering pump</li> </ul>                                                                                                                                                   |    |
| Vehicle-specific installation kit | <ul style="list-style-type: none"> <li>• Heater holder</li> <li>• Water hoses</li> <li>• Fuel lines</li> <li>• Cable harnesses</li> <li>• Combustion-air hose</li> <li>• Exhaust hose with silencer</li> <li>• Climate control kit if applicable</li> </ul> |    |
| EasyFan / A/C kit                 | <ul style="list-style-type: none"> <li>• Cable harness</li> <li>• Pre-assembled cable harness</li> <li>• Relay</li> <li>• IPCU (see also Service, options with IPCU, if there is no EasyFan / A/C kit)</li> </ul>                                           |  |
| Control unit                      | <ul style="list-style-type: none"> <li>• Easy Start Pro / Remote / Remote+ / EasyStart Web</li> </ul>                                                                                                                                                       |   |

Images are for illustrative purposes only

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## 2 | Universal installation kits

The following table shows the housing types and product packages of the various water heater models along with their corresponding installation kits. In contrast with individual devices, complete packages include the heater (incl. fuel metering and water pump) and universal installation kit. The universal installation kit includes a host of (vehicle independent) parts required for installation. In this case, additional vehicle-specific installation parts are required that are not listed in the respective installation recommendations. If Eberspächer provides no installation recommendation for a particular vehicle, you can still retrofit a pre-heater using a complete package (see also the next section, “Hydronic – selecting parts for retrofitting,” step 4B).

| Water heaters                       | Heater            | Individual device | Vehicle-spec. IK<br>A/C kit if applicable | Universal IK     | Universal IK<br>Recreational<br>vehicles * |
|-------------------------------------|-------------------|-------------------|-------------------------------------------|------------------|--------------------------------------------|
| Hydronic S3 Economy CS<br>(12 V) *  | 25 2992 05 00 00  |                   | x                                         | 25 2933 80 00 00 | 25 2652 82 00 00                           |
|                                     | 25 2993 05 00 00  |                   | x                                         |                  |                                            |
|                                     | 25 29994 05 00 00 |                   | x                                         |                  |                                            |
| Hydronic S3 Commercial<br>CS (24 V) | 25 3009 05 00 00  |                   |                                           | 25 2696 80 00 00 |                                            |
| Hydronic M2                         | 25 2470 05 00 00  | x                 |                                           | 25 2435 81 00 00 |                                            |
|                                     | 25 2471 05 00 00  | x                 |                                           |                  |                                            |
|                                     | 25 2434 05 00 00  | x                 |                                           |                  |                                            |
|                                     | 25 2435 05 00 00  | x                 |                                           |                  |                                            |
|                                     | 25 2472 05 00 00  | x                 |                                           |                  |                                            |
|                                     | 25 2473 05 00 00  | x                 |                                           |                  |                                            |

\* The heater may be used in combination with a mains connection (230 V/50 Hz) as used in camping or parking areas for motor homes or in marinas for boats, for example, only in combination with a special cable harness (order no.: 25 2652 82 11 00, see page 98). The cable harness is included in the universal installation kit for recreational vehicles (order no.: 25 2652 82 00 00).



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## 2 | Selecting parts for retrofitting in passenger cars

Installation of the Hydronic S3 water heater with 4 or 5 kW heating performance:

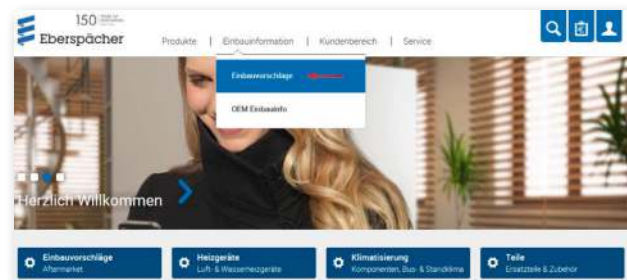
### 1 | Logging into the Partner Portal

Log into the Eberspächer Partner Portal with your personal access details (email and password):

<http://partner.eberspaecher.com>

### 2 | "Installation Information" pane

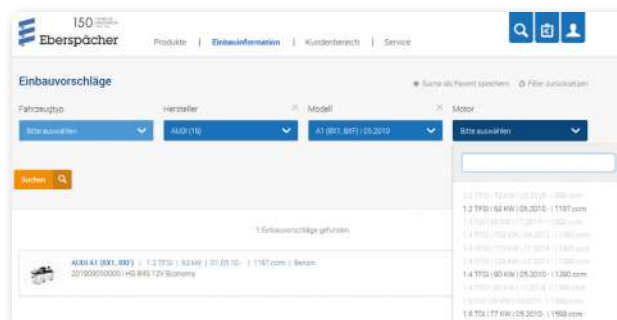
Next, select the "Installation Information/Installation Recommendations" tab.



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### 3 | Selecting your vehicle type

Using the drop-down menu, select the required vehicle and confirm with the "Search" button.

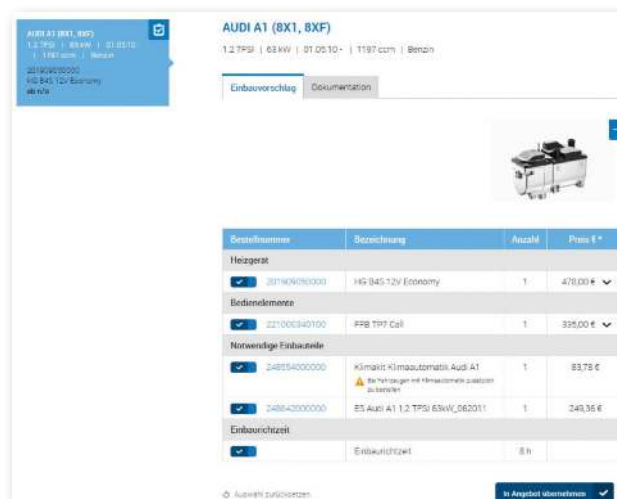


### 4A | There is an installation recommendation for the vehicle

If there is an existing retrofit installation recommendation for the vehicle, the vehicle model will be listed along with the recommended heater, including the price (excl. sales tax). Click on the vehicle in the list. The parts required for the installation are now displayed:

- Recommended **heater** (including water pump and fuel metering pump)
- **Control unit**
- **Vehicle-specific installation kit** including all parts required for the mechanical installation
- **A/C kit** if applicable (for models with automatic air conditioning)
- Additional installation parts if applicable
- Recommended **installation guide time**

\* Heaters and control units with a black arrow behind the price can be adapted if necessary by clicking the arrow and making a selection.



If you click the "Get estimate" button, this will take you to the estimates pane where you can create a quote.

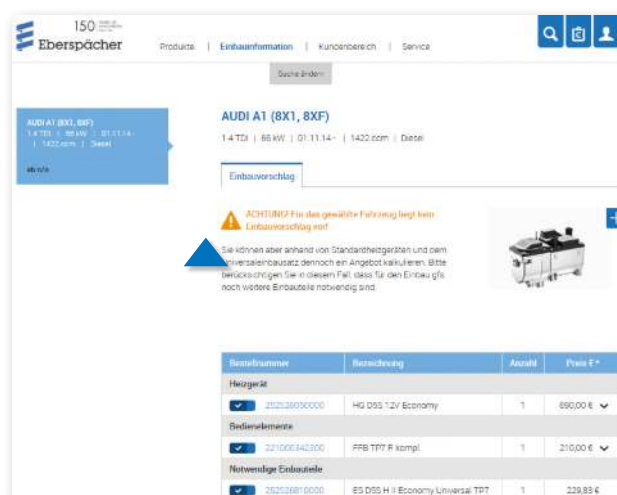
EXPERT TIP

### 4B | There is no installation recommendation for the vehicle

If there is no installation recommendation, you will see a note to this effect and the installation recommendation will be grayed out. However, it may still be possible to retrofit an Eberspächer pre-heater in the selected vehicle by using the universal installation kit. The required installation parts are displayed.

- **Recommended heater**
- **Control unit**
- **Required installation parts**
- **Installation guide time**

\* Heaters and control units with a black arrow behind the price can be adapted if necessary by clicking the arrow and making a selection.



## 2 | Selecting parts for retrofitting

### Installation of the Hydronic M2 water heater with 8 to 12 kW heating performance:

Installation parts for **Hydronic M2** heaters are usually heavily application dependent. Planning installation of these heaters requires not only the heater and universal installation kit but also, where applicable, additional installation parts that need to be determined during installation planning. Please see the section on "Accessories" for the corresponding additional parts. There is a host of heating options that can be used in parallel in convector and boiler installation, for example.

**Hydronic M2** heater installations generally require the following components:

- Hydronic M2 heater with 8 kW, 10 kW or 12 kW heating performance, 12 or 24 V
- Universal installation kit for Hydronic M2
- Control unit (of choice)
- Additional installation parts based on application if applicable (see also "Accessories" section)

See also the sections on "Universal installation kits," "Device selection" and "Control units."

### Installation of the Hydronic L3 water heater with 16 to 35 kW heating performance:

Installation parts for the **Hydronic L3** heaters are also heavily application-dependent. As a result there is no universal installation kit for these heaters.

Installation planning therefore requires installation parts in addition to the heater. These parts will be determined during the installation planning phase. Please see the section on "Accessories" for the corresponding additional parts. Again, for example, there is a host of heating options that can be used in parallel in convector and boiler installation.

The **24 kW, 30 kW and 35 kW** heater variants are available individually as well as in a compact version. To make heater installation easier, the compact version comes with the water pump and fuel filter and their installation parts pre-installed.

- Hydronic L3 16 kW, 24 kW, 30 kW or 35 kW heater as an individual device or compact version
- Additional parts for connecting the water circuit
- Additional parts for the fuel supply
- Additional parts for the exhaust system
- Control unit (of choice)

See also the sections on "Device selection" and "Control units."

Our **Technical Hotline** can provide you with advice and support on this:

**Phone: 03976 / 235 0 235**

(14 EUR ct./min. from a German landline telephone. Cellular network calls are significantly more expensive)

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## 2 | Optional add-ons

### Altitude kit\*:

Applicable to older heater generations such as the Hydronic 1, Hydronic 2 and Airtronic 1, and is required above around 1,500 meters above sea level. When the heater starts, the pressure sensor measures the atmospheric pressure cyclically and sends the measured values to the heater control unit. The control unit evaluates the measured values and, if required, adjusts the fuel feed in the metering pump to the current atmospheric pressure. It begins reducing fuel feed at around 1,400 m, which immediately starts to reduce heating performance by around 9% for every 1,000 m in altitude.

An altitude kit is no longer required for the new heater generations Hydronic S3 Commercial (CS), Airtronic 2 and Airtronic 3 models. A manual altitude function using CAN control units is possible for the Hydronic S3 Economy (CS). Heater operation up to altitudes of 3,000 m. The Hydronic S3 Economy (CL) does not support an altitude function.

The Hydronic M2 M10/M12 and L3 models also feature automatic altitude adjustment. The heater can be operated up to altitudes of 3,500 m.

Check the compatibility of the heater, pressure sensor and control unit before installation. (Please look for "H-Kit" on the heater identification label)

*Technical data for altitude kit (22 1000 33 22 00):*

*Max. permissible altitude: approx. 3,500 m*

*Measuring range: 600 hPa to 1,150 hPa*

*Nominal voltage: 12 / 24 V*

*Operating voltage: 8 to 32 V*

*Dimensions: 76 x 76 x 29 mm*

*Operating temperature: -40 °C to +85 °C*

### Identification labels:

1. In this case, on the right-hand side of the heater identification label you will see "H-Kit". If the label carries this mark, the heater is suitable for automatic altitude adjustment.

2. The heater's packaging (box) carries a sticker on which you will find the drawing number of the heater: The last two characters of this number (e.g. "0N") specify the heater status. Based on this information, the Technical Hotline can tell you whether the heater is compatible with the altitude kit. If the label is not legible, please contact the Technical Hotline.

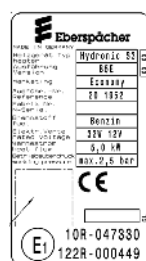


Fig.: Identification label



Fig.: Sticker on heater box

Technical Hotline: +49 (0) 1805 262626

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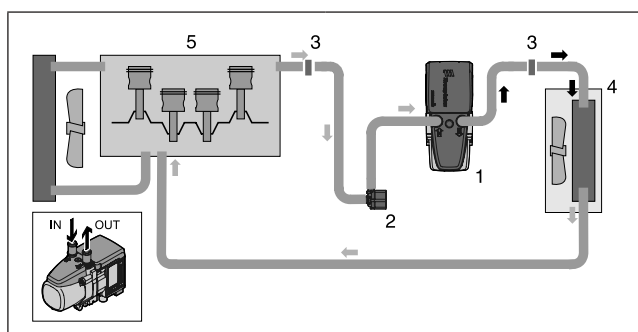
## 2 | Optional water circuits on a Hydronic S3 Economy, example

### "Inline integration" of cooling circuit:

Cut through the water feed hose from the vehicle engine to the vehicle convector. Connect the heater and water pump to the water feed hose using connection fittings and water hoses. Run and connect a water hose from the water pump pressure fitting to the heater water inlet fitting.

### Heating characteristic

When the heater is switched on, heat is initially conveyed only to the vehicle's engine via the vehicle convector. Once the coolant temperature reaches approx. 30 °C, the vehicle fan starts up and heat is supplied to the passenger compartment as well.



- |                    |                  |
|--------------------|------------------|
| 1 Heater           | 4 Convector      |
| 2 Water pump       | 5 Vehicle engine |
| 3 Connecting piece |                  |

### Cooling circuit with check valve:

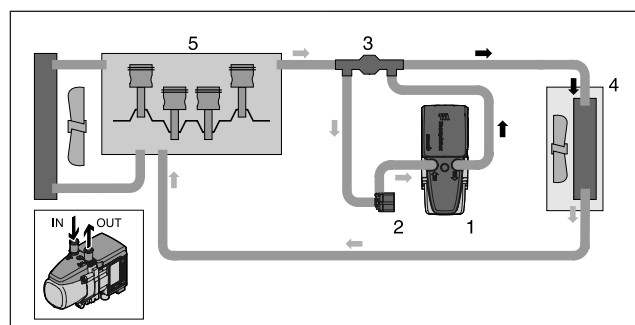
Cut through the water feed hose from vehicle engine to the vehicle convector, and insert the check valve. Connect the heater and the water pump to the check valve using water hoses. Run and connect a water hose from the water pump pressure fitting to the heater water inlet fitting.

### Heating characteristic

When the heater is switched on, heat is initially conveyed only to the vehicle's engine via the vehicle convector. Once the coolant temperature reaches approx. 30 °C, the vehicle fan starts up and heat is supplied to the passenger compartment as well.

### Advantage compared to in-line integration in the water circuit

No loss of performance on the vehicle heater when the heater is switched off.



- |               |                  |
|---------------|------------------|
| 1 Heater      | 4 Convector      |
| 2 Water pump  | 5 Vehicle engine |
| 3 Check valve |                  |

### **i** Note:

- The check valve must be ordered separately – see page 72 – 74. for the order number.

\* The heater may be used in combination with a mains connection (230 V/50 Hz) as used in camping or parking areas for motor homes or in marinas for boats, for example, only in combination with a special cable harness (order no.: 25 2652 82 11 00, see page 106). The cable harness is included in the universal installation kit for recreational vehicles (order no.: 25 2652 82 00 00).

Cooling circuit with combi valve:

Using the combi valve with five connections

If the water feed and return lines between the vehicle's engine and convector are installed separately in the engine compartment, the combi valve with five connections must be used along with a T-piece.

Using the combi valve with six connections

If the water feed and return lines between the vehicle's engine and convector are installed in parallel in the engine compartment, the combi valve with six connections can be used (without a T-piece).

Heating characteristic in pre-heating mode – small cooling circuit:

Initially the heat from the heater, at a coolant temperature of approximately 67 °C, is conveyed only to the vehicle convector, rapidly heating the vehicle interior.

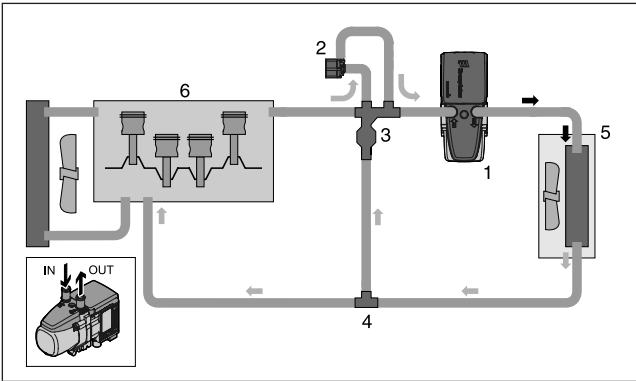
Once the coolant temperature reaches around 67 °C, some of the heat from the heater is also conveyed to the engine. This allows the engine to be pre-heated while preventing the "small cooling circuit" for interior heating from cooling too fast.

Heating characteristic in additional heating mode – large cooling circuit

When the vehicle's engine is operating, heat is distributed evenly between the convector and engine, making the warm-up phase even shorter and heating the vehicle interior.

Installing a combi valve with five connections:

Cut through the water feed hose from the vehicle engine to the vehicle convector, and install the combi valve. Cut through the water return hose from the vehicle convector to the vehicle engine, and insert the T-piece. Connect the heater and water pump to the combi valve and T-piece using water hoses as shown in the drawing.



- |                                  |                     |
|----------------------------------|---------------------|
| 1 Heater                         | 4 T-piece           |
| 2 Water pump                     | 5 Vehicle convector |
| 3 Combi valve (five connections) | 6 Vehicle engine    |

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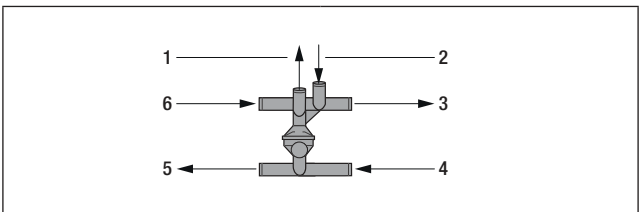
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## 2 | Optional water circuits on a Hydronic S3 Economy, example

### Installing a combi valve with six connections:

Cut through the water feed and return hoses between the vehicle engine and vehicle convector, and install the combi valve. Connect the heater and water pump to the combi valve using water hoses as shown in the drawing.



- |                   |                          |
|-------------------|--------------------------|
| 1 To water pump   | 4 From vehicle convector |
| 2 From water pump | 5 To vehicle engine      |
| 3 To heater       | 6 From vehicle engine    |

### Cooling circuit with two check valves:

#### To pre-heat the vehicle interior only (vehicle engine disengaged)

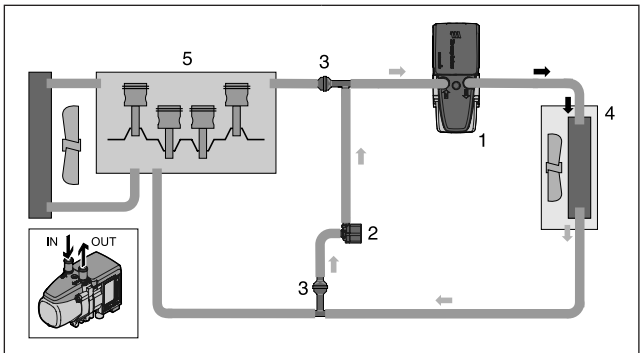
Cut through the water feed and return hoses between the vehicle engine and vehicle convector and insert one check valve in each hose. It is essential to observe the flow direction of the check valves.

Install the heater in the water feed hose between the check valve and the vehicle convector.

Connect the water pump to the check valve using water hoses.

### Heating characteristic

When the heater is switched on, the heat is conveyed only to the vehicle's convector. Once the coolant temperature reaches approx. 30 °C, the vehicle fan starts up and the heat is supplied exclusively to the passenger compartment.



- |                            |                     |
|----------------------------|---------------------|
| 1 Heater                   | 4 Vehicle convector |
| 2 Water pump               | 5 Vehicle engine    |
| 3 T-piece with check valve |                     |

## 2 | Hydronic S3 optional add-ons – fuel supply

### Diesel:

- Hydronic S3 Economy with admission-pressure-resistant metering pump
- Advantage: easy to connect to the vehicle's fuel system, speeding up installation
- Prerequisite: fuel pressure < 2 bar with diesel, no check valve on the tank connection, return line ends just above the tank floor

**Please note!** The following version of the Hydronic S3 Economy includes the admission-pressure-resistant metering pump:

D4E 12 V: 25 2995 05 00 00

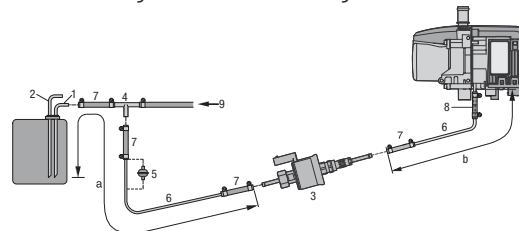
D5E 12 V: 25 2994 05 00 00

### Gasoline:

- Gasoline applications with an admission pressure of > 0.2 bar still require the pressure reducer

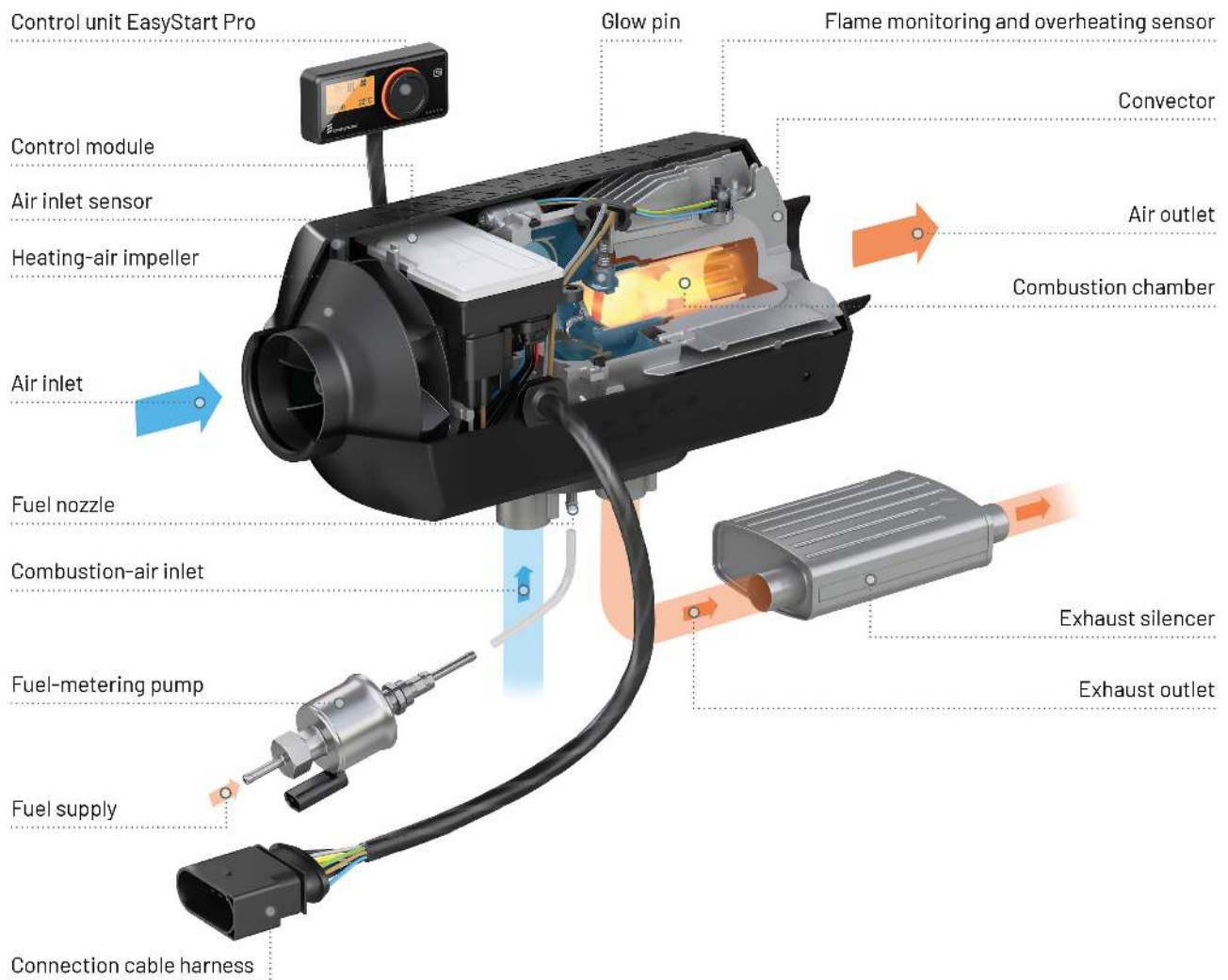
**Please note!** For fuel lines pressurized at 2.0 bar to max. 4.0 bar, use the pressure reducer (order no. 22 1000 20 08 00) or a separate tank connection.

Fuel is extracted via a T-piece in the fuel return line from the vehicle engine to the tank fitting



- |                                                                                             |                                                        |                                                               |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------|
| 1. Fuel return line from the vehicle's tank fitting                                         | 4. T-piece                                             | 9. From vehicle engine to tank fitting                        |
| 2. Fuel supply line from vehicle's tank fitting                                             | 5. Fuel filter – required only for contaminated fuel   | <b>Permissible line lengths on suction side: a = max. 2 m</b> |
| 3. Metering pump (admission pressure resistant up to 2.0 bar) identified with a green label | 6. Fuel pipe, 4 x 1 (di = Ø 2 mm, blue)                | <b>Pressure side: b = max. 6 m</b>                            |
|                                                                                             | 7. Fuel hose 3.5 x 3 (di Ø 3.5 mm), approx. 50 mm long |                                                               |
|                                                                                             | 8. Adapter (Ø 4.5 / 3.5 mm)                            |                                                               |

### 3 | Airtronic 3: technology



#### Airtronic 3 functions:

- Combustion air is conveyed to the combustion chamber by the fan motor and impeller.
- Fuel is drawn from the vehicle's tank.
- Fuel is conveyed to the combustion chamber by the metering pump.
- The glow pin vaporizes this fuel as it enters the combustion chamber and creates a combustible fuel-air mix with the combustion air.
- The resulting flame formation switches off the glow pin, transfers the heat to the heating air via the convactor, and diverts exhaust gas via the exhaust silencer.
- The fan motor and heating-air impeller convey cool air to the heater, where it is warmed by the convactor and then blown into the vehicle interior.



## Eberspächer Airtronic

|                                      |                                                   |                        |                                                |
|--------------------------------------|---------------------------------------------------|------------------------|------------------------------------------------|
| Heater                               | Airtronic S3 Commercial                           |                        |                                                |
| Product package                      | Heater, metering pump                             |                        |                                                |
| Techn. designation                   | Airtronic S3 D2L – 12V                            | Airtronic S3 D2L – 24V | Airtronic S3 B2L – 12V                         |
| Order no. for heater                 | 25 2953 05 0000                                   | 25 2954 05 0000        | 20 2029 05 0000                                |
| Fuel                                 | Diesel fuel – commercially available (DIN EN 590) |                        | Gasoline – commercially available (DIN EN 590) |
| Voltage V                            | 12                                                | 24                     | 12                                             |
| Heating medium                       | Air                                               |                        |                                                |
| Control/heat settings                | Off/stepless: min.-max.                           |                        |                                                |
| Heating performance W                | – / 850 / 2,200                                   |                        | – / 1,000 / 2,000                              |
| Fuel consumption l/h                 | – / 0.1 / 0.27                                    |                        | – / 0.14 / 0.26                                |
| Elec. power consumption, operation W | 4 / 6 / 27                                        | 7 / 9 / 28             | 4 / 11 / 26                                    |
| Elec. power consumption, start W     | ≤ 80                                              | ≤ 90                   | ≤ 80                                           |
| Air throughput w/o backpressure kg/h | 20 / 50 / 105                                     |                        | 20 / 65 / 100                                  |
| Lower voltage limit V                | Approx. 10.5                                      | Approx. 21             | Approx. 10.5                                   |
| Upper voltage limit V                | Approx. 16                                        | Approx. 32             | Approx. 16                                     |
| Interference suppression             | Interference suppression class 5 (DIN EN 55025)   |                        |                                                |
| Dimensions L x W x H mm              | 310 x 115 x 122                                   |                        |                                                |
| Weight empty kg                      | Approx. 2.5                                       |                        |                                                |
| Ventilation mode                     | Available                                         |                        |                                                |



## Eberspächer Airtronic

|                                      |                                                   |                      |                           |                                                |                               |
|--------------------------------------|---------------------------------------------------|----------------------|---------------------------|------------------------------------------------|-------------------------------|
| Heater                               | Airtronic M3 Commercial                           |                      | Airtronic M3 Recreational | Airtronic M3 Commercial                        | Airtronic M3 Recreational B4R |
| Product package                      | Heater, metering pump                             |                      |                           |                                                |                               |
| Techn. designation                   | Airtronic D4L – 12 V                              | Airtronic D4L – 24 V | Airtronic D4R – 12 V      | Airtronic B4L – 12 V                           | Airtronic B4R – 12 V          |
| Order no. for heater                 | 25 2955 05 0000                                   | 25 2956 05 0000      | 25 2957 05 0000           | 20 2030 05 0000                                | 20 2031 05 0000               |
| Fuel                                 | Diesel fuel – commercially available (DIN EN 590) |                      |                           | Gasoline – commercially available (DIN EN 590) |                               |
| Voltage V                            | 12                                                | 24                   | 12                        | 12                                             |                               |
| Heating medium                       | Air                                               |                      |                           |                                                |                               |
| Control/heat settings                | Off/stepless: min.–max.                           |                      |                           |                                                |                               |
| Heating performance W                | – / 1,050 / 4,000                                 |                      |                           | – / 1,300 / 4,000                              |                               |
| Fuel consumption l/h                 | – / 0.12 / 0.49                                   |                      |                           | – / 0.17 / 0.55                                |                               |
| Elec. power consumption, operation W | 4 / 6 / 37                                        | 7 / 9 / 39           | 5 / 7 / 53                | 4 / 8 / 38                                     | 5 / 10 / 54                   |
| Elec. power consumption, start W     | ≤ 105                                             | ≤ 100                | ≤ 105                     |                                                | ≤ 110                         |
| Air throughput w/o backpressure kg/h | 35 / 40 / 185                                     |                      | 37 / 45 / 190             | 24 / 85 / 180                                  | 37 / 85 / 190                 |
| Lower voltage limit V                | Approx. 10.5                                      | Approx. 21           | Approx. 10.5              |                                                |                               |
| Upper voltage limit V                | Approx. 16                                        | Approx. 32           | Approx. 16                |                                                |                               |
| Interference suppression             | Interference suppression class 5 (DIN EN 55025)   |                      |                           |                                                |                               |
| Dimensions L x W x H mm              | 376 x 140 x 150                                   |                      | 371 x 140 x 150           | 376 x 140 x 150                                |                               |
| Weight empty kg                      | 4.5                                               |                      |                           |                                                |                               |
| Ventilation mode                     | Available                                         |                      |                           |                                                |                               |

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## Eberspächer Airtronic

|                                    |                                                            |                          |                 |
|------------------------------------|------------------------------------------------------------|--------------------------|-----------------|
| Heater                             | Airtronic L3                                               |                          |                 |
| Product package                    | Heater, metering pump                                      |                          |                 |
| Techn. designation                 | Airtronic L3 D6L                                           |                          |                 |
| Order no. for heater               | 25 2959 05 0000                                            |                          | 25 2960 05 0000 |
| Fuel                               | Diesel                                                     |                          |                 |
| Voltage                            | V                                                          | 12                       | 24              |
| Heating medium                     | Air                                                        |                          |                 |
| Control/heat settings              | Off/stepless: min.-max.                                    |                          |                 |
| Heating performance                | W                                                          | - / 1,500 / 6,000        |                 |
| Fuel consumption                   | l/h                                                        | - / 0.16 / 0.74          |                 |
| Elec. power consumption, operation | W                                                          | 7 / 90                   | 11 / 95         |
| Elec. power consumption, start     | W                                                          | ≤ 90                     | ≤ 85            |
| Air throughput w/o backpressure    | kg/h                                                       | 60 / 80 / 285            |                 |
| Lower voltage limit                | V                                                          | Approx. 10.5 or 21.4     |                 |
| Upper voltage limit                | V                                                          | Approx. 16 or approx. 32 |                 |
| Interference suppression           | Interference suppression class 5 according to DIN EN 55025 |                          |                 |
| Dimensions L x W x H               | mm                                                         | 438 x 160 x 170          |                 |
| Weight empty                       | kg                                                         | Approx. 7                |                 |
| Ventilation mode                   | Available                                                  |                          |                 |



## Eberspächer Airtronic

|                                    |      |                                                            |
|------------------------------------|------|------------------------------------------------------------|
| Heater                             |      | Airtronic XL3                                              |
| Product package                    |      | Heater, metering pump                                      |
| Techn. designation                 |      | Airtronic XL3 D8L                                          |
| Order no. for heater               |      | 25 3020 05 0000                                            |
| Fuel                               |      | Diesel                                                     |
| Voltage                            | V    | 24                                                         |
| Heating medium                     |      | Air                                                        |
| Control/heat settings              |      | Off/stepless: min.-max.                                    |
| Heating performance                | W    | - / 2,000 / 7,600                                          |
| Fuel consumption                   | l/h  | - / 0.23 / 1.01                                            |
| Elec. power consumption, operation | W    | 8 / 130                                                    |
| Elec. power consumption, start     | W    | ≤ 90                                                       |
| Air throughput w/o backpressure    | kg/h | 60 / 120 / 300                                             |
| Lower voltage limit                | V    | Approx. 21.4                                               |
| Upper voltage limit                | V    | Approx. 32                                                 |
| Interference suppression           |      | Interference suppression class 5 according to DIN EN 55025 |
| Dimensions L x W x H               | mm   | 493 x 160 x 170                                            |
| Weight empty                       | kg   | Approx. 8.5                                                |
| Ventilation mode                   |      | Available                                                  |

### 3 | Selecting the air heater

The heating performance information provided refers to heating the interior of a cold vehicle to around 20 °C in cold outside temperatures. If the heater only needs to maintain the existing temperature of the interior, less heating performance is required. The heating performance values are only guide values. The exact heating requirement also depends on other environmental conditions (e.g. wind, materials, cabin walls, heating-air ducting, etc.).

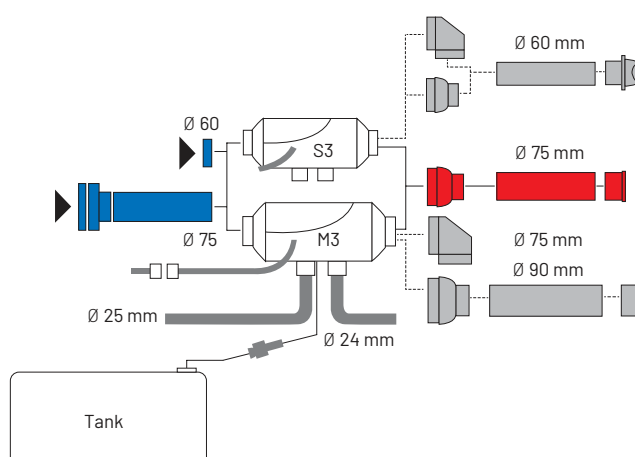
Guide values for required heating performance

| Example        | Volume of interior     | Outside temperature |                |        |
|----------------|------------------------|---------------------|----------------|--------|
|                |                        | < -15 °C            | -15 °C to 0 °C | > 0 °C |
| Truck cabin    | < 8 m <sup>3</sup>     | 4 kW                | 4 kW (2 kW)*   | 2 kW   |
| Small bus      | 8–12 m <sup>3</sup>    | 5 kW (4 kW)*        | 4 kW*          | 2 kW   |
| Motor home/van | 12 – 20 m <sup>3</sup> | 8 kW                | 4 kW (5 kW)*   | 4 kW   |

\* Values (referring to heat-insulated cabins/vehicles)

#### Selecting the device and the respective advantages:

- **Airtronic S3 Commercial:** the smallest air heater on the market, advantageous in cramped installation spaces. Air ducting with 60 mm or 75 mm air hoses possible. Performance 2,200 Watt (Gasoline 2,000 Watt).
- **Airtronic M3 Commercial:** output 4,000 W, air ducting with 75 mm or 90 mm air hoses possible, for vans and suitably sized trucks; offers the advantage of high power within a reasonable installation space, wide range of applications from 1,050 W (gasoline 1,300 W) to 4,000 W.
- **Airtronic M3 Recreational:** for applications requiring a higher air throughput, e.g. for long, complex heating-air ducting in campers/motor homes, boats or ambulances. Performance 4,000 Watt
- **Airtronic L3 Commercial:** Performance 6,000 Watt, for vans, boats and special applications
- **Airtronic XL3 Commercial:** Performance 8,000 Watt, for load and cargo compartment heating as well as boats



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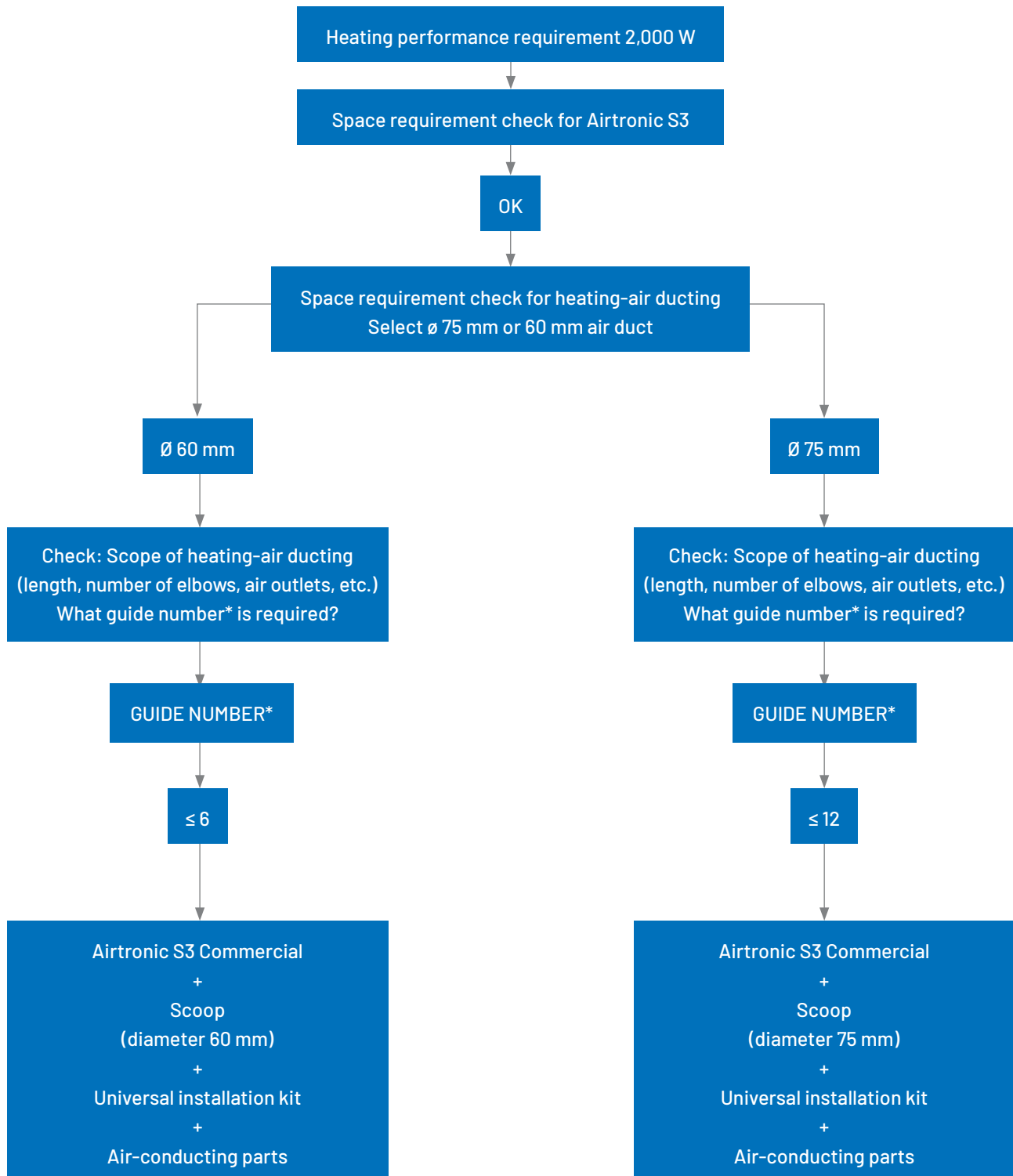
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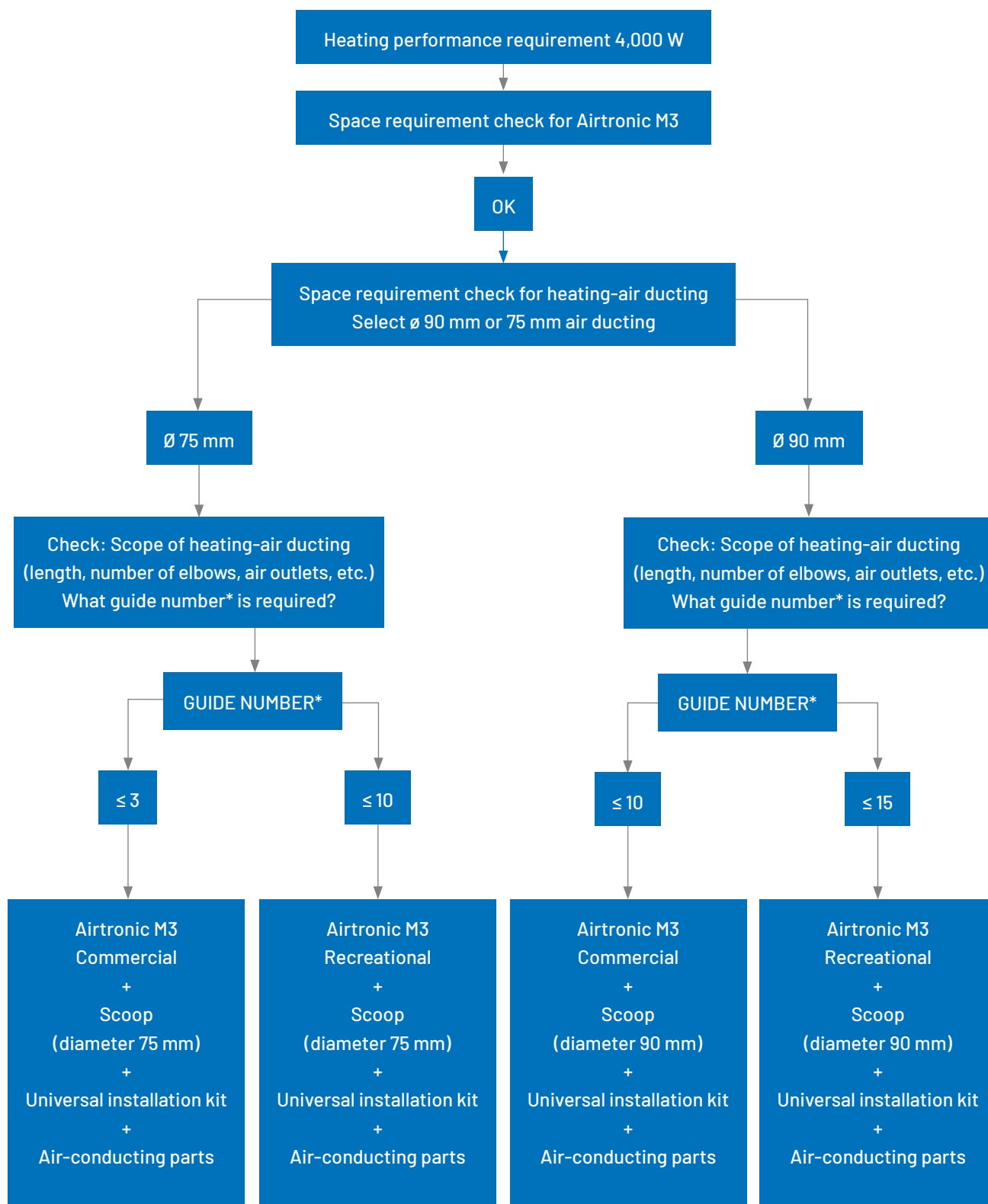
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### 3 | Selecting the air heater



\* Guide number: Each component of the heating-air ducting (air hose, elbows, air outlets, etc.) has a line guide number. The sum of these line guide numbers must not be greater than the guide number for the heater, otherwise the heater could malfunction – e.g. overheating. The higher the guide number for the heater, the more heating-air ducting components may be connected. Please refer to Eberspächer's Accessories catalog for a detailed explanation of guide numbers.



\* Guide number: Each component of the heating-air ducting (air hose, elbows, air outlets, etc.) has a line guide number. The sum of these line guide numbers must not be greater than the guide number for the heater, otherwise the heater could malfunction – e.g. overheating. The higher the guide number for the heater, the more heating-air ducting components may be connected. Please refer to Eberspächer's Accessories catalog for a detailed explanation of guide numbers.

### 3 | Installation kits

#### General notes on heating-air ducting:

Heating-air-conducting parts can also be mounted onto the heater. Each part has a line guide number that indicates the reduction in the heating-air throughput. In order to give you the opportunity to check that the installation you have planned does not reduce the heating-air throughput to an impermissible level, we have calculated a heater guide number for each heater and a line guide number for the heating-air-conducting parts; see information in the guide number tables:

0 = no temperature increase,

– = no line guide number.

The total of the line guide numbers of the heating-air-conducting parts connected to the heater must not be greater than the heater guide number, as otherwise the air outlet temperature would be impermissibly high, the heat distribution would be uneven and the overheating sensor would respond. If the total of the line guide numbers is greater than the heater guide number, the total can be reduced by selecting a larger diameter for the air ducts or switching from a one-duct to a two-duct system.

#### 1-duct means:

One heating-air duct leads to or from the heater. The line guide numbers under "1-duct" apply.

#### 2-duct means:

Behind the heater, the heating-air line divides into two ducts. Up until this branch, the line guide numbers specified under "1-duct" apply, from the branch onwards the line guide numbers under "2-duct" apply. Note the information on air ducting and calculating the total of the line guide numbers starting on page 40.

When using two air ducts or multiple air outlets, at least one of the ducts must be permanently open.

The branch that can be closed must not be taken into account when calculating the total of the line guide numbers.

#### Rule of thumb:

Double the cross-section or two identical parts installed in parallel =

1/4 of the guide number.

Example:

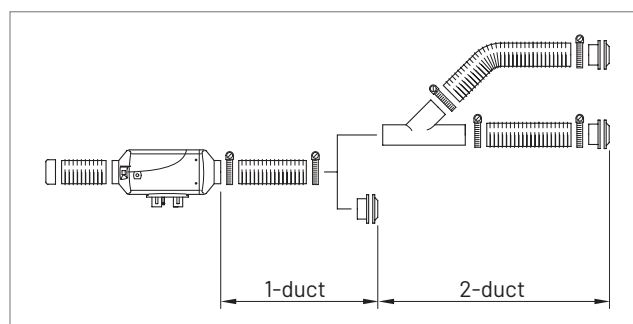
Hose Ø 60,

Cross-section area  $A = 28.27 \text{ cm}^2$ , guide number 1.0

Hose Ø 75,

Cross-section area  $A = 44.2 \text{ cm}^2$ , guide number 0.25

With smooth welded pipes, the line guide number is only half of the flexible hose with the same diameter (i.e. double pipe length).



#### With innovative air flow regulating elements:

In order to counteract the non-uniform distribution of warm air in multi-duct systems with several air outlets, we have developed innovative air flow regulating elements that are simply clipped into the hose connection fitting of the air outlet. These regulating elements, which are patented, reduce the flow cross section as needed and thereby decrease the emerging air flow. Available for fitting diameters 60, 75 and 90 mm.



The new range of air outlets:

Particularly colorfast and durable even at high temperatures, the covers of our completely re-designed range of air outlets are impressive, featuring a streamlined and high-quality design that allows for a variety of flow directions. They are available in white and black, allowing seamless integration into any interior.

- Clear, simple system thanks to the modular design.
- Plug-in connections between the cover and fitting or fitting and air hose for easy assembly.
- Fittings available in 50, 60, 75 and 90 mm.

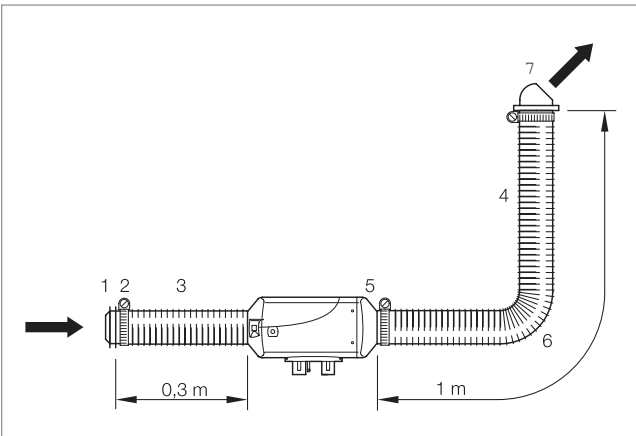


Example calculation for heating-air ducting:

Airtronic: Heater guide number = 6

| NO.                             | DESIGNATION                 | LINE GUIDE NUMBER |
|---------------------------------|-----------------------------|-------------------|
| 1                               | Protective grille           | 0                 |
| 2                               | Connectors Ø 60             | 0                 |
| 3                               | Flex. pipe Ø 60, 0.3 m long | 0.3               |
| 4                               | Flex. pipe Ø 60, 1.0 m long | 1.0               |
| 5                               | Straight scoop Ø 60         | 0                 |
| 6                               | 1 x 90° elbow, flex. pipe   | 0.6               |
| 7                               | Rotating air outlet         | 1.4               |
| Total of the line guide numbers |                             | 3.3               |

Total of line guide numbers, 3.3, does not exceed the heater guide number 6, so the installation is permissible.

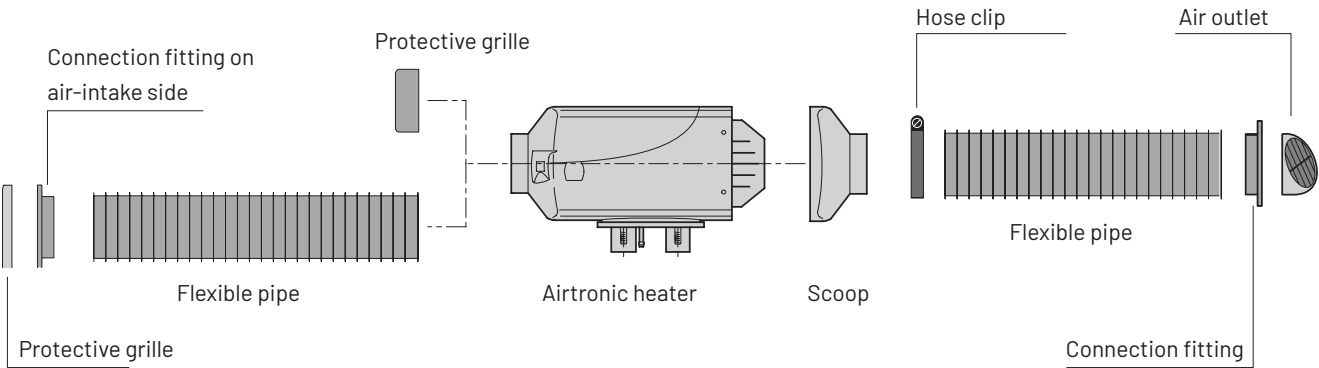


Overview of air guide numbers Airtronic 2 / Airtronic 3

| Air heater                                                             | Scoop        | Air guide number |
|------------------------------------------------------------------------|--------------|------------------|
| Airtronic S3 Commercial B2L/D2L<br>Airtronic S2 D2L                    | Diameter 60  | 6                |
|                                                                        | Diameter 75  | 12               |
|                                                                        | Ball 60      | 1.2              |
|                                                                        | Ball 75      | 6                |
| Airtronic M3 Commercial D4L/B4L<br>Airtronic M2 Commercial D4L/B4L     | Diameter 75  | 3                |
|                                                                        | Diameter 90  | 10               |
|                                                                        | Ball 75*     | 1                |
|                                                                        | Ball 90*     | 5                |
| Airtronic M3 Recreational D4R/B4R<br>Airtronic M2 Recreational D4R/B4R | Diameter 75  | 3                |
|                                                                        | Diameter 90  | 15               |
|                                                                        | Ball 75      | 8                |
|                                                                        | Ball 90      | 10               |
| Airtronic L3 Commercial D6L                                            | Diameter 90  | 10               |
| Airtronic L3 Commercial D6L                                            | Ball 90      | 2                |
| Airtronic XL3 Commercial D8L                                           | Diameter 100 | 10               |

\* Operation with Ball for Airtronic M2 not possible

3 | Parts for Airtronic 3 installation



Installation with 60 mm parts

| Heater      | Heater order no. | Order no. Universal installation kit | Protective grille 60 mm | Air scoop 60 mm  | Flexible pipe 60 mm |
|-------------|------------------|--------------------------------------|-------------------------|------------------|---------------------|
| AS3 B2L 12V | 20 2029 05 0000  | -                                    |                         |                  |                     |
| AS3 D2L 12V | 25 2953 05 0000  | 25 2720 80 00 00                     | 25 1688 80 06 00        | 22 1000 01 00 16 | 10 2114 31 00 00    |
| AS3 D2L 24V | 25 2954 05 0000  |                                      |                         |                  |                     |

Installation with 75 mm or 90 mm parts

| Heater       | Heater order no. | Order no. Universal installation kit | Protective grille 75 mm | Scoop 75 mm      | Flexible pipe 75 mm | Scoop 90 mm      | Flexible pipe 90 mm | Scoop 100 mm    |
|--------------|------------------|--------------------------------------|-------------------------|------------------|---------------------|------------------|---------------------|-----------------|
| AS3 B2L 12V  | 20 2029 05 0000  | 20 2029 80 0000                      |                         |                  |                     |                  |                     |                 |
| AS3 D2L 12V  | 25 2953 05 0000  | 25 2720 80 00 00                     | -                       | 22 1000 01 00 17 |                     | -                | -                   | -               |
| AS3 D2L 24V  | 25 2954 05 0000  |                                      |                         |                  |                     |                  |                     |                 |
| AM3 D4L 12V  | 25 2955 05 0000  |                                      |                         |                  |                     |                  |                     |                 |
| AM3 D4L 24V  | 25 2956 05 0000  |                                      |                         |                  |                     |                  |                     |                 |
| AM3 B4L 12V  | 20 2030 05 0000  |                                      |                         |                  | 10 2114 34 00 00    | 22 1000 01 00 19 | 10 2114 37 00 00    |                 |
| AM3 D4R 12V  | 25 2957 05 0000  | 25 2720 80 00 00                     | 25 1552 05 01 00        | 22 1000 01 00 18 |                     |                  |                     |                 |
| AM3 D4R 24V  | 25 2958 05 0000  |                                      |                         |                  |                     |                  |                     |                 |
| AM3 B4R 12V  | 20 2031 05 0000  |                                      |                         |                  |                     |                  |                     |                 |
| AL3 D6L 12V  | 25 2959 05 0000  |                                      |                         |                  |                     | 22 1000 01 0086  |                     |                 |
| AL3 D6L 24V  | 25 2960 05 0000  | 25 3020 80 0000                      |                         |                  |                     |                  |                     |                 |
| AXL3 D8L 24V | 25 3020 05 0000  |                                      | -                       | -                | -                   | -                | -                   | 22 1000 01 0087 |

The universal installation kit is required for all Airtronic 3 heaters.

The following items must be ordered in addition to the parts listed in the table (air scoop, installation kit, grille and flexible pipe):

- Fuel extractor
- Hose clip
- Fittings: Ø 50/60/75/90 mm depending on air ducting
- Air outlets: Ø 50/60 depending on air ducting, or for 75/90 mm

The following items are additionally required depending on the customer application:

- Control unit
- Fuel kit

# Air outlet



|                | Flat air outlet 0° | Flat air outlet 30° |
|----------------|--------------------|---------------------|
|                | Order number       | Order number        |
| 75/90 mm black | 22 1000 01 0048    | 22 1000 01 0052     |
| 75/90 mm white | 22 1000 01 0049    | 22 1000 01 0053     |
| 50/60 mm black | 22 1000 01 0040    | 22 1000 01 0044     |
| 50/60 mm white | 22 1000 01 0041    | 22 1000 01 0045     |



|                | Flat air outlet, closable | Upright air outlet 30° |
|----------------|---------------------------|------------------------|
|                | Order number              | Order number           |
| 75/90 mm black | 22 1000 01 0076           | 22 1000 01 0060        |
| 75/90 mm white | 22 1000 01 0077           | 22 1000 01 0061        |
| 50/60 mm black | 22 1000 01 0072           | 22 1000 01 0056        |
| 50/60 mm white | 22 1000 01 0073           | 22 1000 01 0057        |



|                             | Upright air outlet 90° | Fitting                                                                       |
|-----------------------------|------------------------|-------------------------------------------------------------------------------|
|                             | Order number           | Order number                                                                  |
| 75/90 mm black              | 22 1000 01 0068        | -                                                                             |
| 75/90 mm white              | 22 1000 01 0069        | -                                                                             |
| 50/60 mm black              | 22 1000 01 0064        | -                                                                             |
| 50/60 mm white              | 22 1000 01 0065        | -                                                                             |
| Black Ø 90 mm               | -                      | 22 1000 01 0037                                                               |
| Black Ø 75 mm               | -                      | 22 1000 01 0036                                                               |
| Black Ø 60 mm               | -                      | 22 1000 01 0035                                                               |
| Black Ø 50 mm               | -                      | 22 1000 01 0034                                                               |
| Air flow regulating element |                        | Inner diameter of fitting can be reduced with the air flow regulating element |
| Ø 75 mm                     | 22 1000 01 0080        |                                                                               |
| Ø 90 mm                     | 22 1000 01 0081        |                                                                               |

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**Heater** – scope of supply includes:

|   |                                            |
|---|--------------------------------------------|
| 1 | Heizgerät                                  |
| 2 | Metering pump (ill. not for Airtronic XL3) |

**Universal installation kit for Airtronic S3/M3/L3** (25.2720.80.0000):

|    |                                                  |
|----|--------------------------------------------------|
| 5  | Lead harness, plus / minus (included in Item 22) |
| 6  | Lead harness, operation (included in Item 22)    |
| 7  | Flexible exhaust pipe, length 900 mm             |
| 8  | Combustion air hose, 1 m long                    |
| 9  | Cable tape (2 x 10 pieces)                       |
| 10 | Bracket, metering pump                           |
| 12 | Pipe, 4 x 1.0 – 7.5 m long                       |
| 21 | Exhaust silencer                                 |
| 22 | Cable harness, heater                            |
| 25 | Flexible exhaust pipe with end piece             |

**To be ordered separately:**

|    |                                         |
|----|-----------------------------------------|
| 4  | Fuel remover                            |
| 13 | Hose clip                               |
| 14 | Air outlet 30°, Ø 75 mm / Ø 90 mm       |
| 15 | Connection socket, Ø 75 mm / Ø 90 mm    |
| 16 | Air outlet, high 30°, Ø 60 / 75 / 90 mm |
| 17 | Connection socket, Ø 60 mm              |
| 18 | Grille                                  |
| 19 | Hood                                    |
| 20 | Flexible pipe                           |
| 23 | Control unit EasyStart Pro              |

**Airtronic S3 B2L installation kit** (20.2029.80.0000):

|    |                                                  |
|----|--------------------------------------------------|
| 5  | Lead harness, plus / minus (included in Item 22) |
| 6  | Lead harness, operation (included in Item 22)    |
| 7  | Flexible exhaust pipe, length 900 mm             |
| 8  | Combustion air hose, 1 m long                    |
| 9  | Cable tape (2 x 10 pieces)                       |
| 10 | Bracket, metering pump                           |
| 11 | Pipe, 4 x 1 – 2 m long                           |
| 12 | Pipe, 4 x 1.25 – 4 m long                        |
| 21 | Exhaust silencer                                 |
| 22 | Cable harness, heater                            |
| 25 | Flexible exhaust pipe with end piece             |

**Airtronic XL3 D8L installation kit** (25.3020.80.0000):

|    |                                                                                            |
|----|--------------------------------------------------------------------------------------------|
| 5  | Lead harness, plus / minus (included in Item 22)                                           |
| 6  | Lead harness, operation (included in Item 22)                                              |
| 7  | Flexible exhaust pipe, length 900 mm                                                       |
| 8  | Combustion air hose, 1 m long                                                              |
| 9  | Cable tape (2 x 10 pieces)                                                                 |
| 10 | Bracket, metering pump                                                                     |
| 11 | Pipe, intake side: 4 x 1; di = 4; 2 m long<br>Pipe, pressure side: 4 x 1; di = 2; 2 m long |
| 21 | Exhaust silencer                                                                           |
| 22 | Cable harness, heater                                                                      |
| 25 | Flexible exhaust pipe with end piece                                                       |

\* The image on page 38 differs from the Airtronic XL3 installation components in some cases, including the exhaust system, combustion-air intake, and metering pump with adapter cable.

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### 3 | Guide numbers

#### Airtronic S3 Commercial

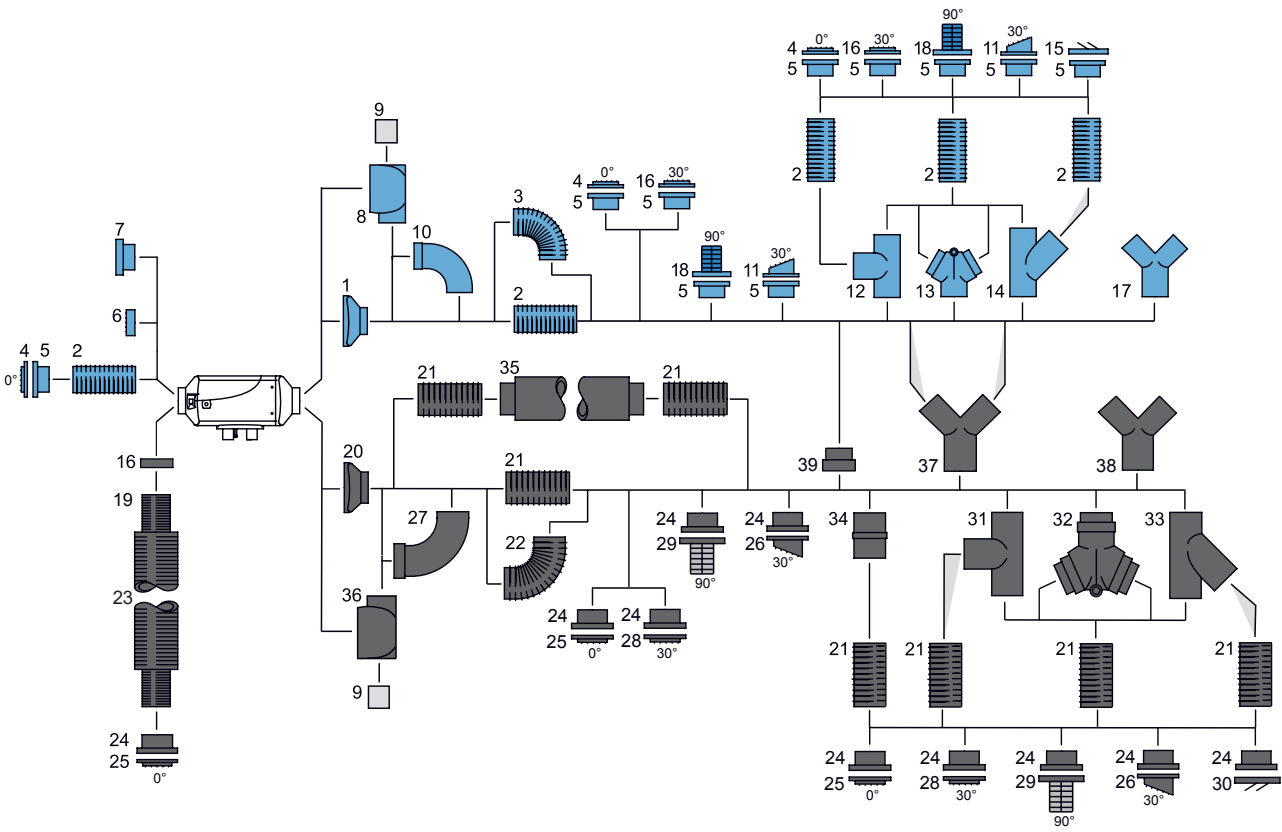
Heater guide number **6** – with air scoop Ø 60

Heater guide number **12** – with air scoop Ø 75

**Please note:**

For an explanation of one- and two-duct heating-air ducting, see page 31.

The drawing shows the application options for the main air-conducting parts. There are no installation examples.



|                                                                                     |           |
|-------------------------------------------------------------------------------------|-----------|
|  | = Ø 50 mm |
|  | = Ø 60 mm |
|  | = Ø 75 mm |

| No.                                                                 | Designation (dimensions in mm)                                                     | Line guide number<br>1-duct | Line guide number<br>2-duct | see ser. no., section 8<br>„Air-conducting parts“ |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------|-----------------------------|---------------------------------------------------|
| <b>Heating-air ducting with scoop Ø 60</b> (heater guide number 6)  |                                                                                    |                             |                             |                                                   |
| 1                                                                   | Scoop, Ø 60                                                                        | 0                           | 0                           | 21                                                |
| 2                                                                   | Flex. pipe Ø 60 per m                                                              | 1.0                         | 0.25                        | 1                                                 |
| 3                                                                   | 90° elbow, flexible pipe                                                           | 0.6                         | –                           | –                                                 |
| 4                                                                   | Flat air outlet 0° with fitting Ø 60                                               | 0.5                         | 0.1                         | 13                                                |
| 5                                                                   | Fitting Ø 60                                                                       | 0                           | 0                           | 16                                                |
| 6                                                                   | Heater grille, Ø 60                                                                | 0                           | –                           | 17                                                |
| 7                                                                   | Air filter, Ø 60                                                                   | 1.6                         | –                           | 5                                                 |
| 8                                                                   | Ball-shaped scoop Ø 60                                                             | 4.8                         | –                           | 32                                                |
| 9                                                                   | Connection fitting Ø 50 for ball-shaped scoop Ø 60 Ø 75                            | 4.5                         | –                           | 31                                                |
| 10                                                                  | Pipe elbow 90° Ø 60                                                                | 4                           | –                           | 33                                                |
| 11                                                                  | Upright air outlet 30° with fitting Ø 60                                           | 3.2                         | 0.8                         | 10                                                |
| 12                                                                  | T-junction                                                                         | 1.4                         | 0.25                        | 35                                                |
| 13                                                                  | Butterfly valve Ø 60/60/60 with "right/left" flap position                         | –                           | 0.6                         | 40                                                |
| 14                                                                  | Y-junction                                                                         | –                           | 1                           | 43                                                |
| 15                                                                  | Closable air outlet Ø 50/60                                                        | –                           | –                           | 12                                                |
| 16                                                                  | Flat air outlet 30° Ø 50/60                                                        | 0.7                         | 0.2                         | 11                                                |
| 17                                                                  | Symmetrical metal Y-junction Ø 60/50/50                                            | –                           | 0.3                         | 42                                                |
| 18                                                                  | Upright air outlet 90° Ø 50/60                                                     | 3.2                         | n/a                         | 14                                                |
| <b>Heating-air ducting with scoop Ø 75</b> (heater guide number 12) |                                                                                    |                             |                             |                                                   |
| 19                                                                  | Adapter                                                                            |                             |                             |                                                   |
| 20                                                                  | Scoop Ø 75                                                                         | 0                           | 0                           | 21                                                |
| 21                                                                  | Flex. pipe Ø 75 per m                                                              | 1                           | 0.25                        | 1                                                 |
| 22                                                                  | 90° elbow of flex. pipe Ø 75                                                       | 0.2                         | –                           | 1                                                 |
| 23                                                                  | Intake silencer Ø 75                                                               | 0.7                         | –                           | 4                                                 |
| 24                                                                  | Fitting Ø 75                                                                       | 0                           | 0                           | 20                                                |
| 25                                                                  | Flat air outlet 0° Ø 75/90 with fitting Ø 75                                       | 0.6                         | 0.1                         | 13                                                |
| 26                                                                  | Upright air outlet 30° Ø 75/90 with fitting Ø 75                                   | 0.5                         | 0.15                        | 10                                                |
| 27                                                                  | Pipe elbow 90° Ø 75                                                                | 4.5                         | –                           | 33                                                |
| 28                                                                  | Flat air outlet 30° with fitting Ø 75                                              | 0.5                         | 0.15                        | 11                                                |
| 29                                                                  | Upright air outlet 90° with fitting Ø 75                                           | 0.8                         | 0.15                        | 14                                                |
| 30                                                                  | Closable air outlet Ø 75/90 with fitting Ø 75                                      | 0.6                         | 0.2                         | 11                                                |
| 31                                                                  | T-junction Ø 75/75/75                                                              | –                           | 0.8                         | 35                                                |
| 32                                                                  | Butterfly valve Ø 75/75/75<br>Flap position "left/right"<br>Flap position "center" | –                           | 1.2                         | 40                                                |
| 33                                                                  | Y-junction Ø 75/75/75                                                              | –                           | 0.6                         | 43                                                |
| 34                                                                  | Hose connector fitting Ø 75                                                        | 0.5                         | 0.1                         | 44                                                |
| 35                                                                  | Silencer Ø 75                                                                      | 0.6                         | –                           | 3                                                 |
| 36                                                                  | Ball-shaped scoop Ø 75                                                             | 6                           | –                           | 32                                                |
| 37                                                                  | Symmetrical plastic Y-junction Ø 75/60/60                                          | –                           | 0.8                         | 42                                                |
| 38                                                                  | Symmetrical metal Y-junction Ø 75/50/50                                            | –                           | 0.9                         | 42.1                                              |
| 39                                                                  | Adapter Ø 75 – 60                                                                  | 3.2                         | –                           | 45                                                |

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### 3 | Guide numbers

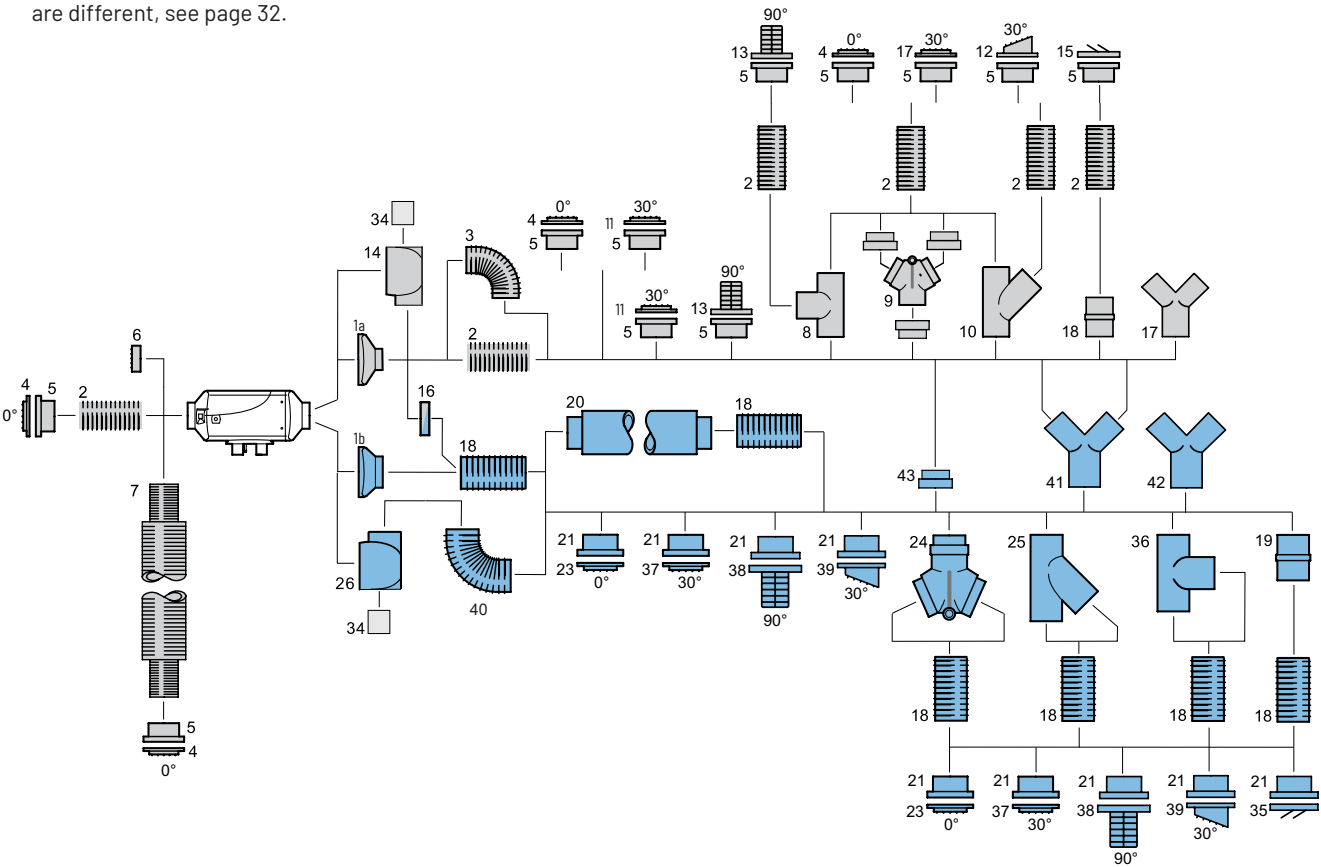
#### Airtronic M3 Commercial

Heater guide number **3\*** – with air scoop Ø 75  
Heater guide number **10\*** – with air scoop Ø 90

The drawing shows the application options for the main air-conducting parts. There are no installation examples.

\* Heater guide numbers for the Airtronic M3 Recreational are different, see page 32.

Please note:  
For an explanation of one- and two-duct heating-air ducting, see page 31.



|                                                                                     |           |
|-------------------------------------------------------------------------------------|-----------|
|  | = Ø 50 mm |
|  | = Ø 75 mm |
|  | = Ø 90 mm |

| No. | Designation (dimensions in mm)                               | Line guide number |      | Line guide number |      | see ser. no., section 8<br>„Air-conducting parts” |
|-----|--------------------------------------------------------------|-------------------|------|-------------------|------|---------------------------------------------------|
|     |                                                              | 1-duct            |      | 2-duct            |      |                                                   |
|     |                                                              | Ø 75              | Ø 90 | Ø 75              | Ø 90 |                                                   |
|     | Heating-air ducting with scoop Ø 75 (heater guide number 3)  |                   |      |                   |      |                                                   |
| 1a  | Scoop Ø 75                                                   | 0                 | –    | –                 | –    | 21                                                |
| 2   | Flex. pipe Ø 75 per m                                        | 1                 | –    | 0.25              | –    | 1                                                 |
| 3   | 90° elbow of flex. pipe Ø 75                                 | 0.2               | –    | –                 | –    | 1                                                 |
| 4   | Flat air outlet 0° with fitting Ø75                          | 0.4               | –    | 0.1               | –    | 13                                                |
| 5   | Fitting Ø 75                                                 | 0.0               | –    | 0.0               | –    | 16                                                |
| 6   | Grille Ø 75                                                  | 2.0               | –    | –                 | –    | 17                                                |
| 7   | Intake silencer Ø 75                                         | 0.8               | –    | –                 | –    | 4                                                 |
| 8   | T-junction Ø 75                                              | –                 | –    | 0.5               | –    | 35                                                |
| 9   | Butterfly valve Ø 90/90/90 with adapters 75/90               | –                 | –    | 1.8               | –    | 40                                                |
| 10  | Plastic Y-junction Ø 75/75/75                                | –                 | –    | 0.6               | –    | 43                                                |
| 11  | Flat air outlet 30° with fitting Ø75                         | 0.4               | –    | 0.1               | –    | 11                                                |
| 12  | Upright air outlet 30° with fitting Ø75                      | 0.6               | –    | 0.2               | –    | 10                                                |
| 13  | Upright air outlet 90° with fitting Ø75                      | 1.1               | –    | 0.3               | –    | 14                                                |
| 14  | Ball-shaped scoopØ 75*                                       | 2.0               | –    | –                 | –    | 32                                                |
| 15  | Closable air outlet with fitting Ø75                         | –                 | –    | –                 | –    | 12                                                |
| 16  | Ring Ø 75/90                                                 | 0.5               | –    | –                 | –    | 34                                                |
| 17  | Symmetrical plastic Y-junction Ø 75/60/60                    | –                 | –    | 0.9               | –    | 42                                                |
| 18  | Hose connector                                               | 0.5               | –    | 0.1               | –    | 44                                                |
|     | Heating-air ducting with scoop Ø 90 (heater guide number 10) |                   |      |                   |      |                                                   |
| 1b  | Scoop Ø 90                                                   | –                 | 0    | –                 | –    | 21                                                |
| 18  | Flex. pipe Ø 90 per m                                        | –                 | 1    | –                 | 0.25 | 1                                                 |
| 19  | Hose connector fitting Ø 90                                  | –                 | 0.5  | –                 | 0.1  | 44                                                |
| 20  | Silencer Ø 90                                                | –                 | 0.7  | –                 | –    | 3                                                 |
| 21  | Fitting Ø 90                                                 | –                 | 0    | –                 | 0    | 16                                                |
| 23  | Flat air outlet 0° with fitting Ø 90                         | –                 | 1.1  | –                 | 0.3  | 13                                                |
| 24  | Butterfly valve Ø 90/90/90                                   | –                 | 1.2  | –                 | –    | 40                                                |
| 25  | Y-junction Ø 90/90/90                                        | –                 | –    | –                 | 0.3  | 43                                                |
| 26  | Ball-shaped scoopØ 90*                                       | –                 | 5.0  | –                 | –    | 32                                                |
| 31  | Rotating air outlet Ø 100                                    | –                 | 2.1  | –                 | 0.5  | 11.1                                              |
| 34a | Connection fitting 50 for Ø 75                               | –                 | –    | –                 | 1.0  | 31                                                |
| 34b | Connection fitting 50 for Ø 90                               | –                 | –    | –                 | 2.5  | 31                                                |
| 35  | Closable air outlet with fitting Ø 90                        | –                 | –    | –                 | –    | 12                                                |
| 36  | T-junction Ø 90                                              | –                 | –    | –                 | 0.6  | 35                                                |
| 37  | Flat air outlet 30° with fitting Ø 90                        | –                 | 2.0  | –                 | 0.4  | 11                                                |
| 38  | Upright air outlet 90° with fitting Ø 90                     | –                 | 2.7  | –                 | 0.3  | 14                                                |
| 39  | Upright air outlet 30° with fitting Ø 90                     | –                 | 2.4  | –                 | 0.6  | 10                                                |
| 40  | 90° elbow of flex. pipe Ø 90                                 | 0.1               | –    | –                 | –    | 1                                                 |
| 41  | Symmetrical plastic Y-junction Ø 90/75/75                    | –                 | –    | –                 | 0.9  | 42                                                |
| 42  | Symmetrical plastic Y-junction Ø 90/60/60                    | –                 | –    | –                 | 2.1  | 42                                                |
| 43  | Adapter Ø 75 – 90                                            | –                 | 3.3  | –                 | –    | 45                                                |

\* Cannot be used with the Airtronic D4 Plus and D4R.

### 3 | Guide numbers

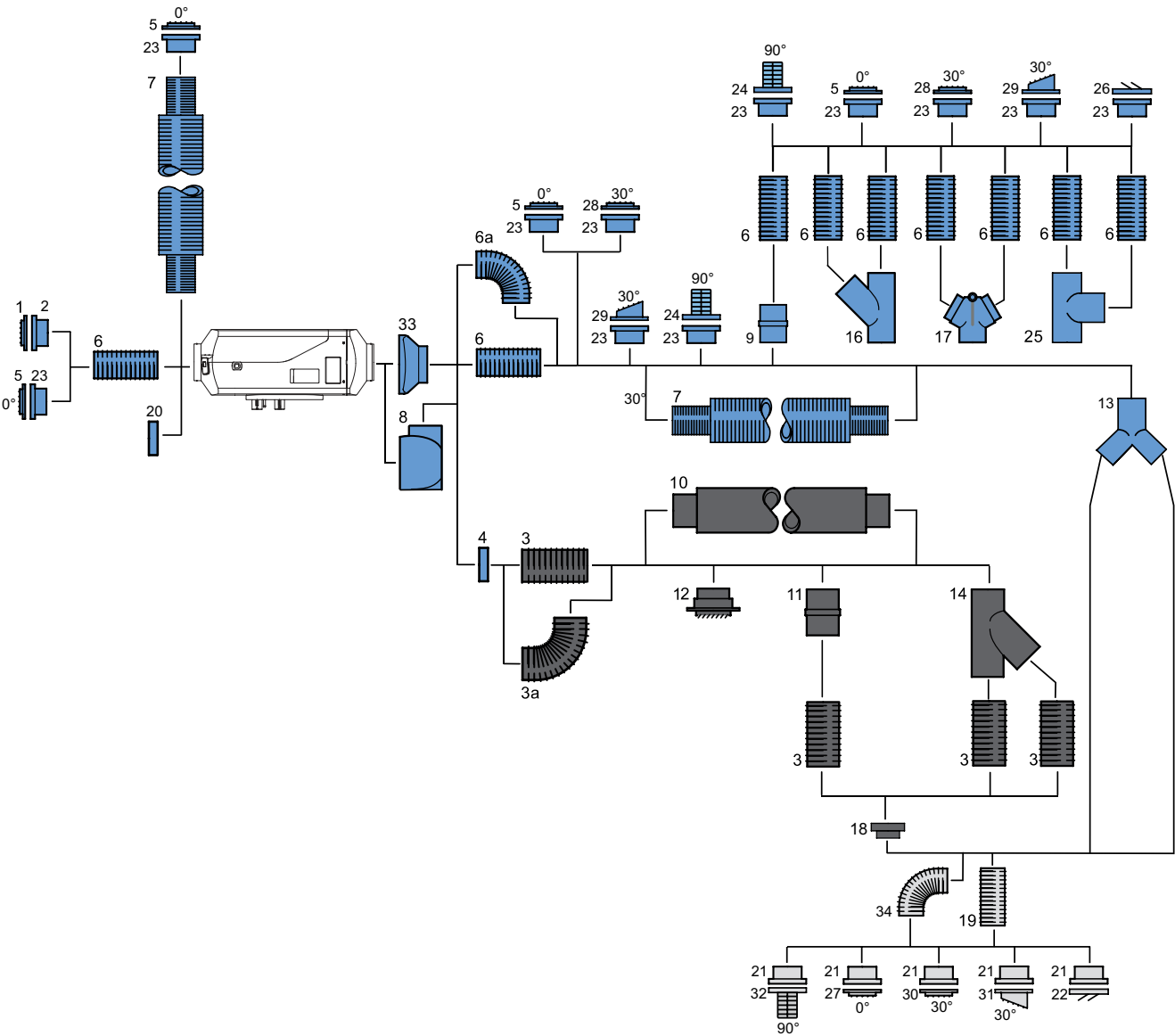
#### Airtronic L3

Heater guide number **10**

The drawing shows the application options for the main air-conducting parts. There are no installation examples.

**Please note:**

For an explanation of one- and two-duct heating-air ducting, see page 31.



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| No.                                                                 | Designation (dimensions in mm)            | Line guide number<br>1-duct | Line guide number<br>2-duct | see ser. no., section 8<br>„Air-conducting parts“ |
|---------------------------------------------------------------------|-------------------------------------------|-----------------------------|-----------------------------|---------------------------------------------------|
| <b>Heating-air ducting with scoop Ø 90</b> (heater guide number 10) |                                           |                             |                             |                                                   |
| 1                                                                   | Air outlet Ø 90, metal grille             | 0.6                         | 0.2                         | 13.1                                              |
| 2                                                                   | Hose fitting Ø 90                         | 0                           | 0                           | 18                                                |
| 3                                                                   | Flexible pipe Ø 100 per m                 | 0.6                         | 0.2                         | 1                                                 |
| 3a                                                                  | 90° elbow of flex. pipe Ø 100             | 0.6                         | –                           | 1                                                 |
| 4                                                                   | Adapter Ø 90/100                          | 0                           | –                           | 45                                                |
| 5                                                                   | Flat air outlet 0° with fitting Ø 90      | 1                           | 0.2                         | 13                                                |
| 6                                                                   | Flexible pipe Ø 90 per m                  | 1                           | 0.25                        | 1                                                 |
| 6a                                                                  | 90° elbow of flex. pipe Ø 90              | 0.2                         | –                           | 1                                                 |
| 7                                                                   | Intake silencer Ø 90                      | 0.8                         | –                           | 3                                                 |
| 8                                                                   | Ball-shaped scoop Ø 90                    | 8                           | –                           | 32a                                               |
| 9                                                                   | Hose connector fitting Ø 90               | 0.5                         | 0.1                         | 46                                                |
| 10                                                                  | Silencer Ø 100                            | 0.5                         | –                           | 3                                                 |
| 11                                                                  | Hose connector fitting Ø 100              | 0.4                         | 0.1                         | 44                                                |
| 12                                                                  | Flat air outlet Ø 100 rotatable           | 5.5                         | 1.1                         | 23                                                |
| 13                                                                  | Symmetrical plastic Y-junction Ø 90/75/75 | –                           | 0.9                         | 42                                                |
| 14                                                                  | Y-junction Ø 100/100/100                  | –                           | 0.5                         | 43                                                |
| 16                                                                  | Y-junction Ø 90/90/90                     | –                           | 0.6                         | 43                                                |
| 17                                                                  | Butterfly valve Ø 90/90/90                | –                           | 1.1                         | 40                                                |
| 18                                                                  | Adapter Ø 75 – 100                        | 3.2                         | –                           | 45                                                |
| 19                                                                  | Flexible pipe Ø 75 per m                  | 4                           | 1                           | 1                                                 |
| 20                                                                  | Plastic heater grille, Ø 90               | 2                           | –                           | 17                                                |
| 21                                                                  | Fitting Ø 75                              | 0                           | 0                           | 16                                                |
| 22                                                                  | Closable air outlet with fitting Ø 75     | –                           | –                           | 12                                                |
| 23                                                                  | Fitting Ø 90                              | 0                           | 0                           | 16                                                |
| 24                                                                  | Upright air outlet 90° with fitting Ø 90  | 3                           | 0.8                         | 14                                                |
| 25                                                                  | T-junction Ø 90/90/90                     | –                           | 0.6                         | 35                                                |
| 26                                                                  | Closable air outlet with fitting Ø 90     | –                           | –                           | 12                                                |
| 27                                                                  | Flat air outlet 0° with fitting Ø 75      | 2.5                         | 0.7                         | 13                                                |
| 28                                                                  | Flat air outlet 30° with fitting Ø 90     | 1.7                         | 0.4                         | 11                                                |
| 29                                                                  | Upright air outlet 30° with fitting Ø 90  | 2.3                         | 0.6                         | 10                                                |
| 30                                                                  | Flat air outlet 30° with fitting Ø 75     | 2.7                         | 0.8                         | 11                                                |
| 31                                                                  | Upright air outlet 30° with fitting Ø 75  | 2.1                         | 0.5                         | 10                                                |
| 32                                                                  | Upright air outlet 90° with fitting Ø 75  | 4.7                         | 1.2                         | 14                                                |
| 33                                                                  | Scoop Ø 90                                | 0                           | 0                           | 22                                                |
| 34                                                                  | 90° elbow of flex. pipe Ø 75              | 1                           | 0.25                        | 1                                                 |

\* Item 4 – when using as adapter Ø 90 / 100, cut out the grille

### 3 | Guide numbers

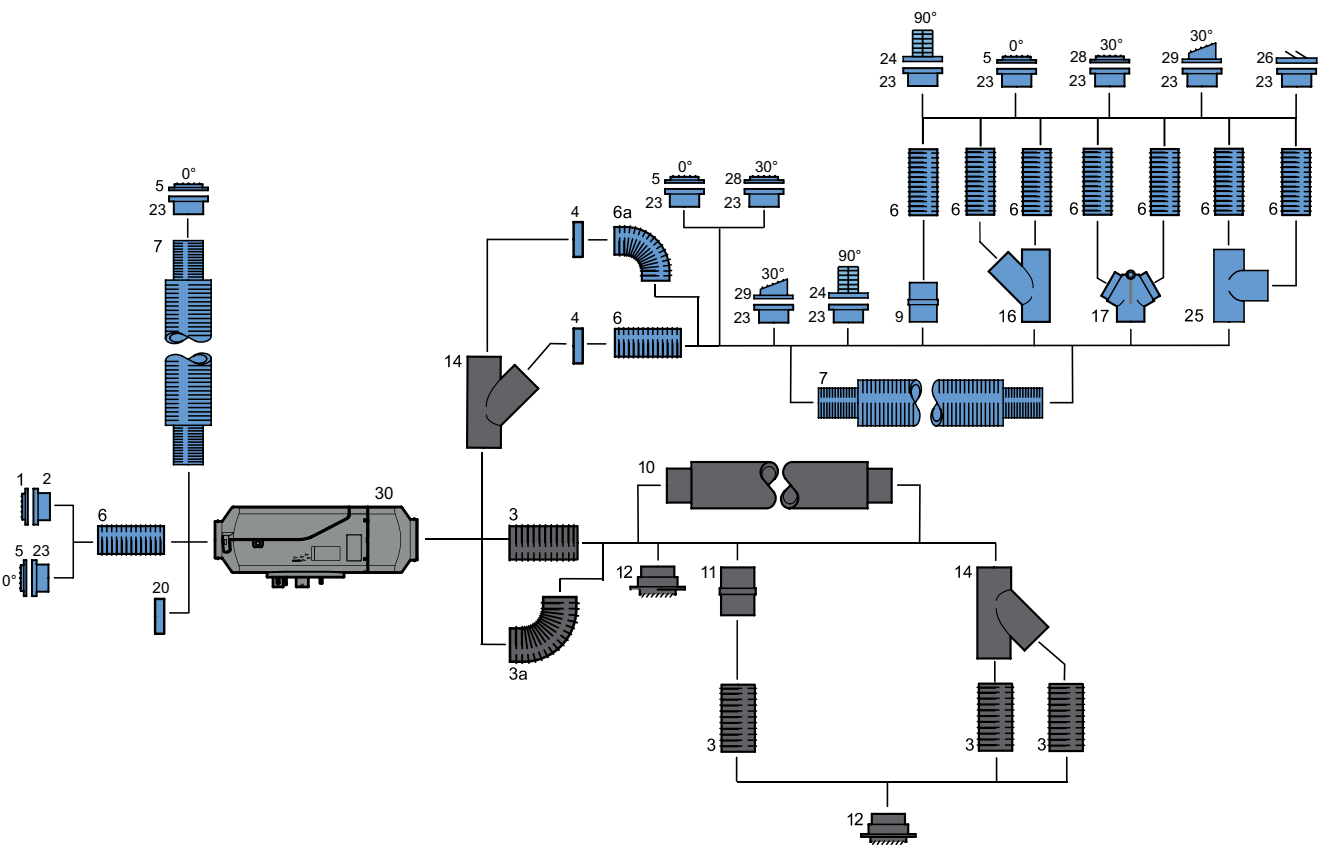
#### Airtronic XL3

Heater guide number **10**

The drawing shows the application options for the main air-conducting parts. There are no installation examples.

**Please note:**

For an explanation of one- and two-duct heating-air ducting, see page 31.



| No.                                                                 | Designation (dimensions in mm)           | Line guide number<br>1-duct | Line guide number<br>2-duct | see ser. no., section 8<br>„Air-conducting parts“ |
|---------------------------------------------------------------------|------------------------------------------|-----------------------------|-----------------------------|---------------------------------------------------|
| <b>Heating-air ducting with scoop Ø 90</b> (heater guide number 10) |                                          |                             |                             |                                                   |
| 1                                                                   | Air outlet Ø 90, metal grille            | 0.6                         | 0.2                         | 13.1                                              |
| 2                                                                   | Hose fitting Ø 90                        | 0                           | 0                           | 18                                                |
| 3                                                                   | Flexible pipe Ø 100 per m                | 0.6                         | 0.2                         | 1                                                 |
| 3a                                                                  | 90° elbow of flex. pipe Ø 100            | 0.6                         | –                           | 1                                                 |
| 4                                                                   | Adapter Ø 90/100                         | 1.4                         | –                           | 45                                                |
| 5                                                                   | Flat air outlet 0° with fitting Ø 90     | 1                           | 0.2                         | 13                                                |
| 6                                                                   | Flexible pipe Ø 90 per m                 | 1                           | 0.25                        | 1                                                 |
| 6a                                                                  | 90° elbow of flex. pipe Ø 90             | 0.2                         | –                           | 1                                                 |
| 7                                                                   | Intake silencer Ø 90                     | 0.8                         | –                           | 3                                                 |
| 9                                                                   | Hose connector fitting Ø 90              | 0.5                         | 0.1                         | 44                                                |
| 10                                                                  | Silencer Ø 100                           | 0.5                         | –                           | 3                                                 |
| 11                                                                  | Hose connector fitting Ø 100             | 0.4                         | 0.1                         | 44                                                |
| 12                                                                  | Flat air outlet Ø 100 rotatable          | 5.5                         | 1.1                         | 23                                                |
| 14                                                                  | Y-junction Ø 100/100/100                 | –                           | 0.5                         | 43                                                |
| 16                                                                  | Y-junction Ø 90/90/90                    | –                           | 0.6                         | 43                                                |
| 17                                                                  | Butterfly valve Ø 90/90/90               | –                           | 1.1                         | 40                                                |
| 23                                                                  | Fitting Ø 90                             | 0                           | 0                           | 16                                                |
| 24                                                                  | Upright air outlet 90° with fitting Ø 90 | 3                           | 0.8                         | 14                                                |
| 25                                                                  | T-junction Ø 90/90/90                    | –                           | 0.6                         | 35                                                |
| 26                                                                  | Closable air outlet with fitting Ø 90    | –                           | –                           | 12                                                |
| 28                                                                  | Flat air outlet 30° with fitting Ø 90    | 1.7                         | 0.4                         | 11                                                |
| 29                                                                  | Upright air outlet 30° with fitting Ø 90 | 2.3                         | 0.6                         | 10                                                |
| 30                                                                  | Scoop Ø 100                              | 0                           | 0                           | –                                                 |

\* Item 4 – when using as adapter Ø 90 / 100, cut out the grille

## 4 | Control units

### Control units



| Model                        | Mini-controller<br>Control unit | EasyStart Select<br>Control unit | EasyStart Remote<br>Remote control                          | EasyStart Remote+<br>Remote control                                                                                                                    | EasyStart Pro<br>Timer                                                                                                                               | EasyStart Duty<br>Control unit                                                               | EasyStart Web<br>**/**<br>Web-based<br>remote control                                                                                                |
|------------------------------|---------------------------------|----------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Order number                 | 22 1000 32 07 00                | 22 1000 34 13 00                 | 22 1000 34 81 00                                            | 22 1000 34 17 00                                                                                                                                       | 22 1000 35 22 00                                                                                                                                     | 22 1000 35 50 00                                                                             | 22 1000 35 3500                                                                                                                                      |
| Interface                    | S+                              | LIN                              | LIN, S+                                                     | LIN, S+                                                                                                                                                | CAN                                                                                                                                                  | LIN, S+, CAN                                                                                 | LIN, S+, CAN <sup>1</sup>                                                                                                                            |
| Basic functions              | • Heating/ventilation on/off    |                                  | • Heating/ventilation on/off<br>• Operating time adjustable | • Heating/ventilation on/off<br>• Long-press function for immediate heating<br>• A second/additional heater can be operated                            |                                                                                                                                                      | • Heating/ventilation on/off<br>• Start immediate heating<br>• Display Heating<br>• Heating+ | • Heating/ventilation on/off<br>• Can be controlled via all web-enabled devices, including voice assistants                                          |
| Timer programming            | —                               | —                                | —                                                           | • Three programming locations within seven days<br>• Selection of an individual day of the week or one of three time periods (Mo.–Fr./Sa.+Su./Mo.–So.) | • Three programming locations within seven days<br>• Selection of individual days of the week or one of three time periods (Mo.–Fr./Sa.+Su./Mo.–Su.) | • One programming location within seven days<br>• Selection of the individual day            | • Three programming locations within seven days<br>• Selection of individual days of the week or one of three time periods (Mo.–Fr./Sa.+Su./Mo.–Su.) |
| Operating time settings      | Continuous operation            | 60 min. preset                   | 10, 20, 30, 40, 50 or 60 min. can be set                    | Adjustable 10–120 min.; additionally endless with Airtronic                                                                                            |                                                                                                                                                      | 10–720 min. or endless                                                                       |                                                                                                                                                      |
| Pre-ventilation*             | Yes                             | Yes                              | No                                                          | Yes                                                                                                                                                    | Yes                                                                                                                                                  | Yes                                                                                          | Yes                                                                                                                                                  |
| Display Interior temperature | —                               | —                                | —                                                           | Yes                                                                                                                                                    | Yes                                                                                                                                                  | Yes                                                                                          | Yes                                                                                                                                                  |
| Range                        | —                               | —                                | Up to 1 km under optimum conditions                         |                                                                                                                                                        | —                                                                                                                                                    | —                                                                                            | Unlimited (given network coverage)                                                                                                                   |

## Control units



| Model             | Mini-controller<br>Control unit | EasyStart Select<br>Control unit | EasyStart Remote<br>Remote control | EasyStart Remote+<br>Remote control           | EasyStart Pro<br>Timer                                                                         | EasyStart Duty<br>Control unit                                                                 | EasyStart Web<br>**/**<br>Web-based<br>remote control                                 |
|-------------------|---------------------------------|----------------------------------|------------------------------------|-----------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Diagnosis capable | —                               | Display of error number          | —                                  | Diagnostics via fault number in Workshop menu | Simple diagnostics in text form via User menu<br>Diagnostics via fault number in Workshop menu | Simple diagnostics in text form via User menu<br>Diagnostics via fault number in Workshop menu | Simple diagnostics in text form via User menu<br>Remote diagnostics via Workshop menu |

<sup>1</sup>The control unit's specific scope of functions depends on the heater and the connection type used (S+ / LIN / CAN).

Specifics in connection with Hydronic heaters:

|                                                                     |   |   |   |     |                                    |   |                                    |
|---------------------------------------------------------------------|---|---|---|-----|------------------------------------|---|------------------------------------|
| Residual heat function possible                                     | — | — | — | —   | Yes, depending on the heater type* | — | Yes, depending on the heater type* |
| Timer programming: autom. calculation of the operating time         | — | — | — | Yes | Yes                                | — | Yes                                |
| Manual high-altitude operation of Hydronic S3 Economy (CS) possible | — | — | — | —   | Yes                                | — | Yes                                |

Specifics in connection with Airtronic heaters:

|                                       |   |   |   |   |     |   |     |
|---------------------------------------|---|---|---|---|-----|---|-----|
| Lower air flow temperature can be set | — | — | — | — | Yes | — | Yes |
|---------------------------------------|---|---|---|---|-----|---|-----|

\* only with Hydronic 3 (CS)

\*\* End users can pre-book connectivity at standard cellphone rates for 12 months at a time at [www.myeberspaecher.com](http://www.myeberspaecher.com)

\*\*\* Network coverage available in the following countries: Austria, Belarus and Ukraine, Belgium, Czechia, Denmark, Estonia, Finland, France, Germany, Great Britain and Northern Ireland, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Romania, Russia, Sweden, Switzerland, Turkey.

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## 4 | Optional add-ons

### Selection of control and display sensors

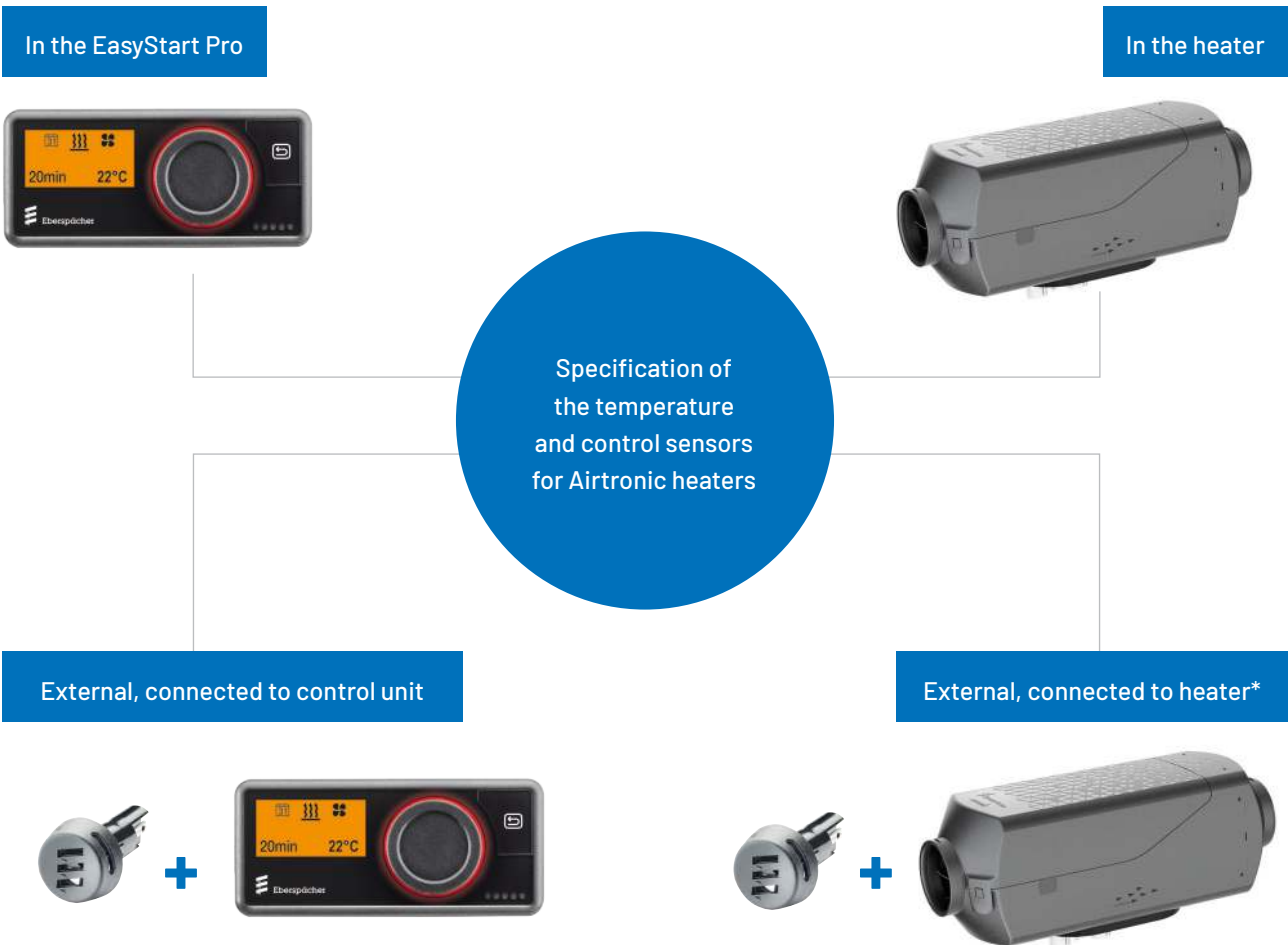
The EasyStart Pro has an integrated temperature sensor, which is used to determine the interior temperature. An exterior temperature sensor additionally can be connected and implemented in the system upon installation. The temperature sensor, which is built into the heater, can also be used by air heaters to determine the interior temperature. The sensors to be used for temperature control (control sensor) and for temperature display (display sensor) can be set via the EasyStart Pro during commissioning.

#### Specifics regarding fresh-air mode:

- The control sensor must not be the internal heater sensor.

There are three options:

- Use of the integrated temperature sensor of the EasyStart Pro
- Connection of an external temperature sensor to the EasyStart Pro
- Connection of an external temperature sensor to the air heater



## 4 | Control units – compatibility with heaters

Control units



| Model        | Airtronic mini-controller | EasyStart Select | EasyStart Timer  | EasyStart Remote Remote control | EasyStart Remote+ Remote control | EasyStart Pro    | EasyStart Duty   | EasyStart Web Web-based remote control |
|--------------|---------------------------|------------------|------------------|---------------------------------|----------------------------------|------------------|------------------|----------------------------------------|
| Order number | 22 1000 32 07 00          | 22 1000 34 13 00 | 22 1000 34 15 00 | 22 1000 34 81 00                | 22 1000 34 17 00                 | 22 1000 35 22 00 | 22 1000 35 50 00 | 22 1000 35 35 00                       |
| Interface    | S+                        | LIN              | LIN, S+          | LIN, S+                         | LIN, S+                          | CAN              | LIN, S+, CAN     | LIN, S+, CAN                           |

Control unit compatibility with heaters

|  |                                       |       |     |                                    |                                    |                                    |     |         |                |
|--|---------------------------------------|-------|-----|------------------------------------|------------------------------------|------------------------------------|-----|---------|----------------|
|  | Hydronic S3 12V CS Economy            | -     | -   | S+ *                               | S+ *                               | S+ *                               | CAN | CAN, S+ | CAN            |
|  | Hydronic S3 24V CS Commercial         | -     | -   | S+ *                               | S+ *                               | S+ *                               | CAN | CAN, S+ | CAN            |
|  | Hydronic S3 12V CL Economy            | -     | LIN | LIN                                | LIN                                | LIN                                | -   | LIN     | LIN            |
|  | Hydronic M II 12/24 V                 | -     | LIN | LIN                                | LIN                                | LIN                                | -   | LIN     | LIN            |
|  | Hydronic L3 (16, 24, 30, 35)          | -     | LIN | LIN, S+ *                          | LIN, S+ *                          | LIN, S+ *                          | CAN | CAN, S+ | CAN, LIN, S+ * |
|  | Airtronic S3/M3/L3 12 V Commercial    | S+ ** | LIN | LIN                                | LIN – no set-point input possible  | LIN                                | CAN | CAN, S+ | CAN            |
|  | Airtronic M3 12V Recreational         | S+ ** | LIN | LIN                                | LIN – no set-point input possible  | LIN                                | CAN | CAN, S+ | CAN            |
|  | Airtronic S3/M3/L3/XL3 24V Commercial | S+ ** | -   | S+ *<br>No setpoint input possible | S+ *<br>No setpoint input possible | S+ *<br>No setpoint input possible | CAN | CAN, S+ | CAN            |

\* With restricted function: diagnostics cannot be run via the control unit

\*\* With restricted function: no external temperature sensor possible

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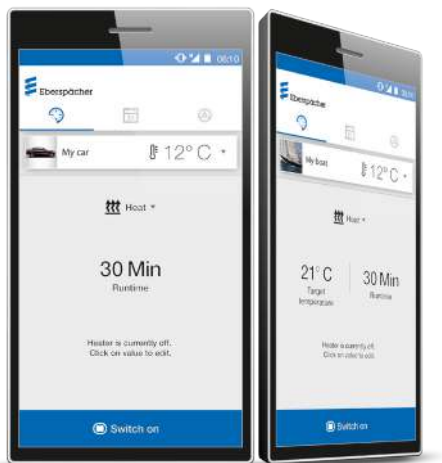
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## 4 | Combination options via CAN communication

Combination options for heaters and control units via CAN



## 4 | Control units – EasyStart Web\*



### 1. Advantages (functions):

- Pre-installed SIM chip
- Integrated antenna in the receiver allows for easy installation
- Three interfaces: CAN, LIN, switching plus (S+)
- Support for complex applications through a combination of up to two heaters and one additional CAN-compatible control unit (e.g. EasyStart Pro) – see Compatibility and Combinations section
- Display of error classes for the user
- Remote diagnostics by the workshop (must be approved by the end customer)
- Smartwatch compatibility and Alexa voice control
- High-altitude operation can be activated manually above altitudes of 1,500 m in combination with the Hydronic S3 Economy CS
- Integrated residual heat function (when combined with Hydronic S3 CS)
- LIN and S+ interfaces permit flexible fuse for older heater generations as well

### 2. Additional features:

- Use of all available networks for optimum connectivity
- No need to insert or replace a SIM card
- Roaming function enables use in other countries without additional costs
- Convenient, cost-effective pre-booking of a flat rate for 12 months at a time
- Intuitive operation with newly designed smartphone app
- Compatibility with all web-enabled devices using a browser version optimized for mobile devices
- Automatic calculation of the operating time (depending on application)
- Displays the current status (e.g. operating mode, interior temperature, timer)
- Can be combined with other control units (depending on application)
- The heater can be flexibly controlled using a variety of control units (depending on application)

### Technical data:

|                                                   |    |                                  |
|---------------------------------------------------|----|----------------------------------|
| Order number                                      |    | 22 1000 35 3500                  |
| Dimensions L x W x H (without fastening brackets) | mm | 66 x 106 x 25                    |
| IP type of protection                             |    | IP 40 according to ISO 20653     |
| Average standby current draw                      | mA | < 1                              |
| Current consumption during data transfer          | A  | During "Call-in" < 0.5           |
| Max. continuous current draw (during operation)   | mA | < 30                             |
| Operating temperature                             | °C | -40 to +85                       |
| Wireless network module                           |    | Quad-band GSM module (2G and 4G) |

\* Network coverage available in the following countries: Austria, Belarus and Ukraine, Belgium, Czechia, Denmark, Estonia, Finland, France, Germany, Great Britain and Northern Ireland, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Romania, Russia, Sweden, Switzerland, Turkey.

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## 4 | Control units – EasyStart Pro



### 1. Advantages (functions):

- Intuitive navigation via a control knob
- Integrated temperature sensor
- Operation of up to two heaters separately or two identical (Airtronic or Hydronic) heaters in a group
- Simple plain text diagnostics for users
- Detailed diagnostics function for the workshop
- Integrated residual heat function for Hydronic (CS) heaters: efficient heating using the engine's residual heat
- Altitude mode can be activated manually above 1,500 m (Hydronic S3 Economy (CS))
- Easy-to-read system status display (home screen)
- Timer function: up to three programming locations available
- Display and LED color ring for clearly indicating the status in all operating conditions
- Various installation variants possible (surface mounting with concealed or visible cable routing, flush mounting)
- Mounting-optimized ribbon cable
- Endless heater operating time can be set (Airtronic 2 + Airtronic 3 and Hydronic S3 (CS))
- Menu operation available in English and German, as well as 25 other languages via EasyScan

### 2. Additional features:

- Setup assistant simplifies installation
- Maintenance interval setting possible
- Immediate heating via the long-press function
- Integration of an additional CAN control unit possible: EasyStart Web (from Q2/2020) or additional EasyStart Pro
- Permanent display illumination possible
- ADR compliant
- Easy diagnostics via EasyScan; no disassembly required

### Technical data:

|                              |    |                                                                                     |
|------------------------------|----|-------------------------------------------------------------------------------------|
| Order number                 |    | 22 1000 35 22 00                                                                    |
| Dimensions L x W x H         | mm | 81.8 x 37.0 x 13.5 (without control knob)<br>81.8 x 37.0 x 18.6 (with control knob) |
| IP type of protection        |    | IP5K2                                                                               |
| Average standby current draw | mA | < 0.4                                                                               |
| Operating temperature        | °C | –40 to +85                                                                          |

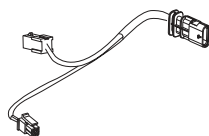
## 4 | Testing equipment

### Testing equipment for heaters:



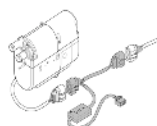
| Designation                   | Item no.         |
|-------------------------------|------------------|
| EasyScan CAN                  | 22 1560 89 000   |
| EasyScan                      | 22 1550 89 00 00 |
| Diagnostic device (new timer) | 22 1545 89 00 00 |

### Current adapter cables:



| Designation                            | Item no.         |
|----------------------------------------|------------------|
| Hydronic JL3                           | 25 3040 89 0300  |
| Hydronic I 3/4/5 kW                    | 22 1000 31 63 00 |
| Hydronic 2 Economy / Comfort           | 22 1000 33 78 00 |
| Hydronic M-II                          | 22 1000 33 44 00 |
| Hydronic 2 (OEM)                       | 22 1000 32 64 00 |
| Airtronic 1 (D2/D3/D3 Plus/D4/D4 Plus) | 22 1000 31 86 00 |
| EasyFan / EasyStart Web                | 22 1000 34 57 00 |

### Adapter cables for older heaters\*:



| Designation                   | Item no.         |
|-------------------------------|------------------|
| Compact air heater            | 22 1000 30 69 00 |
| Air heater C (D1L C DAF)      | 22 1000 30 20 00 |
| Hydronic 10 (25 2161/25 2162) | 22 1000 32 52 00 |
| Hydronic 16/24/30/35          | 22 1000 31 66 00 |
| Hydronic 30 Neoplan           | 22 1000 31 16 00 |

\* Diagnostic function using EasyScan depends on the diagnostic device or diagnostic protocol of the heater.

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## 5 | Flap and fan module EasyFan

### EasyFan – the new flap and fan module for Hydronic 1, 2 and S3 Economy in passenger car applications:

The flap and fan module EasyFan is a product developed in-house for activating vehicle fans and air and heating flaps. As a customer, you will benefit from the usual high-quality Eberspächer support and well-maintained data.



#### 1. Advantages (functions):

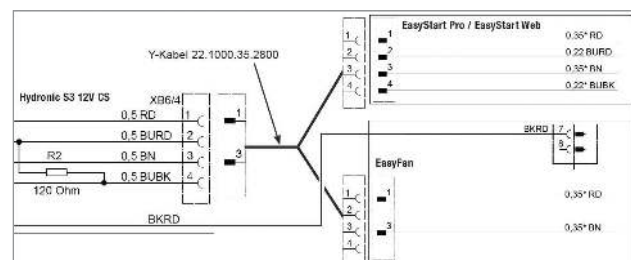
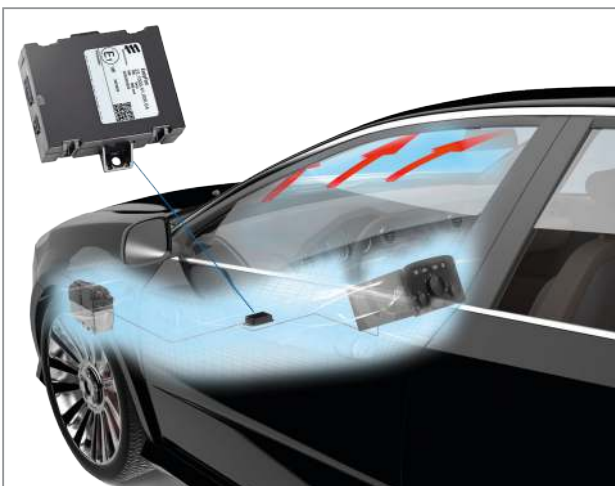
- Automatic activation of vehicle fan, as well as air and heating flaps: no need for the user to set the fan or flaps to "Defrost" in the vehicle before the heating process
- All previously selected fan and flap settings are automatically restored after the heating process or after the engine has been started
- For Hydronic 1, 2 and S3 Economy, the product is delivered ready programmed for installation in a specific vehicle
- Automotive electronics fault protection: no physical connection between product and CAN unless the ignition is switched off, otherwise automatic cutoff

#### 2. Additional features:

- Vehicle-specific EasyFan control units are available for a wide range of vehicles and climate control variants
- Impress customers who own the following brands of vehicle: Audi, BMW, Citroen, Dodge, Fiat, Ford, Honda, Infinity, KIA, Land Rover, Mazda, Mercedes-Benz, Nissan, Peugeot, Renault, Seat, Skoda, Subaru, Toyota, VW

As always, for more details please visit:  
[partner.eberspaecher.com](http://partner.eberspaecher.com)

- Input signal:
  - EasyFan is activated via the fan output or a CAN message from the heater
- Output signal:
  - Flap and fan settings are controlled via CAN messages to the A/C control unit
  - Two hardware versions for high- and low-speed CAN are available to accommodate the various passenger car bus systems on the market.
  - When combined with Hydronic S3 CS: use adapter cable 22.1000.35.2800 to connect the EasyFan control unit and interrupt the CAN connection between the heater and EasyFan. The EasyFan control unit is switched on using the BKRD line. See example for connecting Hydronic S3 12V CS to EasyStart Pro / EasyStart Web in combination with EasyFan.



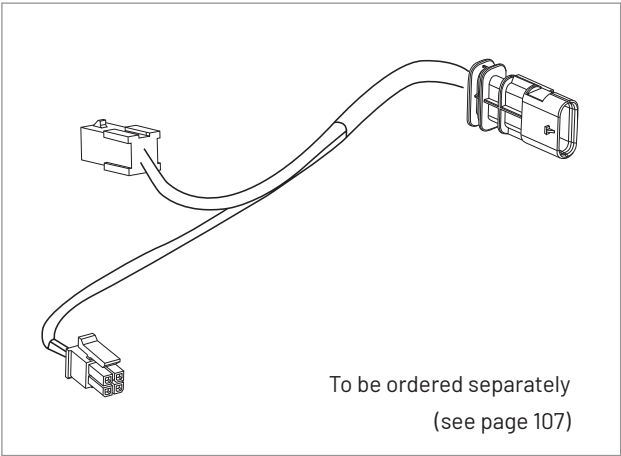
Technical data:

|                                                   |    |                                                                          |
|---------------------------------------------------|----|--------------------------------------------------------------------------|
| Programmed versions                               |    | For part numbers, see the vehicle-specific A/C kit on the Partner Portal |
| Current draw                                      | mA | 50                                                                       |
| Closed-circuit current                            | mA | 0.1                                                                      |
| IP type of protection                             |    | IP 40                                                                    |
| Operating temperature                             | °C | -40 to +85                                                               |
| Dimensions L x W x H<br>(with fastening brackets) | mm | 72 x 76 x 23                                                             |

EasyFan programming cable

Required for programming EasyFan modules.

Order no.: 22 1000 34 57 00





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## 5 | A/C kit with IPCU for controlling the vehicle's fan

### The IPCU is part of the A/C kit:

A/C kits should be installed first!

#### OPTIONS:

- See installation recommendations/Service Portal as to whether A/C kit is available
- If there is no A/C kit, see Service Portal: IPCU programming list (Download area)
- Call the Technical Hotline

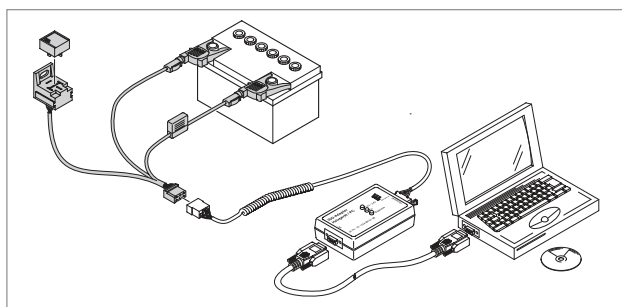
#### Warning:

- Performing measurements requires specialist knowledge in automotive electronics
- Performing measurements requires the vehicle manufacturer's circuit diagrams
- We can accept no liability for measuring errors that result in permanent damage to the vehicle's air-conditioning system and/or measuring devices and diagnostics equipment

### Programming option with EDiTH Basic:

Adapter cable for IPCU configuration

Order no.: 22 1000 32 74 00



### Introduction to performing measurements with the relevant instruments:

Universal multimeter with frequency meter and duty cycle or an oscilloscope (workshop equipment).

#### PERFORMING MEASUREMENTS:

- Preselect voltage meter measuring range minimum U<sub>3</sub>; measure according to circuit diagram
- Switch on ignition
- Change fan speed using A/C control unit
- If the voltage is changeable between 0 – 5 V or 0 – 10 V: voltage divider, choose a low fan speed, note voltage value

#### No clear change:

- Switch fan to 0, measure direct current in voltage range
  - Voltage to battery: **Low active** or
  - Voltage 0 V: **High active**, note

**Important: do not exceed maximum voltage!**
- Switch to frequency measurement, read and note **frequency**
- Select low fan speed, switch to duty cycle and note **duty cycle in %**
- Choose a fan speed that puts the duty cycle at ~50%, switch the measuring device to minimum U<sub>13</sub>, **read voltage**, multiply by 2 and note

## 6 | The benefits for workshops

Robust design, high-performance, sophisticated technology: Eberspächer fuel operated heaters have made a name for themselves around the world. For every application, our innovative heating technology ensures an extremely comfortable degree of warmth as soon as the driver or passengers enter a vehicle. Use our products for the benefit of your customers – and therefore to your advantage. We have summarized the most important reasons why both you and your customers should choose Eberspächer.

### Higher sales and workshop utilization:

Selling pre-heaters is a high-margin alternative to conventional workshop business. Make the best possible use of this opportunity to increase your workshop's utilization.

### Potential:

More than 90% of customers who have bought a pre-heater would opt for this extra again with their next vehicle.

### Partnership:

As an Eberspächer Partner; you are comprehensively trained so that you have all the necessary know-how on Eberspächer pre-heaters. You also have access to our Web portal where you can obtain important information such as installation recommendations, prices and catalogs. At the start of the season, you receive our comprehensive advertising package.

### Here's how you can support sales internally:

- Your customer will buy only something he knows and loves. That means your demonstration vehicles should have a pre-heater too!
- Motivation is everything: ensure that your sales staff are fired up and fully versed on the subject of pre-heaters.
- To make sure they close the deal, give your employees impressive sample calculations for available leasing and finance offers.
- Go for maximum impact: drive the advertising message on your homepage, in your newsletter or with direct mail too.

### So when you're planning, here are the key areas to consider:

- Provide your sales team and your parts and service managers with campaign information in good time!
- Set out which vehicle models the promotional package can be offered for.
- Make sure you provide a careful calculation of the package prices.
- Order our advertising materials and use them for optimum effect at your premises.!
- Make sure you have the necessary parts in stock!
- Check that your pre-heater workshop knowledge is up-to-date and if you need a refresher, use the training provided by your distributor and Eberspächer.
- Together with your team, work through a guideline for your sales discussions. Next – some compelling arguments!

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## 6 | The benefits for end customers



### Customer benefits for passenger car owners:

- Not only do you no longer have to waste time scraping the ice off the windows in the morning – a pre-heater also ensures you have a pleasantly warm car to get into after playing sports, having a wellness treatment, spending an evening at the movies or enjoying a concert. A pre-heater is also a true status symbol and should be found in every high-end car.
- The Eberspächter pre-heater ensures that your windows are thawed in time for you to leave, and do not fog up. A clear view of the road and no need to wear a thick winter jacket at the steering wheel – for real safety!
- A cold start puts as much of a burden on the engine as many miles of highway driving. A modern pre-heater prevents this, because it heats not only the interior but also your engine's cooling circuit. The extremely wear-inducing cold-start phase is avoided, which helps to maintain the vehicle's value.
- An engine warmed by a pre-heater consumes considerably less fuel when starting and for the first few minutes of a trip, because the cold-starting or warm-up phase described earlier does not occur.
- Pollutant emissions during a warm start are lower than during a cold start. This not only eases people's conscience, but also specifically protects the environment.
- Winters at our latitudes last much longer than we realize. Ice in April is not unusual! And the first minus sign often appears on the thermometer in October. On hot summer days, select pre-ventilation and you can keep your car supplied with fresh outside air when parking as well.



### Customer benefits for motor home owners:

- The heater is supplied with fuel from your vehicle's fuel tank – you don't have to worry about propane containers and connections when traveling abroad.
- Eberspächter heaters feature low fuel and electricity consumption.
- The heater is conveniently operated via pre-programming, remote control or smartphone.
- Eberspächter fuel operated heaters are now even quieter.
- Compared to competitor products, Eberspächter products permit space-saving installation underfloor or in the engine compartment in addition to interior installation.
- This kind of heating is permitted worldwide while driving, without any additional components.
- The heater's design is particularly easy to service and maintain.
- Automatic altitude compensation in all models from Airtronic 2 upwards

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#### Customer benefits for special-purpose vehicle owners:

- Low operating costs due to excellent efficiency
- Reliable starting even in low temperatures
- Comfortable temperatures in mobile workplaces and optimum temperature control for storage compartments
- Eberspächer fuel operated heaters are now even quieter.
- The heater is installed inside the vehicle – it is also possible to mount it below the floor or in the engine compartment to save space.
- The heater's design is particularly easy to service and maintain.



#### Customer benefits for boat owners:

- Eberspächer heaters feature low fuel and electricity consumption.
- The heater provides exactly the climate you want in the cabin.
- You can operate your heater conveniently using the controller, pre-programming or smartphone.
- Eberspächer fuel operated heaters are now even quieter.
- You do not need to sacrifice any space in the cabin in order to install the heater as the heaters can be housed in any room with good external ventilation, e.g. in the storage locker, the cockpit or other storage areas.
- The heater's design is particularly easy to service and maintain.
- It also provides hot water for your shower or general use.



## 7 | Water-conducting parts

General information:

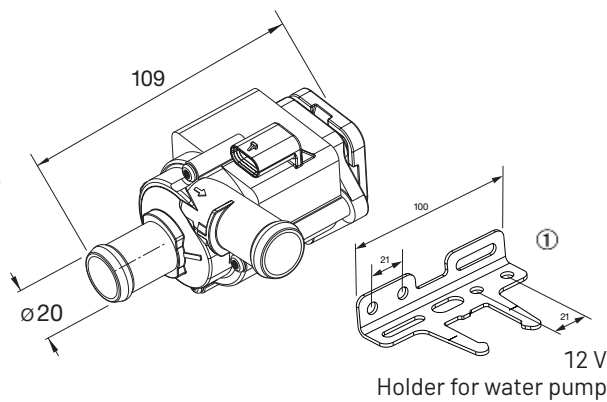
- Install water pump no higher than the heater and preferably lower.
- All water-conducting heater parts must always be below the engine's coolant level.
- When installing a water heater, always use water hoses approved for use with vehicles, otherwise there is a danger of the hose bursting or layers of the hose separating, clogging the water circuit.
- Always secure water hoses with hose clips at connections.
- Always route water hoses so that they are not affected by moving parts and cannot be chafed. Pay particular attention to the heavy vibration caused by switching the engine on and off.
- Always use a large radius when routing water hoses to prevent kinking, and do not leave hoses hanging loose.
- Protect water hoses from intense heat or even contact with hot engine parts, e.g. the exhaust pipe.
- Always air-bleed the entire water circuit of a vehicle after any assembly operation.
- Please also refer to the safety information on this section in the heater documentation.

| Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no. |
|-----------------------|-----------------------------|------------------------------|-----------|
|                       |                             |                              |           |

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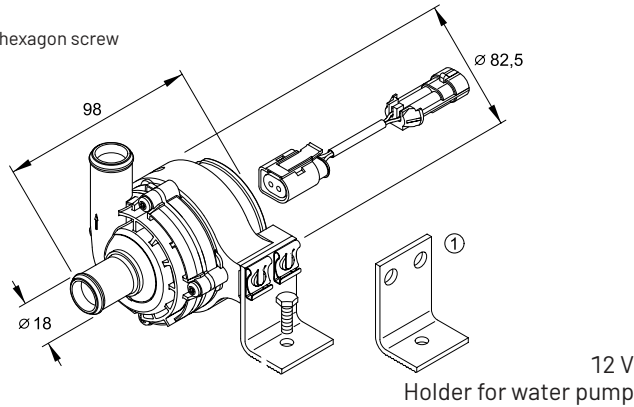
Water pump 12V for Hydronic S3 Economy

~ = Compatible only with Hydronic S3 Economy



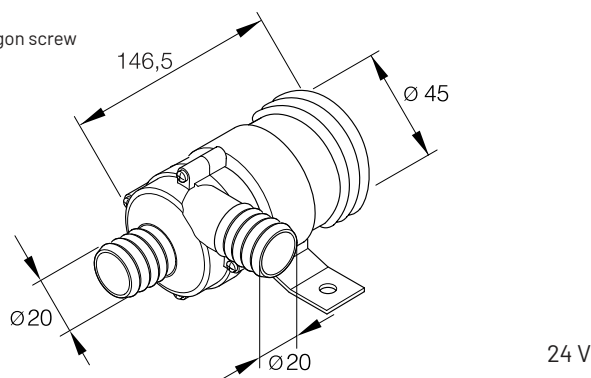
| Hydronic S3 (4 – 6 kW) | Hydronic M3 (8 – 12 kW) / M2 | Hydronic L3 (16 – 35 kW) / L2 | Order no.                            |
|------------------------|------------------------------|-------------------------------|--------------------------------------|
|                        |                              |                               | 25 2652 25 00 00<br>22 1000 51 39 00 |

Water pump  
with holder installed, adapter cable, M6x12 hexagon screw  
Water flow rate 850 l/h at 0.1 bar



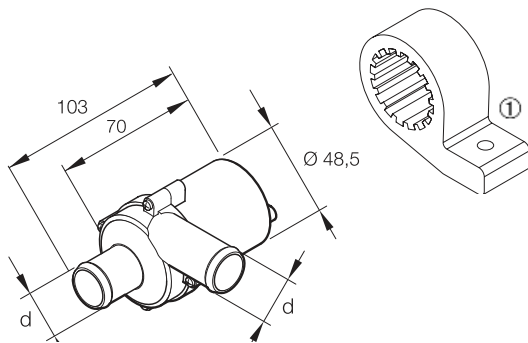
|  |  |  |                                      |
|--|--|--|--------------------------------------|
|  |  |  | 25 2217 27 00 00<br>25 2217 27 01 00 |
|--|--|--|--------------------------------------|

Water pump  
with holder installed, adapter cable, M6x12 hexagon screw  
Water flow rate 850 l/h at 0.1 bar



|  |  |  |                  |
|--|--|--|------------------|
|  |  |  | 25 2218 25 00 00 |
|--|--|--|------------------|

Flowtronic 800 S water pump  
Water flow rate 820 l/h at 0.1 bar



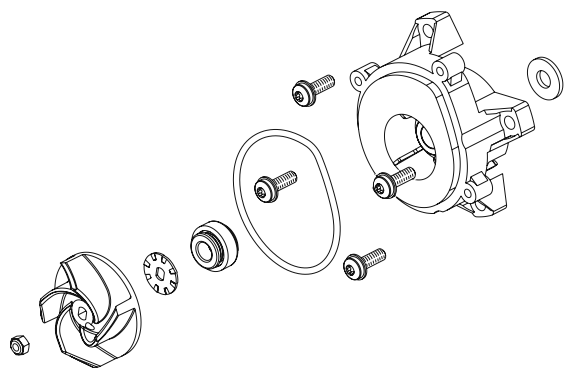
①  
For holders, see page 119

~ = Suitable exclusively for Hydronic 1 and Hydronic 2 models; for Hydronic S3 Economy (12V): EasyScan programming required (specification ans an uncontrolled pump)

|                       |   |                  |
|-----------------------|---|------------------|
| 12 V, d = 20 mm       | ~ | 25 2275 25 00 00 |
| 24 V, d = 18 mm       | ~ | 25 2218 25 00 00 |
| Holder for water pump | ~ | 22 1000 50 07 00 |



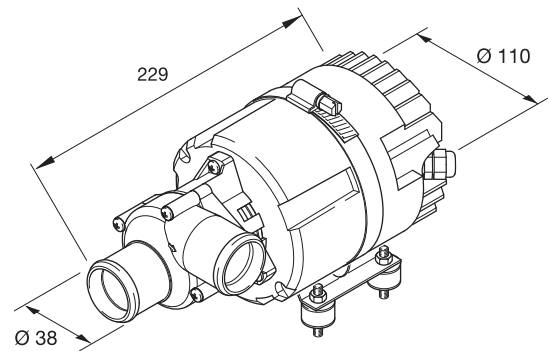
Flowtronic 5000 spare part kit  
For water pump 25 2488 26 00 00



| Hydronic S3 (4 – 6 kW) | Hydronic M3 (8 – 12 kW) / M2 | Hydronic L3 (16 – 35 kW) / L2 | Order no. |
|------------------------|------------------------------|-------------------------------|-----------|
|------------------------|------------------------------|-------------------------------|-----------|

25 2488 99 26 10

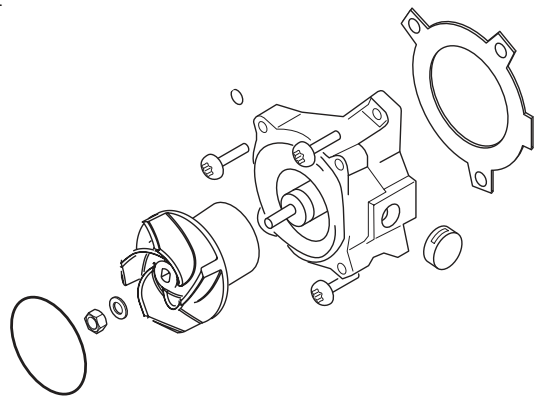
Water pump Flowtronic 6000 SC  
With magnetic coupling and holder  
Water flow rate 6000 l/h at 0.4 bar



24 V

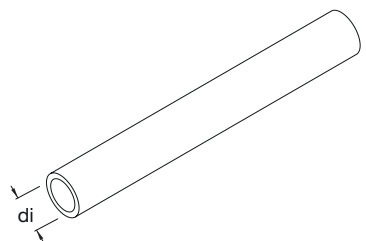
25 2488 25 00 00

Flowtronic 6000 SC spare part kit



25 2488 99 25 10

Water hose  
2 m straight (wall thickness 3.5 mm)



~ = 3.5 mm wall thickness permissible only for 12V passenger car applications

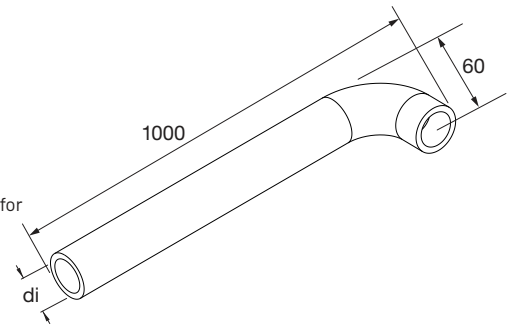
di = 20 mm, L = 2 m

20 1673 80 00 06

7 | Water-conducting parts

Water hose  
1 m curved (wall thickness 3.5 mm)

~ = 3.5 mm wall thickness permissible only for 12V passenger car applications



di = 20 mm

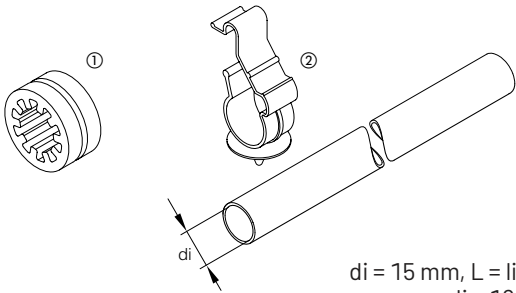
| Hydronic S3 (4 – 6 kW) | Hydronic M3 (8 – 12 kW) / M2 | Hydronic L3 (16 – 35 kW) / L2 | Order no.        |
|------------------------|------------------------------|-------------------------------|------------------|
|                        |                              |                               | 20 1673 80 00 05 |

Water hose  
Wall thickness 4.5 mm

①  
For spacer ring, see page 121

②  
Water hose fastening page 120

~ = Check connection diameter

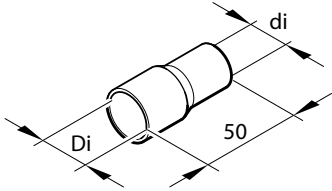


di = 15 mm, L = linear meters  
di = 18 mm, L = 2 m  
di = 20 mm, L = 2 m  
di = 38 mm, L = linear meters

|   |   |            |
|---|---|------------|
| ~ |   | 360 75 020 |
| ~ | ~ | 360 75 407 |
| ~ | ~ | 360 75 408 |
|   |   | 360 75 413 |

Reducer hose

~ = Check connection diameter

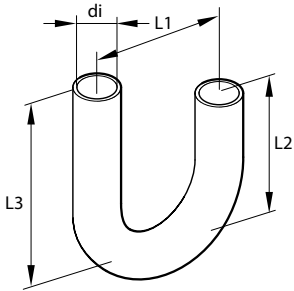


Di = 20 mm, di = 15 mm  
Di = 20 mm, di = 18 mm

|   |   |                  |
|---|---|------------------|
| ~ | ~ | 20 1533 88 00 04 |
|   |   | 20 1528 88 00 02 |

Water hose

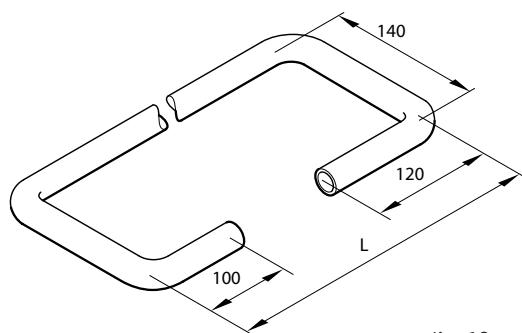
~ = Check connection diameter



di = 15 mm / 180°, L1 = 50 mm, L2 = 50 mm, L3 = 75 mm  
di = 20 mm / 180°, L1 = 50 mm, L2 = 50 mm, L3 = 83 mm  
di = 18 mm / 180°, L1 = 45 mm, L2 = 55.5 mm, L3 = 60.5 mm

|   |   |                  |
|---|---|------------------|
| ~ | ~ | 20 1522 88 00 01 |
| ~ |   | 20 1534 88 00 02 |
|   | ~ | 360 75 043       |

~ = Check connection diameter



$d_i = 18 \text{ mm}, L = 500 \text{ mm}$   
 $d_i = 18 \text{ mm}, L = 2,000 \text{ mm}$   
 $d_i = 20 \text{ mm}, L = 2,000 \text{ mm}$

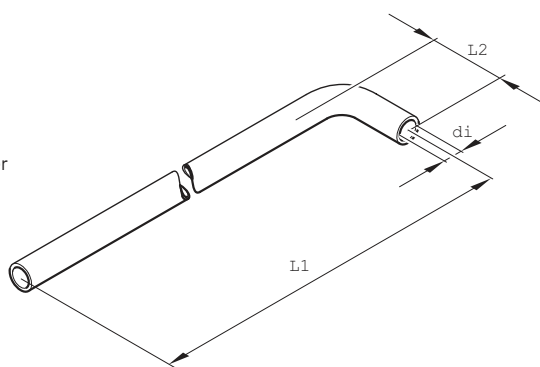
| Hydronic S3 (4 – 6 kW)                                                                | Hydronic M3 (8 – 12 kW) / M2                                                          | Hydronic L3 (16 – 35 kW) / L2 | Order no.         |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------|-------------------|
|    |    |                               | 24 0132 00 00 01  |
|    |    |                               | 20 1690 81 00 01  |
|    |    |                               | 22 1000 10 01 06* |
|    |    |                               | 25 2526 80 01 02  |
|  |  |                               | 20 1528 88 00 01  |
|  |  |                               | 20 1533 88 00 05  |
|  |  |                               | 20 1645 80 00 01  |
|  |  |                               | 20 1645 89 00 01  |
|  |  |                               | 24 0310 80 00 02  |
|  |  |                               | 22 1000 10 26 00  |

Technical drawing of a U-shaped component. The drawing shows a side view of a U-shaped part with a central rectangular cutout. The dimensions are as follows: the total width is 120; the height of the left vertical leg is 90; the width of the central cutout is 50; the inner diameter of the circular hole at the bottom is labeled  $d_i$ ; the total height of the right vertical leg is 140; and the height of the bottom horizontal base is 50.

$$d_i = 20 \text{ mm}$$

25 2526 80 01 02

~ = Check connection diameter



$d_i = 15 \text{ mm}$ ,  $L_1 = 1,000 \text{ mm}$ ,  $L_2 = 50 \text{ mm}$   
 $d_i = 15 \text{ mm}$ ,  $L_1 = 500 \text{ mm}$ ,  $L_2 = 50 \text{ mm}$   
 $d_i = 18 \text{ mm}$ ,  $L_1 = 1,000 \text{ mm}$ ,  $L_2 = 50 \text{ mm}$   
 $d_i = 18 \text{ mm}$ ,  $L_1 = 840 \text{ mm}$ ,  $L_2 = 240 \text{ mm}$   
 $d_i = 20 \text{ mm}$ ,  $L_1 = 120 \text{ mm}$ ,  $L_2 = 60 \text{ mm}$

Technical drawing of a 90-degree elbow fitting. The drawing shows the fitting from an isometric perspective. Two dimension lines are present: one horizontal line at the top indicating a length of 55, and one vertical line on the left indicating a height of 55. The fitting has a flange on the top arm and a flange on the bottom arm.

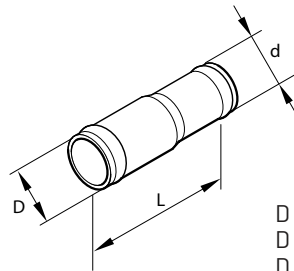
Connection dimension: 20 mm outer diameter

22 1000 10 26 00



Connection pipe  
Brass

~ = Check connection diameter

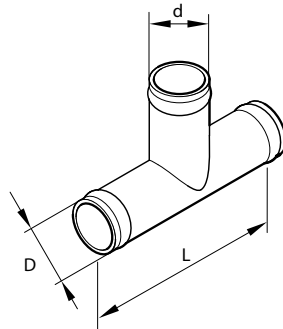


D = 18 mm, d = 15 mm, L = 60 mm  
D = 20 mm, d = 16 mm, L = 60 mm  
D = 22 mm, d = 15 mm, L = 60 mm  
D = 22 mm, d = 18 mm, L = 60 mm  
D = 22 mm, d = 20 mm, L = 60 mm

| Hydronic S3 (4 – 6 kW) | Hydronic M3 (8 – 12 kW) / M2 | Hydronic L3 (16 – 35 kW) / L2 | Order no.        |
|------------------------|------------------------------|-------------------------------|------------------|
| ~                      | ~                            | ~                             | 20 1645 80 02 01 |
| ~                      | ~                            | ~                             | 24 0176 89 00 01 |
| ~                      | ~                            | ~                             | 25 1214 89 00 11 |
| ~                      | ~                            | ~                             | 20 1645 89 00 05 |
| ~                      | ~                            | ~                             | 25 1214 89 00 04 |

T-piece  
Plastic

~ = Check connection diameter

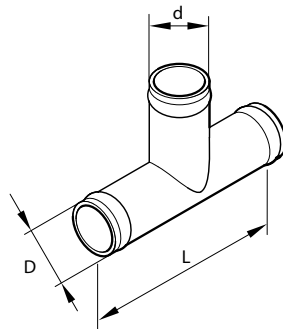


D = 18 mm, d = 18 mm, L = 84 mm  
D = 20 mm, d = 18 mm, L = 84 mm  
D = 20 mm, d = 20 mm, L = 84 mm

|   |   |   |                  |
|---|---|---|------------------|
| ~ | ~ | ~ | 22 1000 10 21 00 |
| ~ | ~ | ~ | 22 1000 10 23 00 |
| ~ | ~ | ~ | 22 1000 10 22 00 |

T-piece  
Brass

~ = Check connection diameter

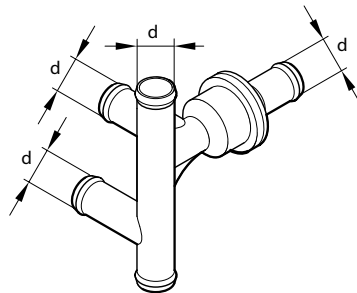


D = 18 mm, d = 15 mm, L = 60 mm  
D = 18 mm, d = 18 mm, L = 75 mm  
D = 20 mm, d = 18 mm, L = 75 mm  
D = 20 mm, d = 20 mm, L = 75 mm

|   |   |   |                  |
|---|---|---|------------------|
| ~ | ~ | ~ | 25 1214 89 16 00 |
| ~ | ~ | ~ | 20 1645 89 10 00 |
| ~ | ~ | ~ | 20 1645 89 11 00 |
| ~ | ~ | ~ | 20 1673 80 11 00 |

Combi valve with thermostat function  
With five connections

\* not suitable for Hydronic 2 Comfort  
Also required: T-piece, page 72



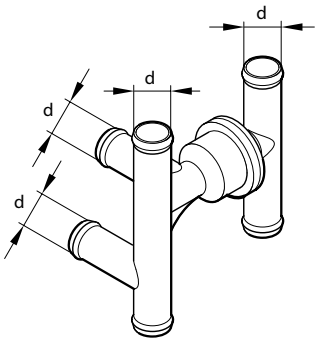
\* d = 20 mm

|   |   |   |                  |
|---|---|---|------------------|
| ~ | ~ | ~ | 25 2014 80 72 00 |
|---|---|---|------------------|

7 | Water-conducting parts

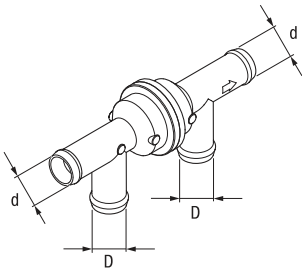
Combi valve with thermostat function  
With six connections

\* not suitable for Hydronic 2 Comfort



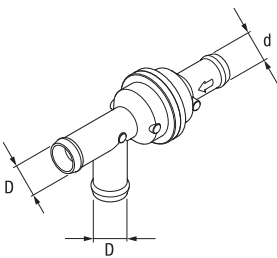
d = 20 mm

Water check valve



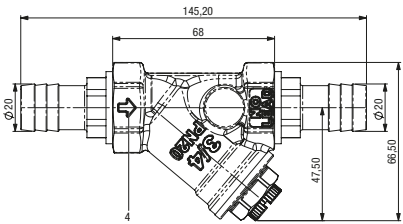
D = 20 mm, d = 18 mm  
D = 20 mm, d = 20 mm

Water check valve



D = 20 mm, d = 18 mm  
D = 20 mm, d = 20 mm

Water filter for Hydronic M  
Protects the water pump from soiling, thereby ensuring the heater's function.

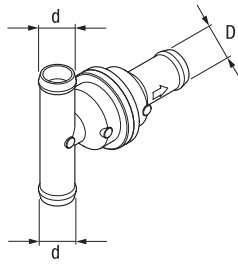


Supplier:  
Eberspächer AB  
Kardanvägen 34  
SE - 461 38 Trollhättan  
Sweden  
Phone: +46(0)8 6831-100  
info-se@eberspaecher.com

D = 20 mm, d = 18 mm

| Hydronic S3 (4 - 6 kW) | Hydronic M3 (8 - 12 kW) / M2 | Hydronic L3 (16 - 35 kW) / L2 | Order no.        |
|------------------------|------------------------------|-------------------------------|------------------|
|                        |                              |                               | 25 2014 80 62 00 |
|                        |                              |                               | 22 1000 10 11 00 |
|                        |                              |                               | 22 1000 10 10 00 |
|                        |                              |                               | 22 1000 10 12 00 |
|                        |                              |                               | 22 1000 10 09 00 |
|                        |                              |                               | 24 6003 1        |

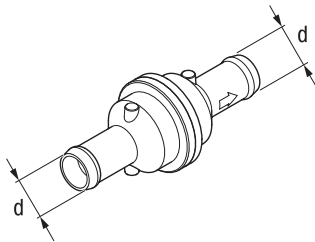
Water check valve



D = 20 mm, d = 18 mm  
D = 20 mm, d = 20 mm

| Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.        |
|-----------------------|-----------------------------|------------------------------|------------------|
|                       |                             |                              |                  |
|                       |                             |                              | 22 1000 10 13 00 |
|                       |                             |                              | 22 1000 10 07 00 |

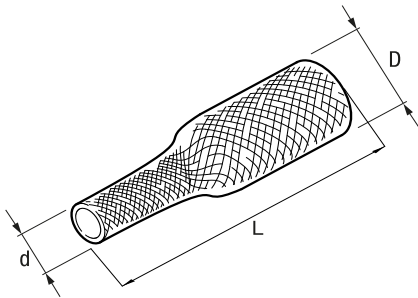
Water check valve



d = 18 mm  
d = 20 mm

|  |  |  |                  |
|--|--|--|------------------|
|  |  |  |                  |
|  |  |  | 22 1000 10 14 00 |
|  |  |  | 22 1000 10 08 00 |

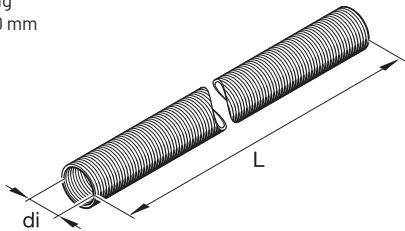
Heat-shrink fit hose  
Anti-chafing protector for water hose



L = 1m, Ø 40 mm  
shrunk to max. Ø 20 mm

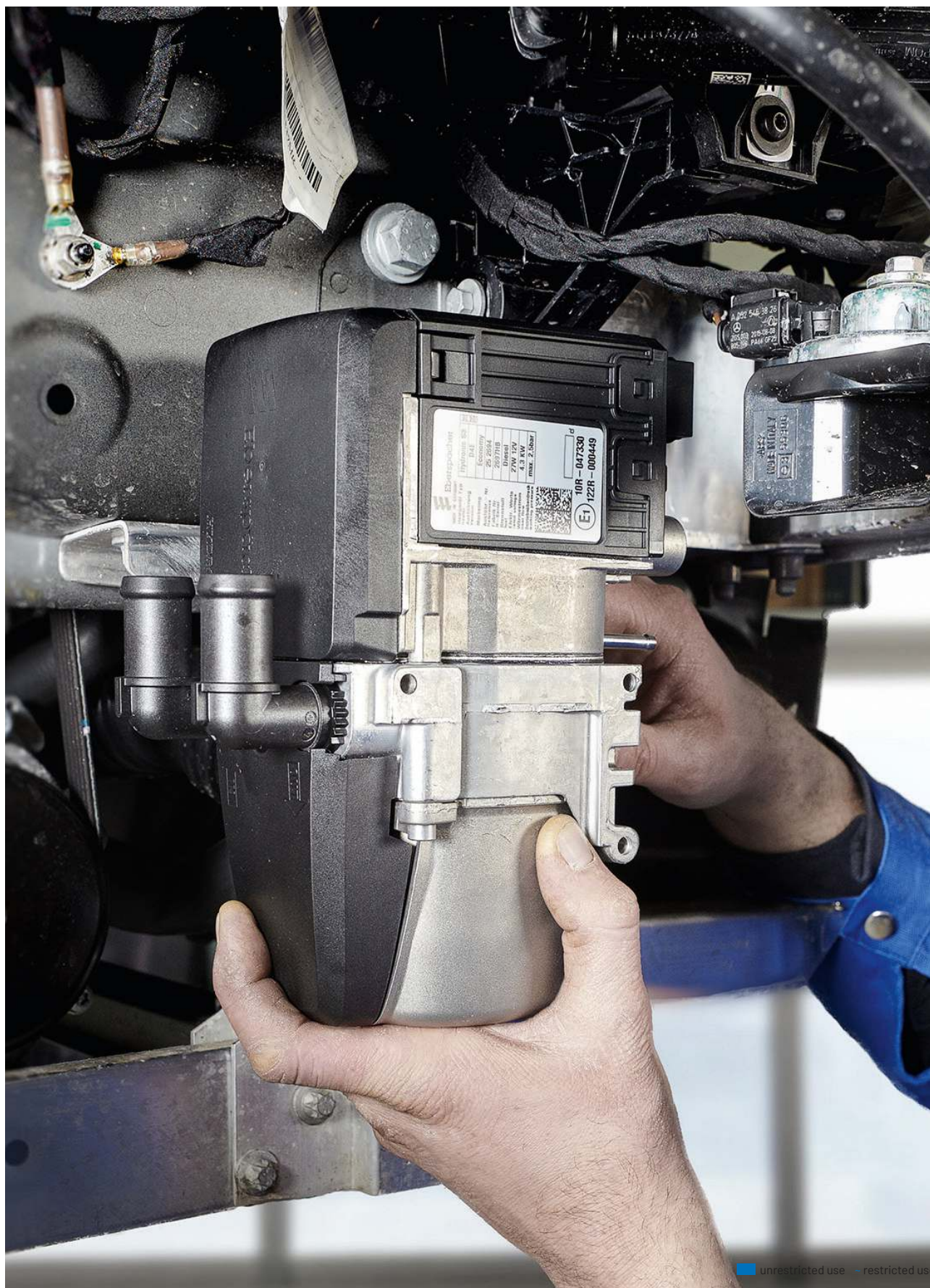
|  |  |  |            |
|--|--|--|------------|
|  |  |  |            |
|  |  |  | 360 00 333 |

Safety hose  
Aluminum/paper/plastic temperature/anti-chafing  
protector for water hoses with Ø 18 mm and Ø 20 mm



di = 30 mm, L = 2 m

|  |  |  |                  |
|--|--|--|------------------|
|  |  |  |                  |
|  |  |  | 10 2114 25 02 00 |



# 8 | Air-conducting parts



## General information:

- Heating-air throughput is at its highest in a heater if the air flow is unimpeded. Heating-air-conducting parts reduce the heating-air throughput.
- In order to give you the opportunity to check that the installation you have planned does not reduce the heating-air throughput to an impermissible level, we have calculated a heater guide number for each heater and a line guide number for the heating-air-conducting parts.
- The total of the line guide numbers of the heating-air-conducting parts connected to the heater must not be greater than the heater guide number, as otherwise the air outlet temperature would be impermissibly high and the overheating sensor would respond.
- If the total of the line guide numbers is greater than the heater guide number, the total can be reduced by selecting a larger diameter for the air ducts.

### Rule of thumb:

Double the cross-section or two identical parts installed in parallel = 1/4 of the guide number.

Example:

Hose Ø 60,

Cross-section area  $A = 28.27 \text{ cm}^2$ , guide number 1.0

Hose Ø 75,

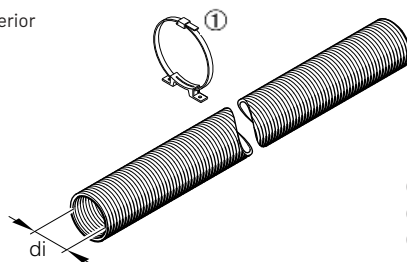
Cross-section area  $A = 44.2 \text{ cm}^2$ , guide number 0.25

With smooth welded pipes, the line guide number is only half of the flexible hose with the same diameter (i.e. double pipe length).

# 8 | Air-conducting parts

## Flexible pipe (linear m)(1)

Aluminum/paper/plastic, for heating-air ducting in interior



①

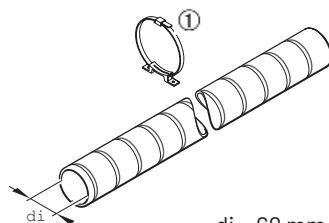
For air hose fastening, see page 121

~ = Check connection diameter

|             | Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Order no.        |
|-------------|----------------------|--------------------|----------------------|---------------|------------------|
| di = 50 mm  | ~                    | ~                  |                      |               | 10 2114 29 00 00 |
| di = 60 mm  | ~                    | ~                  |                      |               | 10 2114 31 00 00 |
| di = 75 mm  | ~                    | ~                  |                      |               | 10 2114 34 00 00 |
| di = 90 mm  | ~                    | ~                  | ~                    |               | 10 2114 37 00 00 |
| di = 100 mm |                      | ~                  | ~                    | ~             | 10 2114 38 00 00 |

## Flexible hose (2)

Plastic hose with metal spiral, suitable for outside installation



①

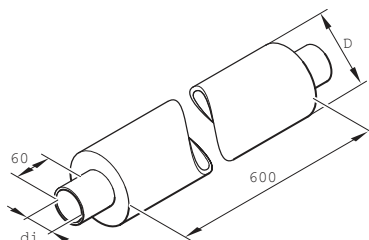
For air hose fastening, see page 121

~ = Check connection diameter

|                              |   |   |   |   |            |
|------------------------------|---|---|---|---|------------|
| di = 60 mm (1-meter pieces)  | ~ |   |   |   | 360 00 165 |
| di = 75 mm (1-meter pieces)  | ~ | ~ |   |   | 360 00 012 |
| di = 90 mm (1-meter pieces)  |   | ~ | ~ |   | 360 00 013 |
| di = 100 mm (1-meter pieces) |   | ~ | ~ | ~ | 360 00 014 |

## Silencer (3)

Hot air, aluminum

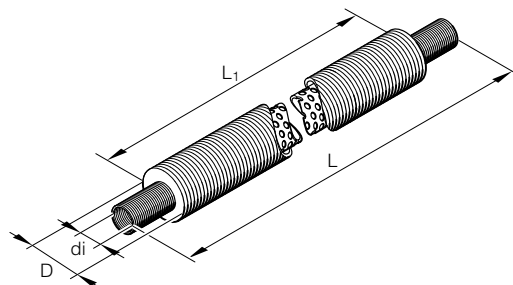


~ = Check connection diameter

|                         |   |   |   |   |                  |
|-------------------------|---|---|---|---|------------------|
| di = 75 mm, D = 120 mm  | ~ |   |   |   | 25 1226 89 15 00 |
| di = 90 mm, D = 140 mm  | ~ | ~ | ~ |   | 25 1226 89 17 00 |
| di = 100 mm, D = 150 mm |   | ~ | ~ | ~ | 25 1226 89 56 00 |

## Intake silencer (4)

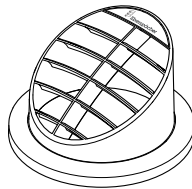
Aluminum/paper/plastic heating-air intake



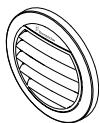
|                                                 |   |  |  |  |            |
|-------------------------------------------------|---|--|--|--|------------|
| di = 75 mm, D = 110 mm, L = 600 mm, L1 = 300 mm | ~ |  |  |  | 330 00 072 |
|-------------------------------------------------|---|--|--|--|------------|

rotating, for fitting, see Item 16

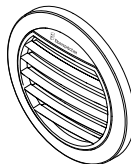
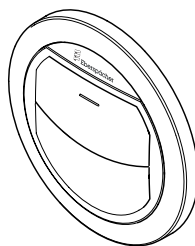
rotating, for fitting, see Item 16



rotating, for fitting, see Item 16



rotating, for fitting, see Item 16

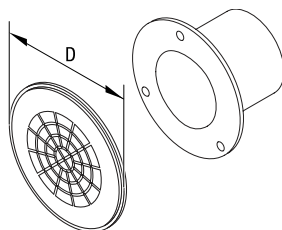


|                  | Airtronic S (2.2 kW)                                                                                                                                                                                                                                                                                                                                    | Airtronic M (4 kW)                                                                                                                                                                                                                                                                                                                                      | Airtronic L (5.5 kW)                                                                                                                                                                                                                                                                                                                                    | Airtronic XL3                                                                                                                                                                                                                                                                                                                                           | Order no.                                                                    |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| k<br>e<br>k<br>e |             |             |             |             | 22 1000 01 00 56<br>22 1000 01 00 57<br>22 1000 01 00 60<br>22 1000 01 00 61 |
| k<br>e<br>k<br>e |             |             |             |             | 22 1000 01 00 44<br>22 1000 01 00 45<br>22 1000 01 00 52<br>22 1000 01 00 53 |
| k<br>e<br>k<br>e |     |     |     |     | 22 1000 01 00 72<br>22 1000 01 00 73<br>22 1000 01 00 76<br>22 1000 01 00 77 |
| k<br>e<br>k<br>e |     |     |     |     | 22 1000 01 00 40<br>22 1000 01 00 41<br>22 1000 01 00 48<br>22 1000 01 00 49 |

# 8 | Air-conducting parts

## Grille (13.1)

\* suitable for Item 18



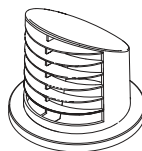
\* D = 93 mm, L = 75, d = 60 mm  
Nickel-plated

\* D = 93 mm, L = 75, d = 60 mm  
Plastic

| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Order no.        |
|----------------------|--------------------|----------------------|---------------|------------------|
|                      |                    |                      |               | 25 1226 89 05 00 |
|                      |                    |                      |               | 22 1000 01 00 01 |

## Upright air outlet 90° (14)

rotating, for fitting, see Item 16



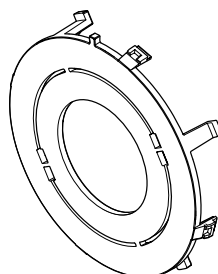
~ = Check connection diameter

suitable for fitting Ø 50 / 60 mm, black  
suitable for fitting Ø 50 / 60 mm, white  
suitable for fitting Ø 75 / 90 mm, black  
suitable for fitting Ø 75 / 90 mm, white

|  |  |  |  |                  |
|--|--|--|--|------------------|
|  |  |  |  | 22 1000 01 00 64 |
|  |  |  |  | 22 1000 01 00 65 |
|  |  |  |  | 22 1000 01 00 68 |
|  |  |  |  | 22 1000 01 00 69 |

## Air flow regulating element (15)

see page 31



\* for fitting, Item 16, order no. 22 1000 01 00 35

\*\* for fitting, Item 16, order no. 22 1000 01 00 36

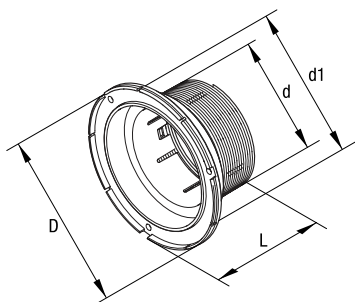
\*\*\* for fitting, Item 16, order no. 22 1000 01 00 37

\* Plastic, Ø 60 mm  
\*\* Plastic, Ø 75 mm  
\*\*\* Plastic, Ø 90 mm

|  |  |  |  |                  |
|--|--|--|--|------------------|
|  |  |  |  | 22 1000 01 00 79 |
|  |  |  |  | 22 1000 01 00 80 |
|  |  |  |  | 22 1000 01 00 81 |

## Fitting (16)

for air outlet, Items 10, 11, 12, 13 and 14



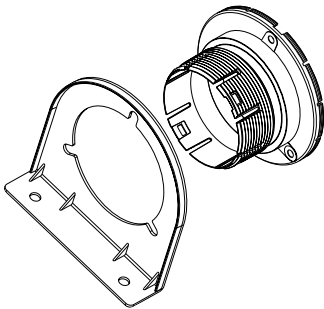
d1 = core drill bit diameter

~ = Check connection diameter

d = 50 mm, d1 = 67 mm, D = 89 mm, L = 39 mm, black  
d = 60 mm, d1 = 67 mm, D = 89 mm, L = 40 mm, black  
d = 75 mm, d1 = 92 mm, D = 115 mm, L = 42 mm, black  
d = 90 mm, d1 = 92 mm, D = 115 mm, L = 40 mm, black

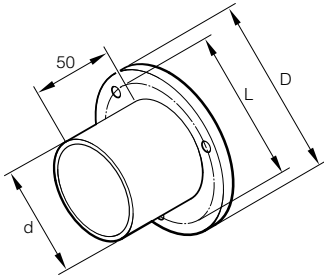
|  |  |  |  |                  |
|--|--|--|--|------------------|
|  |  |  |  | 22 1000 01 00 34 |
|  |  |  |  | 22 1000 01 00 35 |
|  |  |  |  | 22 1000 01 00 36 |
|  |  |  |  | 22 1000 01 00 37 |

Holder for fitting **(17)**  
for fitting, Item 16 (d = 60 mm, order no. 22 1000 01 00 35)



d = 60 mm ~ 22 1000 01 14 00

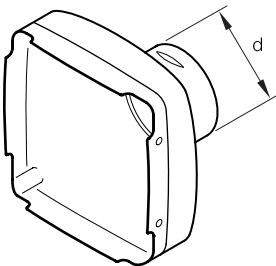
Hose fitting **( 18)**  
Suitable for grille, Item 13.1\*



\* D = 93 mm  
~ = Check connection diameter

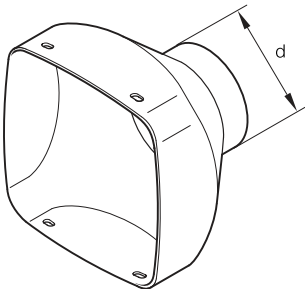
d = 50 mm, D = 97 mm, L = 75 mm ~ 20 1575 80 08 01  
d = 60 mm, D = 97 mm, L = 75 mm ~ 20 1577 89 06 01

Scoop **(21)**



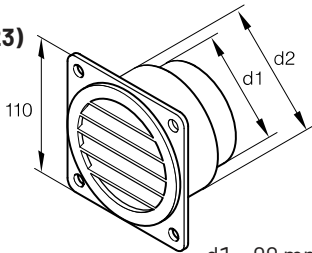
d = 60 mm ~ 22 1000 01 00 16  
d = 75 mm ~ 22 1000 01 00 17  
d = 75 mm ~ 22 1000 01 00 18  
d = 90 mm ~ 22 1000 01 00 19  
d = 90 mm ~ 22 1000 01 00 86  
d = 100 mm ~ 22 1000 01 00 87

Scoop for Airtronic D5 **(22)**



d = 90 mm ~ 25 1729 01 09 00

Air outlet for Airtronic XL (rotatable) **(23)**  
rotating

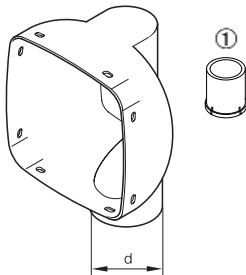


d1 = 90 mm, d2 = 100 mm, schwarz ~ 20 1609 80 09 00  
d1 = 75 mm; d2 = 100mm ~ 22 1050 89 2100

# 8 | Air-conducting parts

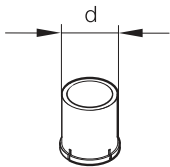
## Ball-shaped scoop for Airtronic D5 (30)

①  
Connection fitting, see Item 31



d = 90 mm      25 1729 89 10 00

## Connection fitting (31) For ball-shaped scoop, Item 30 / 32



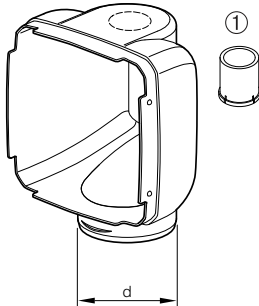
d = 50 mm      22 1000 01 00 04

## Ball-shaped scoop (32)

Important! Take higher line guide number into account

①  
Connection fitting, Item 31

\* Cannot be used with the Airtronic D4 Plus



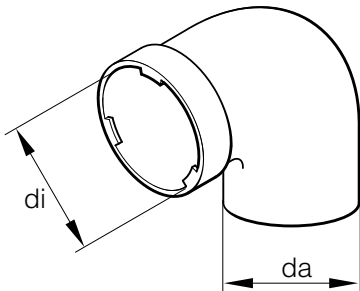
d = 60 mm      22 1000 01 00 20  
d = 75 mm      22 1000 01 00 28  
d = 75 mm      22 1000 01 00 22  
d = 90 mm      22 1000 01 00 23

## Ball-shaped scoop for Airtronic L3 (32a)



d = 90 mm      22 1000 01 00 88

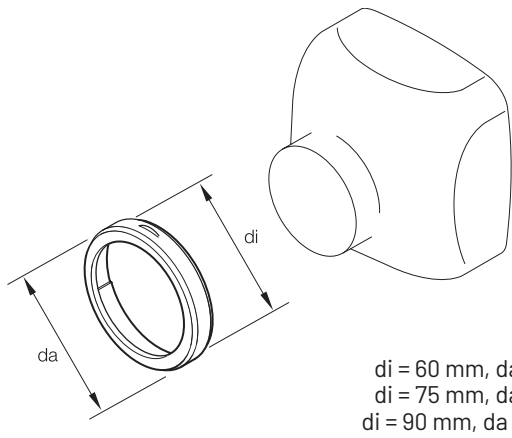
## Pipe elbow, 90° (33)



di = 60 mm, da = 60 mm      25 1688 89 00 01  
di = 75 mm, da = 75 mm      25 1482 89 00 05

Ring (34)

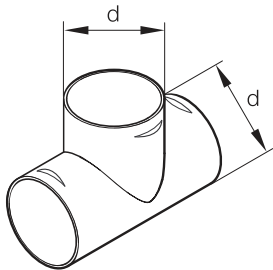
Protective grille (Item 17) with di = 90 mm, can be used as an adapter - remove grille



|                         |  |  |  |  |                  |
|-------------------------|--|--|--|--|------------------|
| di = 60 mm, da = 75 mm  |  |  |  |  | 22 1000 01 00 08 |
| di = 75 mm, da = 90 mm  |  |  |  |  | 25 1822 89 00 01 |
| di = 90 mm, da = 100 mm |  |  |  |  | 20 1607 80 00 01 |

T-junction (35)

~ = Check connection diameter

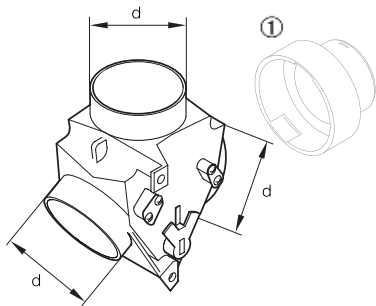


|                    |   |   |  |  |                  |
|--------------------|---|---|--|--|------------------|
| Metal, d = 50 mm   | ~ | ~ |  |  | 20 1575 89 18 00 |
| Plastic, d = 60 mm |   |   |  |  | 25 1688 89 00 02 |
| Plastic, d = 75 mm |   |   |  |  | 22 1000 01 00 27 |
| Plastic, d = 90 mm |   |   |  |  | 22 1000 01 00 26 |
| Metal, d = 100 mm  | ~ | ~ |  |  | 20 1667 89 03 00 |

Butterfly valve (40)

① Adapter, see Item 45

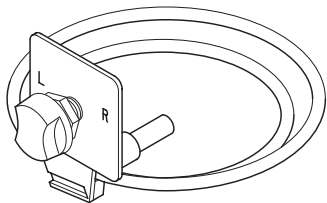
~ = Check connection diameter



|           |   |  |  |  |            |
|-----------|---|--|--|--|------------|
| d = 60 mm |   |  |  |  | 330 00 174 |
| d = 90 mm | ~ |  |  |  | 330 00 175 |

Control unit (41)

For butterfly valve, Item 40, 2 m long

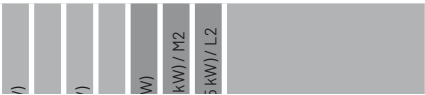


|  |  |  |  |  |                  |
|--|--|--|--|--|------------------|
|  |  |  |  |  | 22 1000 01 03 00 |
|--|--|--|--|--|------------------|





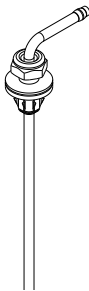
## 9 | Fuel-conducting parts



General information:

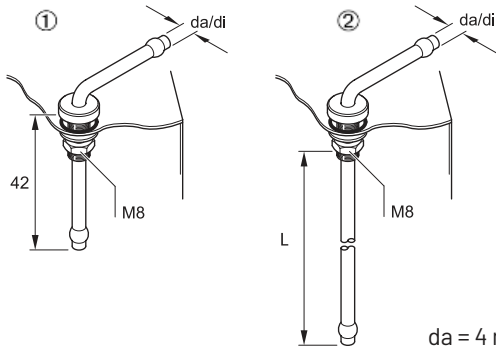
- Protect fuel lines, filters and metering pumps from impermissible heat levels; do not install near silencers or exhaust pipes.
- Take the rear axle suspension travel into account when installing fuel lines, fuel filters and metering pumps near the rear axle.
- When cutting fuel hoses and pipes, be sure to use a sharp knife.
- Cut surfaces must have no dents or burrs.
- Please also refer to the safety information on this section in the heater documentation.

EasyFix tank connection  
 For wall thicknesses from 2.8 to 3.5 mm



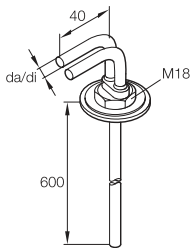
da = 4 mm, di = 2 mm, L = 300 mm

Tank connection  
 For passenger cars with an inner tank pump



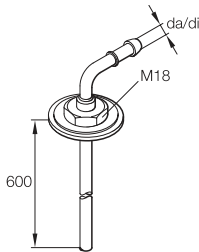
① da = 4 mm, di = 2 mm  
 da = 4 mm, di = 2 mm, L = 295 mm

Tank connection with return  
 For commercial vehicles



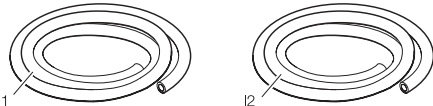
da = 6 mm, di = 4 mm

Tank connection  
 For commercial vehicles



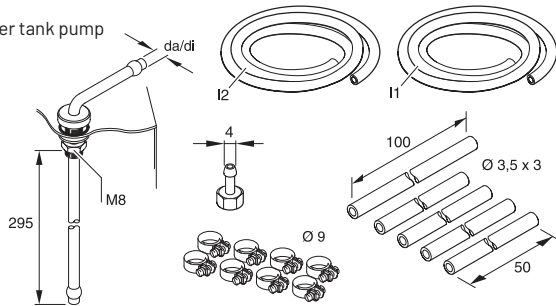
da = 6 mm, di = 2 mm  
 da = 6 mm, di = 4 mm

Kit – fuel lines for E85  
 Only for Hydronic 2–B5 S



I1 = Pipe Ø 4x1,25; L = 6 m, black / I2 = pipe Ø 4x1; L = 2 m, black

Tank connection kit  
 For passenger cars with an inner tank pump

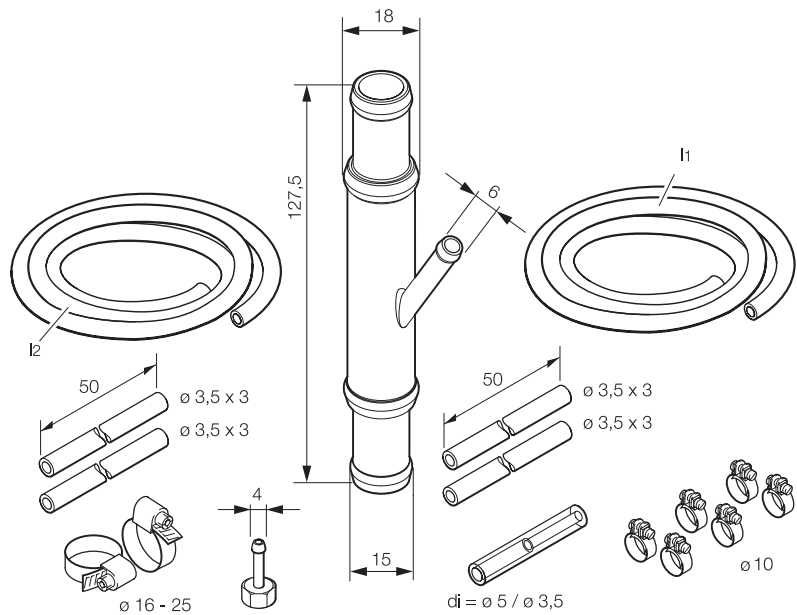


I1 = Pipe Ø 4x1,25; L = 6 m / I2 = pipe Ø 4x1; L = 6 m / da = 4 mm, di = 2 mm

| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.        |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|------------------|
|                      |                    |                      |               |                       |                             |                              | 22 1000 20 45 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 20 15 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 20 16 00 |
|                      |                    |                      |               |                       |                             |                              | 25 1226 89 40 00 |
|                      |                    |                      |               |                       |                             |                              | 25 1226 89 50 00 |
|                      |                    |                      |               |                       |                             |                              | 25 1156 30 00 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 20 31 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 20 13 00 |

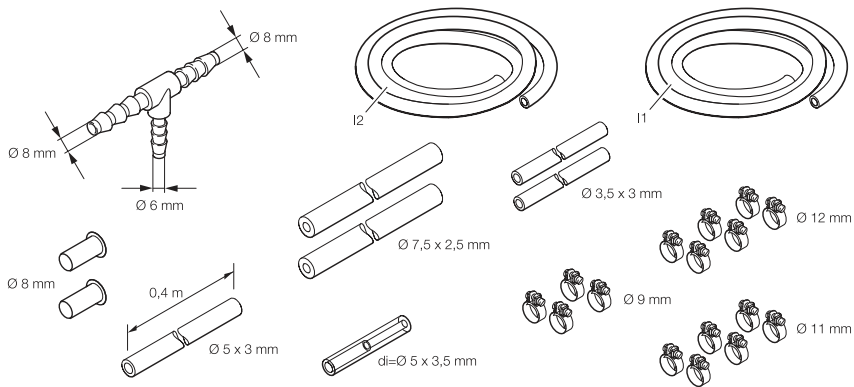
9 | Fuel-conducting parts

Fuel supply kit  
Installation in the tank ventilation hose



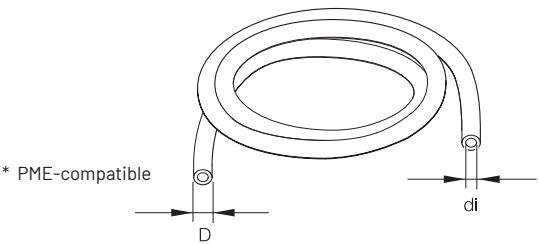
I1 = Steel pipe Ø 4x1, L = 1 m, / I2 = plastic pipe Ø 4x1, L = 2 m

Fuel supply kit  
Tank extraction feed line



I1 = Pipe Ø 4x1.25; L = 6 m / I2 = pipe Ø 6x1; L = 2 m

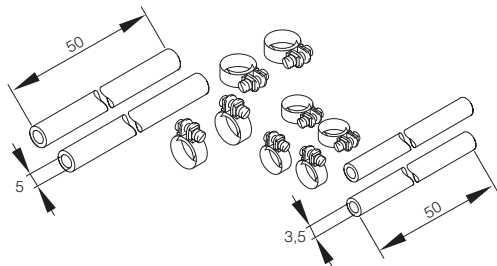
Fuel hose (linear m)  
Rubber



- di = 3.5 mm, D = 9.50 mm
- \* di = 3.5 mm, D = 9.50 mm
- di = 5.0 mm, D = 11.0 mm
- \* di = 5.0 mm, D = 11.0 mm
- \* di = 7.5 mm, D = 13.5 mm
- \* di = 9.0 mm, D = 15.0 mm

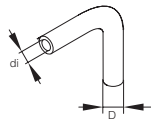
- 360 75 300
- 360 75 400
- 360 75 350
- 360 75 401
- 360 75 402
- 360 75 404

Fuel supply kit  
For installing fuel line  
in boat engine compartments



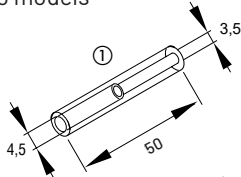
Fire-resistant hoses according to DIN EN ISO 14859

Fuel hose 105° elbow  
PME-compatible



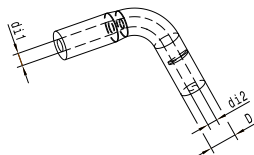
$di = 3.5\text{ mm}$ ,  $D = 9.5\text{ mm}$

Adapter for Hydronic S3 and all Airtronic 3 models



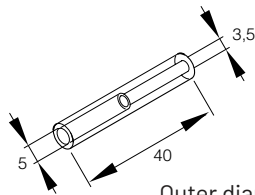
Outer diameter  $D = 10,5\text{ mm}$

Adapter for Hydronic S3  
and all Airtronic 3 models, elbow



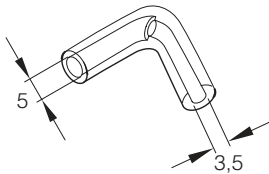
$D = 9.5\text{ mm}$ ,  $di1 = 4.5\text{ mm}$ ,  $di2 = 3.5\text{ mm}$

Adapter

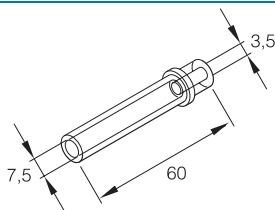


Outer diameter  $D = 10\text{ mm}$

Adapter 105° elbow  
PME-compatible



Outer diameter  $D = 10\text{ mm}$

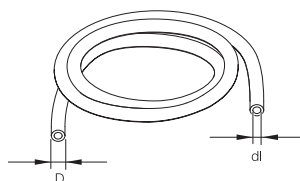


Outer diameter  $D = 12\text{ mm}$

| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.        |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|------------------|
|                      |                    |                      |               |                       |                             |                              | 22 1000 20 10 00 |
|                      |                    |                      |               |                       |                             |                              | 25 1888 80 01 01 |
|                      |                    |                      |               |                       |                             |                              | 25 2635 05 00 07 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 20 41 00 |
|                      |                    |                      |               |                       |                             |                              | 25 1888 80 01 02 |
|                      |                    |                      |               |                       |                             |                              | 25 2110 05 03 01 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 20 30 00 |

# 9 | Fuel-conducting parts

Fuel pipe (linear m)  
Plastic



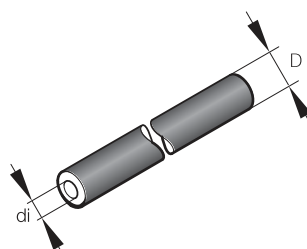
\* Suitable only for gasoline version of the Airtronic S3 B2L

Natural-colored, di = 1.5 mm, D = 4 mm\*  
Natural-colored, di = 2 mm, D = 4 mm  
Ethanol resistant, di = 1,5 mm, D = 4 mm  
Ethanol resistant, di = 2 mm, D = 4 mm  
Blue, di = 2 mm, D = 4 mm  
Black, di = 2 mm, D = 6 mm  
Blue, di = 4 mm, D = 6 mm

Order no.

890 31 118  
890 31 055  
890 31 139  
890 31 138  
890 31 054  
890 31 125  
890 31 101

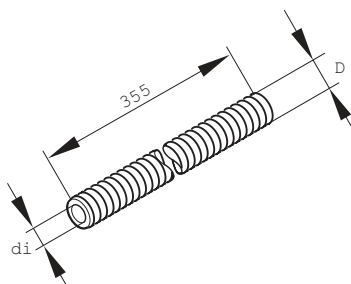
Foam rubber hose (linear m)  
Chafing protection and soundproofing for fuel pipe



di = 5 mm, D = 11 mm

360 75 200

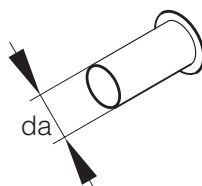
Heat protection hose  
for fuel pipe  
Aluminum clad with fiberglass cloth  
Also suitable for electrical lines



di = 10 mm, D = 13 mm

360 00 183

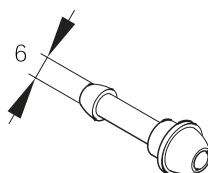
Reinforcing sleeve  
Brass, for plastic fuel pipe  
10 per pack



da = 4 mm  
for pipe 6x1  
da = 6 mm  
for pipe 8x1  
da = 8 mm  
for pipe 10x1

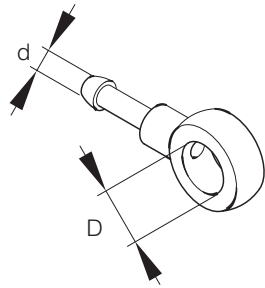
22 1000 20 01 00  
22 1000 20 02 00  
22 1000 20 03 00

Hose nipple  
Straight, for M 10 x 1 union nut



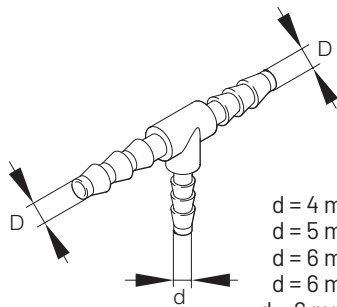
25 1351 88 01 01

Ring fitting with hose connection



d = 5 mm, D = 8 mm

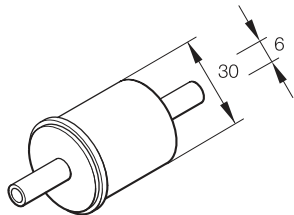
T-piece  
Plastic



~ = Observe connection diameter

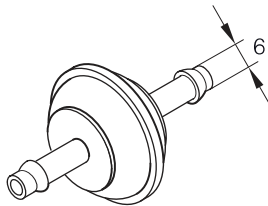
d = 4 mm, D = 8 mm  
 d = 5 mm, D = 5 mm  
 d = 6 mm, D = 6 mm  
 d = 6 mm, D = 8 mm  
 d = 6 mm, D = 10 mm  
 d = 6 mm, D = 12 mm

Fuel filter with paper insert  
Plastic/installation in front of fuel circulation pump

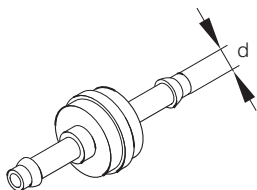


~ = Check hose diameter

Fuel filter with metal strainer  
Plastic/for metering pumps with cup strainer



Check valve

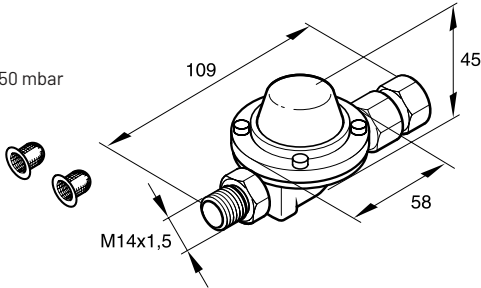


d = 8 mm

| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.        |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|------------------|
|                      |                    |                      |               |                       |                             |                              | 25 1352 88 00 05 |
| ~                    | ~                  | ~                    | ~             | ~                     | ~                           | ~                            | 262 31 155       |
| ~                    | ~                  | ~                    | ~             | ~                     | ~                           | ~                            | 262 31 149       |
| ~                    | ~                  | ~                    | ~             | ~                     | ~                           | ~                            | 262 31 150       |
| ~                    | ~                  | ~                    | ~             | ~                     | ~                           | ~                            | 262 31 151       |
| ~                    | ~                  | ~                    | ~             | ~                     | ~                           | ~                            | 262 31 152       |
| ~                    | ~                  | ~                    | ~             | ~                     | ~                           | ~                            | 262 31 153       |
| ~                    | ~                  | ~                    | ~             | ~                     | ~                           | ~                            | 25 1156 20 00 09 |
|                      |                    |                      |               |                       |                             |                              | 25 1226 89 00 37 |
|                      |                    |                      |               |                       |                             |                              | 244 31 061       |

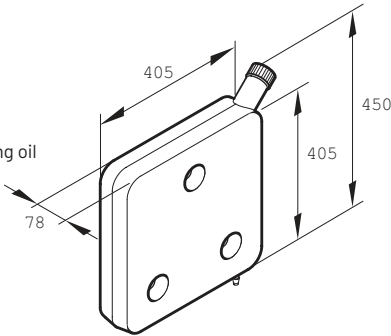
9 | Fuel-conducting parts

Pressure reducer  
 with cup strainer and hose fitting  
 Admission pressure 0.2–4 bar  
 Control pressure min. 50 mbar, max. 150 mbar

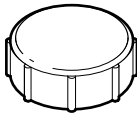


Complete fuel tank, 10 l  
 Plastic

~ = Suitable only for diesel/bio-diesel (FAME)/heating oil



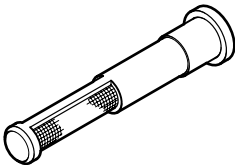
Fuel tank lid including seal  
 Plastic  
 Suitable for 22 1000 20 28 00



~ = Suitable only for diesel/bio-diesel (FAME)/heating oil

Fuel strainer for fuel tank  
 Suitable for 22 1000 20 28 00

~ = Suitable only for diesel/bio-diesel (FAME)/heating oil



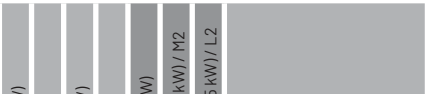
O-ring for fuel valve, 6 mm  
 Suitable for 22 1000 20 28 00

~ = Suitable only for diesel/bio-diesel (FAME)/heating oil



| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.        |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|------------------|
|                      |                    |                      |               |                       |                             |                              | 22 1000 20 08 00 |
| ~                    | ~                  | ~                    | ~             | ~                     | ~                           | ~                            | 22 1000 20 28 00 |
| ~                    | ~                  | ~                    | ~             | ~                     | ~                           | ~                            | 22 1000 20 22 00 |
| ~                    | ~                  | ~                    | ~             | ~                     | ~                           | ~                            | 22 1000 20 28 03 |
| ~                    | ~                  | ~                    | ~             | ~                     | ~                           | ~                            | 22 1000 20 28 04 |

# 10 | Electrical parts/testing equipment



General information:

- Using a timer you can manually or automatically switch on the heater at a preset time (pre-heating mode).
- Always make sure that a heater can run on, even if the vehicle’s whole electrical system can be shut down with a battery main switch (special electrical circuit or clear instruction).
- The rule of thumb for the electrical power supply is: charging time = heating time.
- In certain circumstances, heaters in motor homes or commercial vehicles are operated for longer sustained periods.  
In these cases, the on-board energy resources need to be monitored.
- For more detailed information, see technical description and installation instructions.
- Please also refer to the safety information on this section in the heater documentation.

# 10 | Electrical parts

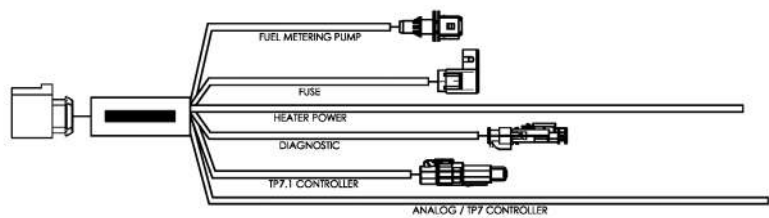
Modular cable bundles for the combination of several heaters and/or when there is a large distance between the heater and the control element (e.g., in recreational vehicles, boats, or buses)

## Modular cable harness AX2\_AX3 12V\_24V

Details: Alternative cable harness for Airtronic 2 and Airtronic 3 heaters, especially suitable for individually installed units, e.g., when there is a large distance between a heater and control unit or heaters are combined.

To connect a CAN control unit, 20 2900 70 0014 is required.

For connection to another heater cable harness from the modular series, 20 2900 70 0015 is required.



20 2900 70 0012

## Modular cable harness HS3 CS 12V\_24V

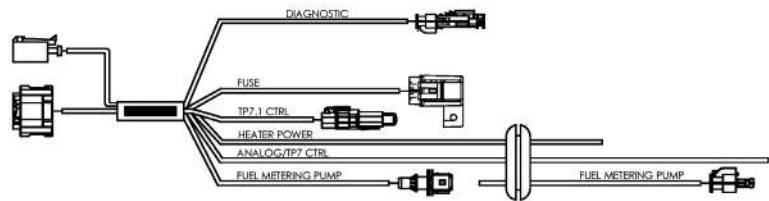
Details: Alternative cable harness for Hydronic S3 (CS) heaters, especially suitable for individually installed units, e.g., when there is a large distance between a heater and control unit or heaters are combined.

For 12 V heaters, 20 2900 70 0016 is also required.

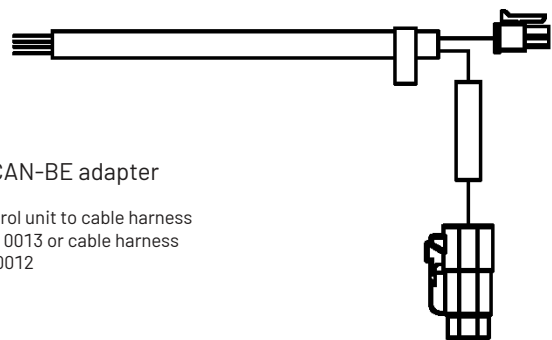
For 24 V heaters, 20 2900 70 0018 is also required.

To connect a CAN control unit, 20 2900 70 0014 is required.

For connection to another heater cable harness from the modular series, 20 2900 70 0015 is required.



20 2900 70 0013



## Modular line section CAN-BE adapter

Info: To connect a CAN control unit to cable harness HS3 CS 12V\_24V 20 2900 70 0013 or cable harness AX2/3 12V\_24V 20 2900 70 0012

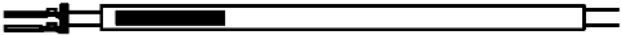
Length 7,300 mm

20 2900 70 0014

Modular line section 2 HG adapter

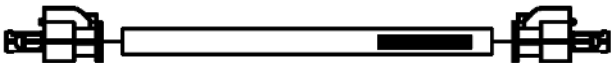
Details: For connecting two heaters to modular cable harnesses.

Length 9,100 mm



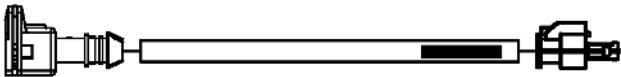
Line section 12V WP

Details: Required if using modular cable harness HS3 CS 12V\_24V 20 2900 70 0013 for a 12 V heater.  
Length 1,525 mm



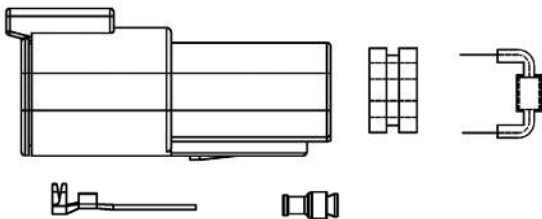
Line section 24V WP

Details: Required if using modular cable harness HS3 CS 12V\_24V 20 2900 70 0013 for a 24 V heater.  
Length 1,525 mm



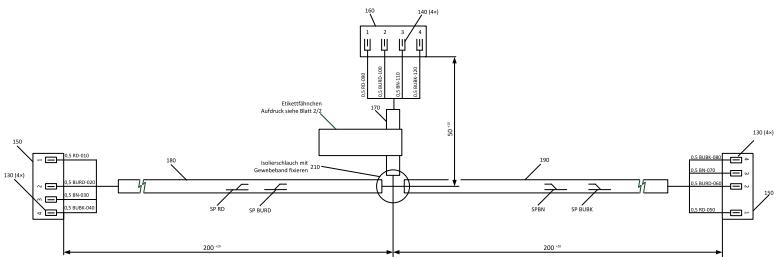
CAN bus terminating plug

For use with modular cable harness HS3CS12V\_24V 20 2900 70 0013 and modular cable harness AX2\_AX3 12V\_24V 20 2900 70 0012



Adapter cable for operating two control units (EasyStart Pro and/or EasyStart Web)

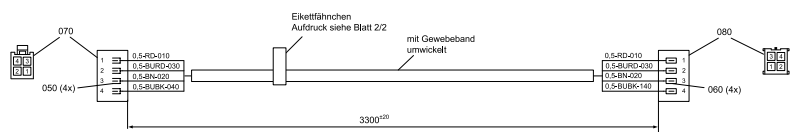
~ = for Hydronic S3 (CS)



| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.        |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|------------------|
|                      |                    |                      |               |                       |                             |                              | 20 2900 70 0015  |
|                      |                    |                      |               |                       |                             |                              | 20 2900 70 0016  |
|                      |                    |                      |               |                       |                             |                              | 20 2900 70 0018  |
|                      |                    |                      |               |                       |                             |                              | 20 2900 70 0017  |
|                      |                    |                      |               |                       |                             |                              | 22 1000 35 27 00 |

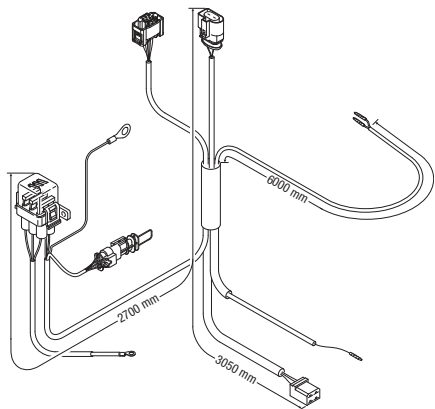
10 | Electrical parts

Extension cable for CAN control unit  
~ = for Hydronic S3 (CS)



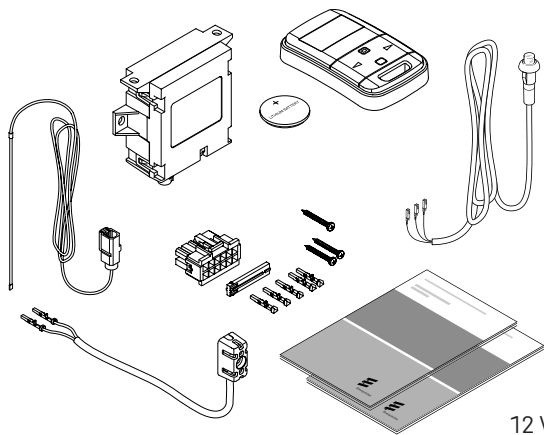
Hydronic S3 Economy wiring harness  
For recreational vehicles and boats

Required for heating when using a mains connection (230 V/50 Hz), e.g. in camping or parking areas for mobile homes or in marinas for boats



EasyStart Remote+  
Remote control

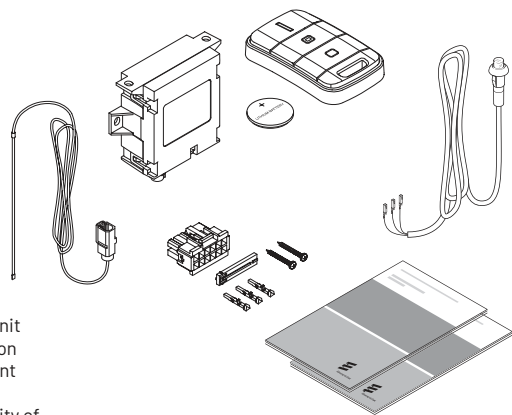
~ = With 24 V heaters without setpoint input and without diagnostics.  
\* For scope of functions, see "Usability of control units" in Plus installation instructions



EasyStart Remote<sup>1</sup>  
Remote control

When replacing a stationary part 22 1000 34 25 00 with 22 1000 34 82 00, additionally order the "elec. connecting part package" 22 1000 34 2600 0B and consult the wiring diagram from the 22 1000 34 81 00 set for installation.

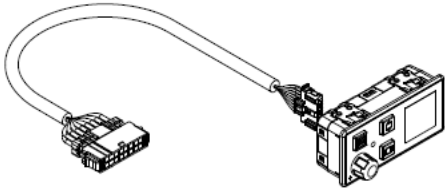
<sup>1</sup> With Airtronic: additional control unit required for temperature preselection  
~ = With 24 V heaters without setpoint input and without diagnostics.  
\* For scope of functions, see "Usability of control units" in Plus installation instructions



| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.                                  |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|--------------------------------------------|
|                      |                    |                      |               |                       |                             |                              | 22 1000 35 32 00                           |
|                      |                    |                      |               |                       |                             |                              | 25 2652 82 11 00                           |
|                      |                    |                      |               |                       |                             |                              | 12 V / 24 V ~ ~ ~ ~ ~ ~ ~ 22 1000 34 17 00 |
|                      |                    |                      |               |                       |                             |                              | 12 V / 24 V ~ ~ ~ ~ ~ ~ ~ 22 1000 34 81 00 |

EasyStart Duty

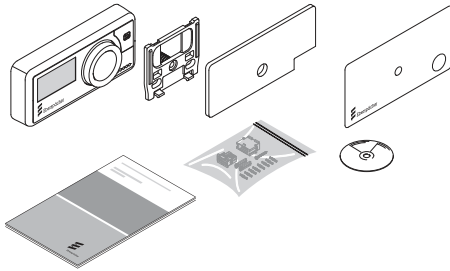
For Hydronic S3 (CS)  
and Airtronic 2 and Airtronic 3



Adapter for EasyStart Duty: 22 1000 25 52 00

EasyStart Pro

For Hydronic S3 (CS)  
and Airtronic 2 and Airtronic 3

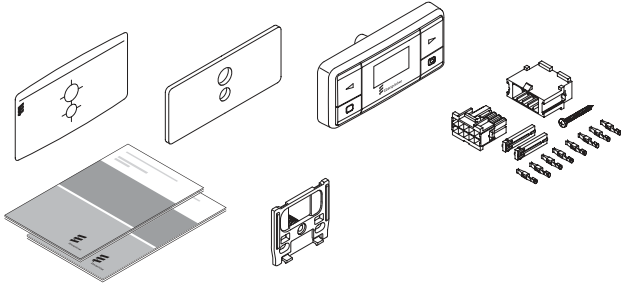


Cover for EasyStart  
For timers, see page 124

12 V / 24 V

EasyStart Timer

For Hydronic 1,  
Hydronic 2,  
Hydronic S3 CL,  
Hydronic M2 and  
Airtronic 1  
Airtronic 2 and  
Airtronic 3

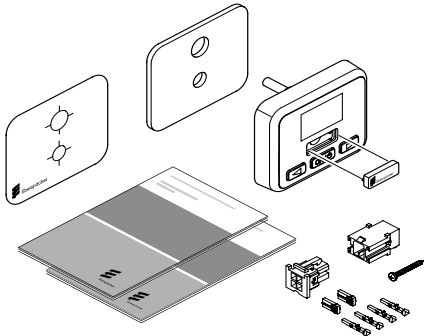


~ = For Hydronic S3 Economy (CS): possible only with S+; no diagnostic option  
\* For scope of functions, see "Usability of control units" in Plus installation instructions

12 V / 24 V

EasyStart Select

For Hydronic 1,  
Hydronic 2,  
Hydronic S3 CL,  
Hydronic M2 and  
Airtronic 1  
Airtronic 2 and  
Airtronic 3

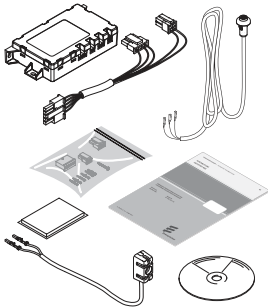


12 V / 24 V

~ = consider heater compatibility

EasyStart Web  
Web-based remote operation

Can be combined  
with older heaters if the  
heater is compatible  
with LIN or S+.



~ = no diagnostics

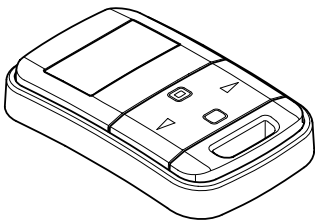
12 V / 24 V

| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.        |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|------------------|
|                      |                    |                      |               |                       |                             |                              | 22 1000 35 50 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 35 22 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 34 15 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 34 13 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 35 35 00 |

10 | Electrical parts

EasyStart Remote+ – single part  
Mobile part

~ = See Plus installation instructions

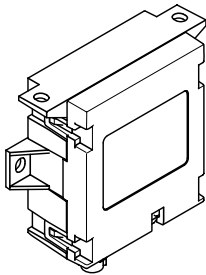


12 V / 24 V

| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.        |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|------------------|
|                      |                    |                      | ~             |                       | ~                           |                              | 22 1000 34 18 00 |

EasyStart Remote+ – single part  
Stationary part

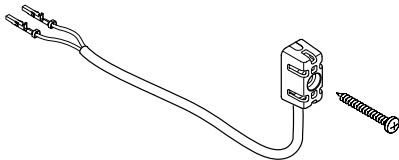
~ = See Plus installation instructions



12 V / 24 V

|  |  |  |  |  |   |  |                  |
|--|--|--|--|--|---|--|------------------|
|  |  |  |  |  | ~ |  | 22 1000 34 19 00 |
|--|--|--|--|--|---|--|------------------|

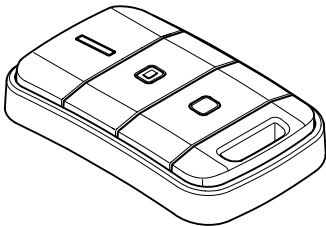
EasyStart Remote+ – single part  
Sensor – interior temperature, display



~ 22 1000 34 22 00

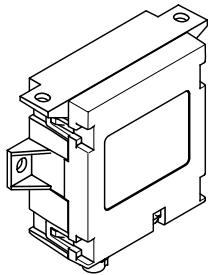
EasyStart Remote – single part  
Mobile part

~ = Airtronic S, M, L: setpoint input not possible  
~ = Air heater: setpoint input not possible, only S+  
~ = Hydronic S, L: only S+



~ ~ ~ ~ ~ ~ 22 1000 34 24 00

EasyStart Remote – single part  
Stationary part



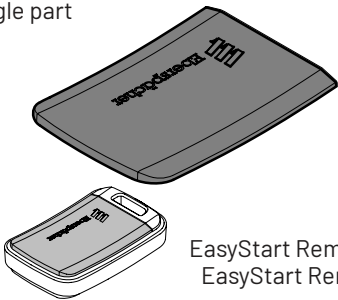
When replacing a stationary part 22 1000 34 25 00 with 22 1000 34 8200, additionally order the "elec. connecting part package TP7" 22 1000 34 2600 and consult the wiring diagram from the 22 1000 34 81 00 set during installation. Can be combined with older heaters if the heater is compatible with LIN or S+.

~ = Airtronic S, M, L: no setpoint input possible  
~ = Hydronic S, L: only S+

12 V / 24 V

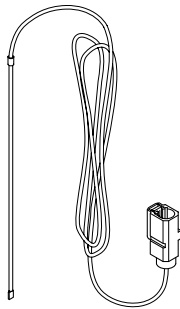
~ ~ ~ ~ ~ ~ 22 1000 34 82 00

EasyStart Remote+ / EasyStart Remote – single part  
Cover for battery compartment

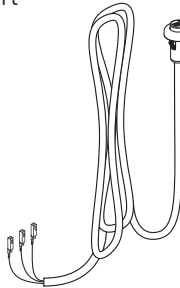


EasyStart Remote+  
EasyStart Remote

EasyStart Remote+ / EasyStart Remote – single part  
Antenna

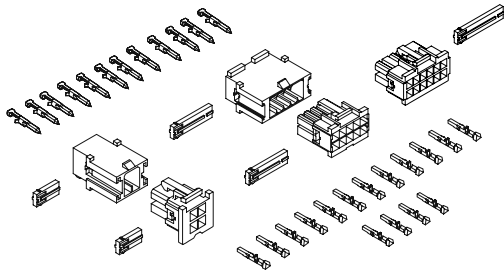


EasyStart Remote+ / EasyStart Remote – single part  
Button

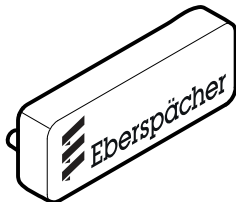


EasyStart Call / EasyStart Remote+ / EasyStart Remote / EasyStart Timer /  
EasyStart Select – single part

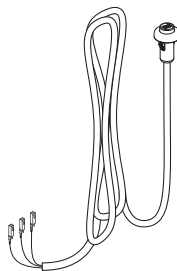
Electrical connection parts



EasyStart Select – single part  
Plugs



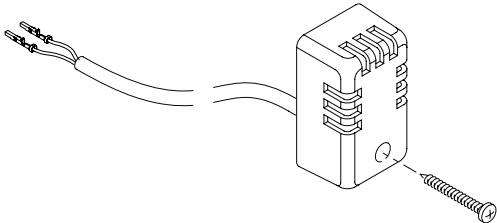
EasyStart Call – single part  
Button



| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.        |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|------------------|
|                      |                    |                      |               |                       |                             |                              | 22 1000 34 18 01 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 34 24 01 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 34 21 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 34 20 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 34 26 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 34 13 01 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 34 04 00 |

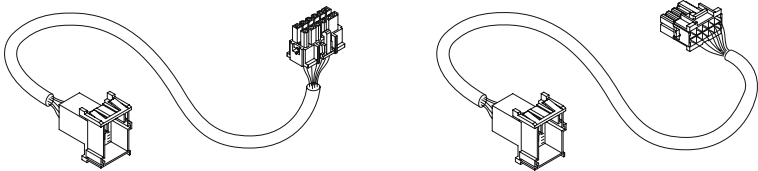
10 | Electrical parts

EasyStart Call – single part  
Temperature sensor



22 1000 34 09 00

EasyStart Call, EasyStart Remote+ / EasyStart Remote / EasyStart Timer –  
single part Adapter cable



EasyStart Remote / EasyStart Remote+ / EasyStart Call (12-pin)  
EasyStart Timer (10-pin)

22 1000 34 08 00  
22 1000 34 45 00

EasyStart R+ – single part  
Mobile part

Spare part for 22 1000 32 80 00

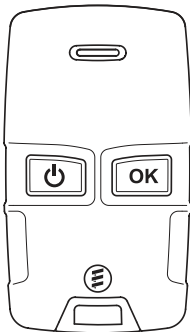


12 V / 24 V

22 1000 32 81 00

EasyStart R – single part

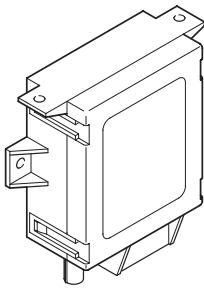
Spare part for 22 1000 32 85 00



12 V / 24 V

22 1000 32 86 00

EasyStart R – single part  
Stationary part



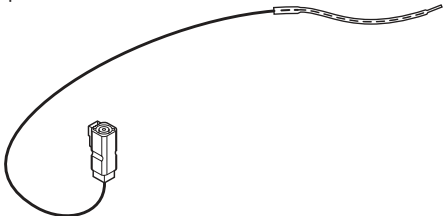
Spare part for 22 1000 32 85 00

EasyStart R+ / EasyStart R – single part  
Cover for battery compartment



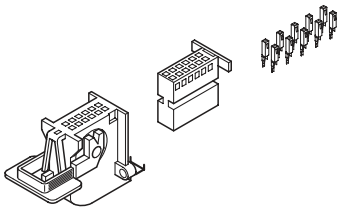
Spare part for 22 1000 32 80 00 and 22 1000 32 85 00

EasyStart R+ / EasyStart R – single part  
Antenna



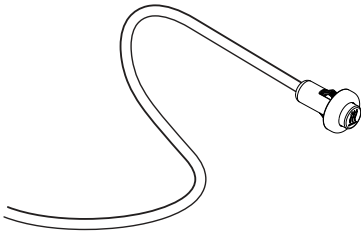
Spare part for 22 1000 32 80 00 and 22 1000 32 85 00

EasyStart R+ / EasyStart R – single part  
Electrical connection parts



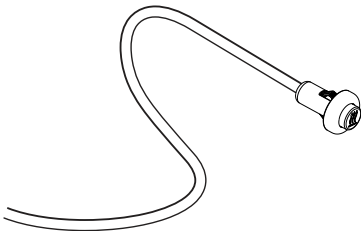
Spare part for 22 1000 32 80 00 and 22 1000 32 85 00

EasyStart R+ / EasyStart R – single part  
Button



Spare part for 22 1000 32 80 00, 22 1000 32 85 00 and 22 1000 32 88 00

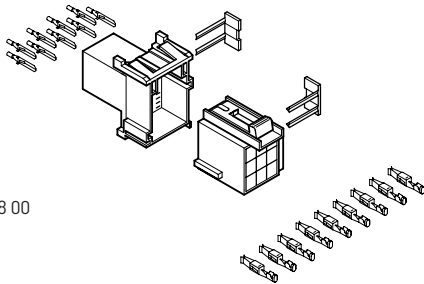
EasyStart Web – single part  
Button



| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.        |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|------------------|
|                      |                    |                      |               |                       |                             |                              | 22 1000 32 87 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 32 91 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 32 83 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 32 90 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 34 75 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 34 76 00 |

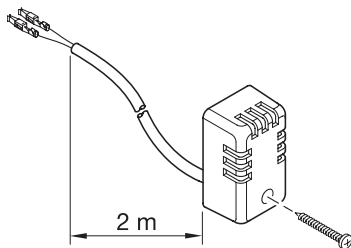
10 | Electrical parts

EasyStart R+ / EasyStart R / EasyStart T - single part  
Electrical connection parts



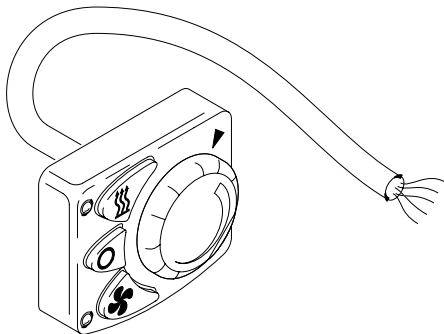
Spare part for 22 1000 32 80 00,  
22 1000 32 85 00 and 22 1000 32 88 00

EasyStart R+ / EasyStart T - single part  
Sensor - interior temperature, display



Spare part for 22 1000 32 80 00 and  
22 1000 32 88 00

Airtronic mini-controller - single part

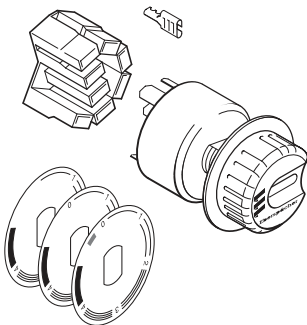


Control unit

\* with bushing connector housing and bushing  
connector

\*\* without bushing connector housing and  
bushing connectors/only for air heater 8 L

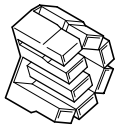
~ = No ventilation, no diagnostic information



\* 12 V  
\* 24 V  
\*\* 12 V  
\*\* 24 V

| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 - 6 kW) | Hydronic M (8 - 12 kW) / M2 | Hydronic L (16 - 35 kW) / L2 | Order no.        |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|------------------|
|                      |                    |                      |               |                       |                             |                              | 22 1000 32 92 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 32 97 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 32 07 00 |
|                      |                    |                      |               |                       |                             |                              | 25 1895 71 00 00 |
|                      |                    |                      |               |                       |                             |                              | 25 1896 71 00 00 |
|                      |                    |                      |               |                       |                             |                              | 25 1767 71 00 00 |
|                      |                    |                      |               |                       |                             |                              | 25 1768 71 00 00 |

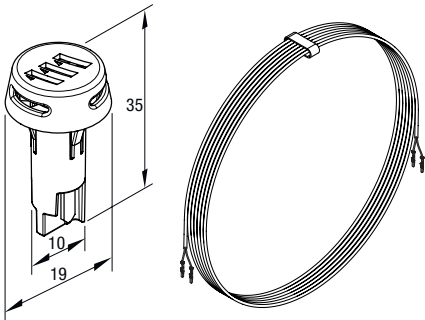
Control unit – single part  
7-pin bushing connector housing



| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.        |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|------------------|
|                      |                    |                      |               |                       |                             |                              | 206 31 282       |
|                      |                    |                      |               |                       |                             |                              | 22 1000 35 21 00 |
|                      |                    |                      |               |                       |                             |                              | 25 1774 89 03 00 |
|                      |                    |                      |               |                       |                             |                              | 25 1688 89 09 00 |
|                      |                    |                      |               |                       |                             |                              | 203 00 085       |

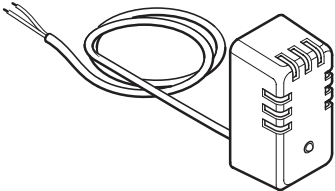
External and internal temperature control sensor, flush wall-mounted installation  
2 m cable harness

\* Can also be combined with control unit

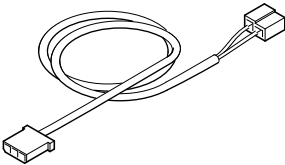


Exterior and interior temperature control sensor, surface installation  
2 m cable harness

\* Can also be combined with control unit

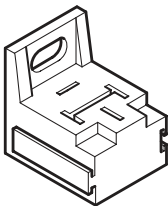


Cable harness/temperature sensor  
For 25 1774 89 03 00



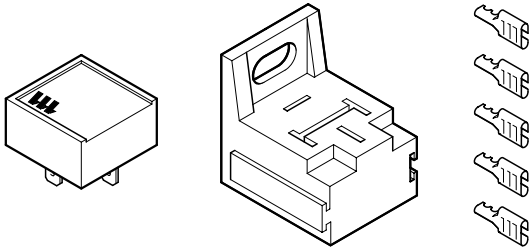
4 m long, 2-pin

Voltage divider for fan control – single part  
Connector block



10 | Electrical parts

IPCU retrofit kit

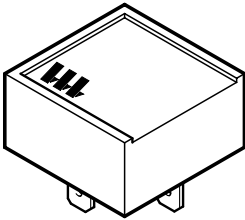


~ = For customer-specific retrofit kits, see the Service Portal - EPRO/Accessories/Electrical parts

12 V

24 0273 00 00 00

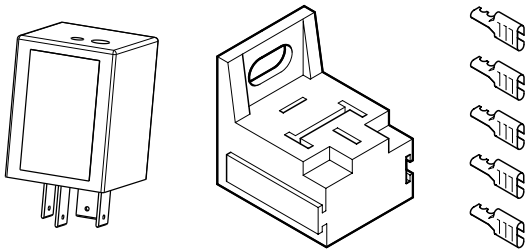
IPCU retrofit kit - single part  
Relay



12 V

22 1000 32 73 00

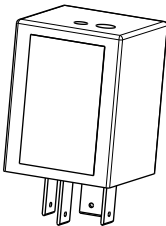
Smart IPCU retrofit kit



~ = for Hydronic S3 Economy 12V (CL and CS)

24 8800 00 00 77

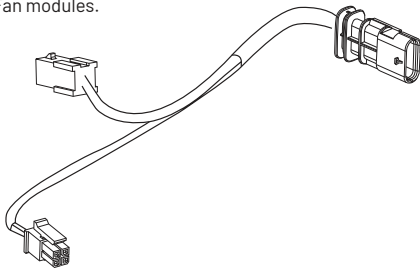
Smart IPCU - single part



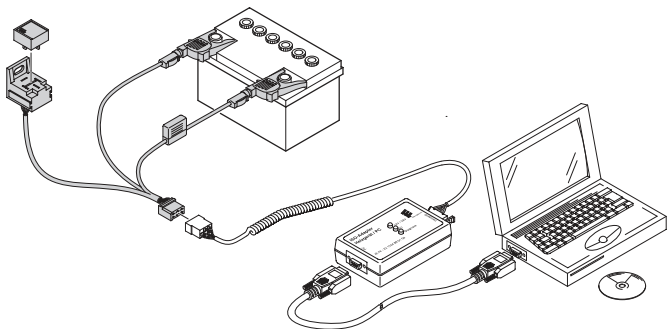
~ = for Hydronic S3 Economy 12V (CL and CS)

22 1000 34 77 00

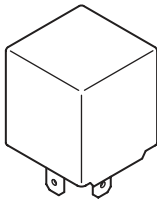
EasyFan programming cable/EasyStart Web adapter cable  
(for diagnostics using EasyScan)  
Required for programming EasyFan modules.



IPCU adapter cable for EDiTH Basic

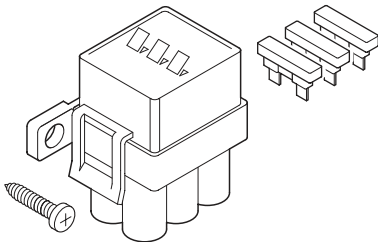


Relay, changeover contact  
Max. current consumption 40 A

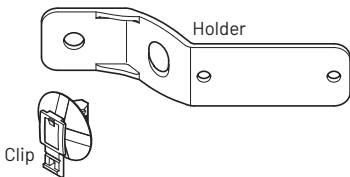


12 V  
24 V

Triple fuse holder with pin  
With 5 A, 15 A, 25 A fuses plus fastening parts



Holder for fuse and diagnostic connector  
(for 22 1000 31 06 00; see above)

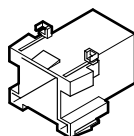


Holder with clip

| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.                |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|--------------------------|
|                      |                    |                      |               | ~                     |                             |                              | 22 1000 34 57 00         |
|                      |                    |                      |               | ~                     | ~                           |                              | 22 1000 32 74 00         |
|                      |                    |                      |               |                       |                             |                              | 203 00 097<br>203 00 098 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 31 06 00         |
|                      |                    |                      |               |                       |                             |                              | 22 1000 51 49 00         |

## 10 | Electrical parts

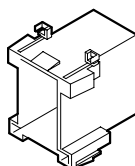
Flat connector housing/Junior Timer  
For mini-timer 22 1000 30 14 00



4-pin

206 31 100

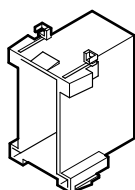
Flat connector housing/Junior Timer  
For mini-timer 22 1000 32 35 00



6-pin

206 31 106

Flat connector housing/Junior Timer



8-pin

206 31 101

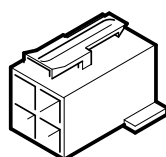
### Flat connector

For flat connector housing/Junior Timer


$$0.5^2 - 1.0^2$$

206 36 018

Bushing connector housing/Junior Timer  
For mini-timer 22 1000 30 14 00



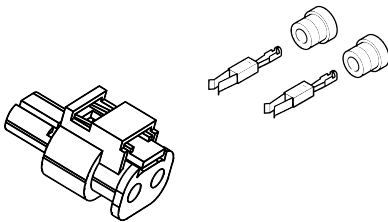
4-pin

206 31 296

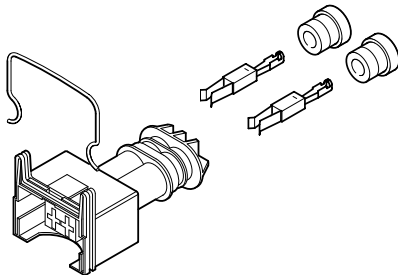
■ unrestricted use ~ restricted use

# 10 | Electrical parts/testing equipment

Connector housing kit for Hydronic S3 and Airtronic 2 and 3  
for metering pump, with contacts and seals

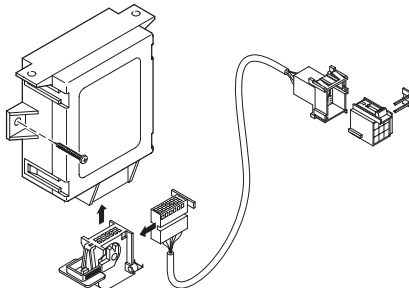


Connector housing kit  
for metering pump, with contacts and seals



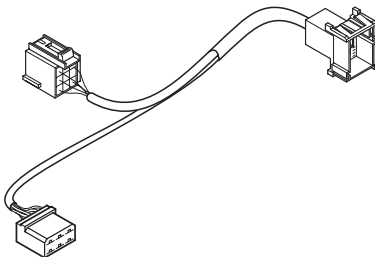
Only for Airtronic 1 and Airtronic 3XL

Altitude kit \*  
Air pressure sensor for heating mode at altitudes  
up to 3,500 m above sea level

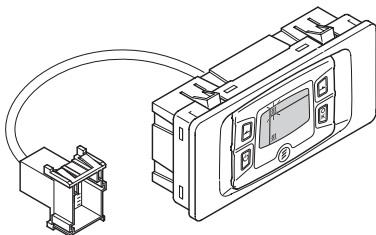


\* Suitable only for Airtronic 1 and Hydronic/Hydronic 2  
labeled "H-Kit" on the factory plate on the side

Adapter cable  
For air pressure sensor diagnostics

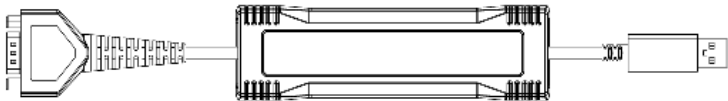


Diagnostic device



| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.        |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|------------------|
|                      |                    |                      |               |                       |                             |                              | 22 9000 30 04 11 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 31 87 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 33 22 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 33 31 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1545 89 00 00 |

EasyScan CAN



CAN-commu nication with Airtronic 2&3, Hydronic S3&L3, EasyStart Pro/Web

22 1560 89 0000

Adapter cable for older models of heater

|                                                                |                  |
|----------------------------------------------------------------|------------------|
| Airtronic 1                                                    | 22 1000 31 86 00 |
| Hydronic 1                                                     | 22 1000 31 63 00 |
| Hydronic 2 / Hydronic 2 C / Hydronic M2 (model from June 2012) | 22 1000 33 78 00 |
| Hydronic L / Hydronic L2                                       | 22 1000 31 66 00 |
| Hydronic M                                                     | 22 1000 32 52 00 |
| Hydronic M2 (model pre-dating June 2012)                       | 22 1000 33 44 00 |
| B / D1 LC compact, B / D3 LC compact, B / D3 LP compact        | 22 1000 30 69 00 |
| B / D1 LC, B / D3 LC, B / D3 LP, B / D5 LC                     | 22 1000 30 20 00 |
| D9 W, Hydronic 10                                              | 22 1000 31 83 00 |
| Toyota                                                         | 22 1526 89 03 00 |
| Neoplan                                                        | 22 1000 31 16 00 |

Adapter cable\*  
For EasyStart Call and EDITH Basic

\* Cable harness with diagnostic connector

EasyStart Call 22 1000 34 11 00

## 11 | Exhaust-conducting and combustion-air-conducting parts

### General information:

**The exhaust and combustion air system must be installed in such a way that it ensures the following:**

- The connection to the heater plug is sealed.
- The mouth of the pipe is never facing a head wind.
- As far as possible, the mouth of the pipe is protected from spray water ingress and spray must be able to run straight out again without penetrating the heater.
- There is no possibility of heater or vehicle engine exhaust gases being sucked in.
- Please also refer to the safety information on this section in the heater documentation.

### Installing the exhaust line:

- Exhaust pipes should always be installed at downward angle towards the mouth of the pipe.
- If this is not possible, a water drainage hole must be drilled at the lowest point.
- If this point is not in the open air (e.g. in a ship's engine room), this opening must have a sealed connection to an overflow vessel.
- Under no circumstances must any cross-sections in the exhaust line be narrower than those on the heater exhaust connection.
- For permissible lengths, diameters and curvatures in the combustion-air and exhaust lines, see the technical information and installation instructions.



## 11 | Exhaust-conducting and combustion-air-conducting parts

End sleeve for exhaust pipe

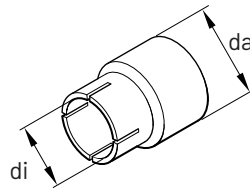


Ø 30 mm  
Ø 42 mm

Order no.

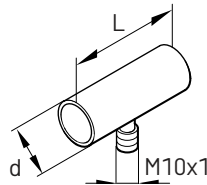
25 1785 80 02 00  
22 1000 40 02 00

### Adapter for exhaust hose


$$d_i = 24 \text{ mm}, d_a = 30 \text{ mm}$$

25 1520 80 01 01

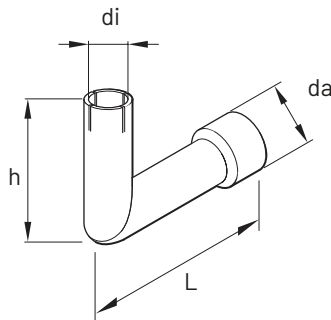
Adapter with condensate drain



$d = 30 \text{ mm}, L = 60 \text{ mm}$

25 1226 89 59 00

Exhaust pipe elbow



$d_i = 24 \text{ mm}$ ,  $d_a = 30 \text{ mm}$ ,  $h = 50 \text{ mm} / 80 \text{ mm}$

25 1226 89 55 00

|                              |                                                                                                                                                                             |  |  |                                      |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--------------------------------------|
| Airtronic S (2.2 kW)         |       |  |  | Order no.                            |
| Airtronic M (4 kW)           |       |  |  | 25 1226 89 45 00<br>22 1050 89 39 00 |
| Airtronic L (5.5 kW)         |       |  |  |                                      |
| Airtronic XL3                |                                                                                                                                                                             |  |  |                                      |
| Hydronic S (4 – 6 kW)        |       |  |  |                                      |
| Hydronic M (8 – 12 kW) / M2  |                                                                                                                                                                             |  |  |                                      |
| Hydronic L (16 – 35 kW) / L2 |                                                                                                                                                                             |  |  |                                      |
|                              |                                                                                                                                                                             |  |  |                                      |
|                              |       |  |  | 25 1226 89 46 00                     |
|                              |       |  |  |                                      |
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|                              |   |  |  |                                      |

~ = Only for use with parts that have a condensate drain

Technical drawing of a T-joint. The vertical pipe has an inner diameter  $d_i$  and a height of 50. The horizontal pipe has an outer diameter  $d_a$  and a length  $L$ . The horizontal pipe is attached to the side of the vertical pipe, and its centerline is at a distance of 65 from the bottom of the vertical pipe.

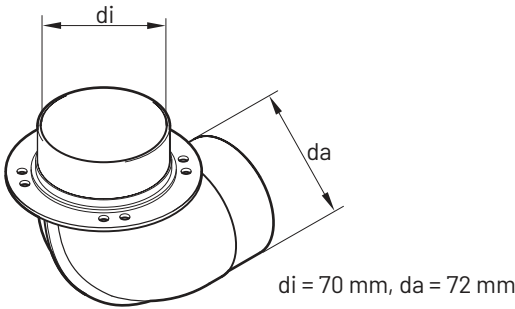
|                              |                                                                                                                                                                             |  |  |                                      |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--------------------------------------|
| Airtronic S (2.2 kW)         |       |  |  | Order no.                            |
| Airtronic M (4 kW)           |       |  |  | 25 1226 89 45 00<br>22 1050 89 39 00 |
| Airtronic L (5.5 kW)         |       |  |  |                                      |
| Airtronic XL3                |                                                                                                                                                                             |  |  |                                      |
| Hydronic S (4 – 6 kW)        |       |  |  |                                      |
| Hydronic M (8 – 12 kW) / M2  |                                                                                                                                                                             |  |  |                                      |
| Hydronic L (16 – 35 kW) / L2 |                                                                                                                                                                             |  |  |                                      |
|                              |                                                                                                                                                                             |  |  |                                      |
|                              |       |  |  | 25 1226 89 46 00                     |
|                              |       |  |  |                                      |
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| Airtronic S (2.2 kW)         |       |  |  | Order no.                            |
| Airtronic M (4 kW)           |       |  |  | 25 1226 89 45 00<br>22 1050 89 39 00 |
| Airtronic L (5.5 kW)         |       |  |  |                                      |
| Airtronic XL3                |                                                                                                                                                                             |  |  |                                      |
| Hydronic S (4 – 6 kW)        |       |  |  |                                      |
| Hydronic M (8 – 12 kW) / M2  |                                                                                                                                                                             |  |  |                                      |
| Hydronic L (16 – 35 kW) / L2 |                                                                                                                                                                             |  |  |                                      |
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|                              |       |  |  | 25 1226 89 46 00                     |
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| Airtronic S (2.2 kW)         |       |  |  | Order no.                            |
| Airtronic M (4 kW)           |       |  |  | 25 1226 89 45 00<br>22 1050 89 39 00 |
| Airtronic L (5.5 kW)         |       |  |  |                                      |
| Airtronic XL3                |                                                                                                                                                                             |  |  |                                      |
| Hydronic S (4 – 6 kW)        |       |  |  |                                      |
| Hydronic M (8 – 12 kW) / M2  |                                                                                                                                                                             |  |  |                                      |
| Hydronic L (16 – 35 kW) / L2 |                                                                                                                                                                             |  |  |                                      |
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|                              |       |  |  | 25 1226 89 46 00                     |
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# 11 | Exhaust-conducting and combustion-air-conducting parts

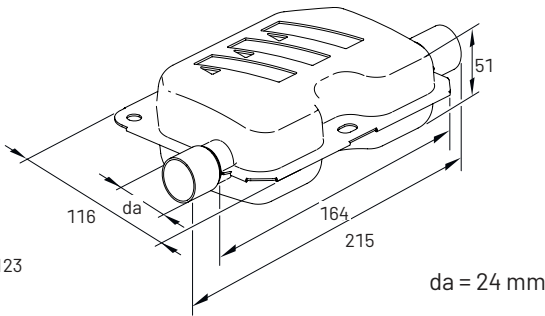
Exhaust pipe elbow



Exhaust silencer

The exhaust silencer must not be installed in boat interiors.

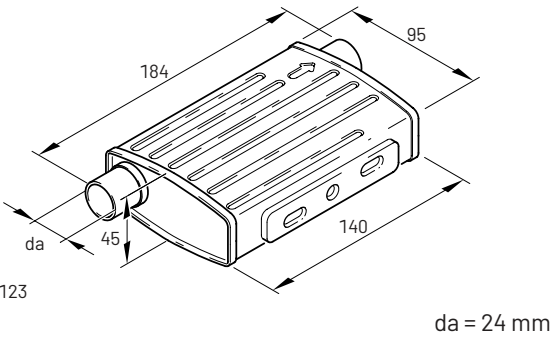
Holder for exhaust silencer, see page 123



Exhaust silencer

The exhaust silencer must not be installed in boat interiors.

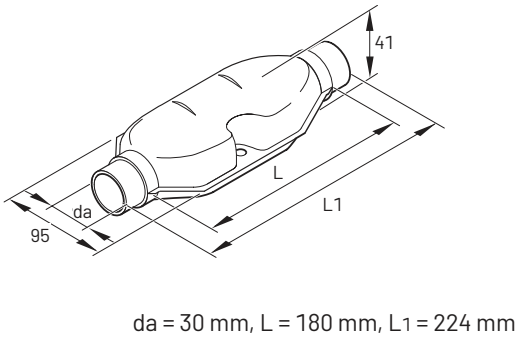
Holder for exhaust silencer, see page 123



Exhaust silencer

The exhaust silencer must not be installed in boat interiors.

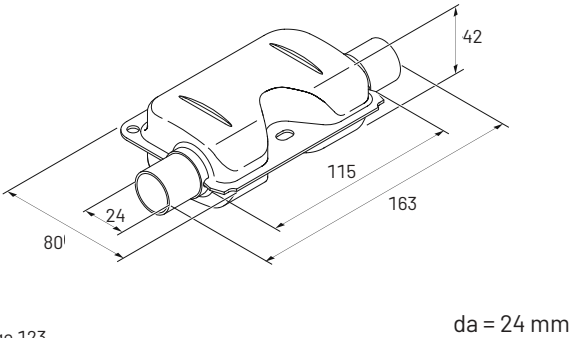
Holder for exhaust silencer, see page 123



Exhaust silencer

The exhaust silencer must not be installed in boat interiors.

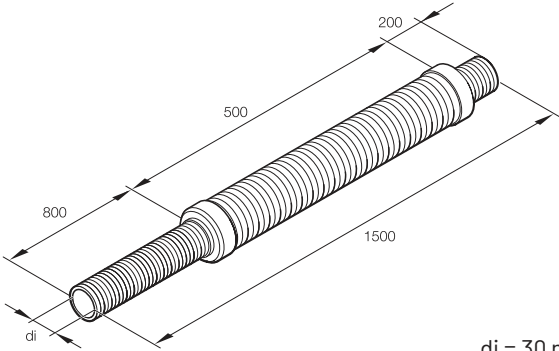
Holder for exhaust silencer, see page 123



| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.        |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|------------------|
|                      |                    |                      |               |                       |                             |                              | 22 1000 40 03 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 40 21 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 40 19 00 |
|                      |                    |                      |               |                       |                             |                              | 25 1806 80 01 00 |
|                      |                    |                      |               |                       |                             |                              | 25 1864 81 01 00 |

Exhaust silencer  
Flexible, stainless steel for boats

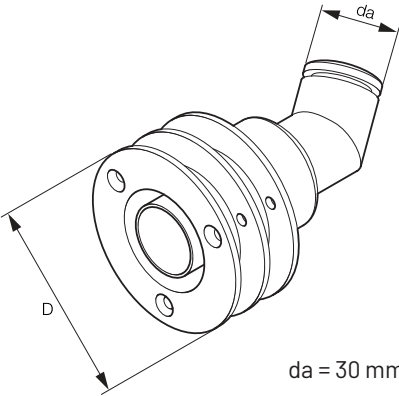
~ = Check connection diameter



di = 30 mm

| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.        |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|------------------|
| ~                    | ~                  | ~                    | ~             | ~                     | ■                           |                              | 25 1226 89 58 00 |

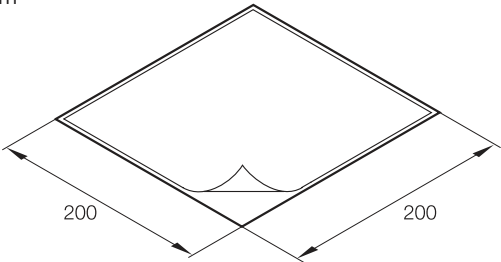
Hull fitting  
Polished stainless steel



da = 30 mm, D = 90 mm

|   |   |   |   |   |   |  |                  |
|---|---|---|---|---|---|--|------------------|
| ~ | ~ | ~ | ~ | ~ | ■ |  | 22 1050 89 43 00 |
|---|---|---|---|---|---|--|------------------|

Self-adhesive aluminum film  
Heat protection film



871 00 051

|  |  |  |  |  |  |  |  |
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[illegible]

$d = 60 \text{ mm}$

22 1000 40 06 00

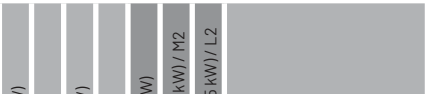
A technical drawing of a helical spring. The drawing shows a perspective view of the spring. The total length of the spring is labeled  $L$ . The outer diameter is labeled  $D_i$ . The inner diameter is labeled  $d_i$ . The length of the coiled portion of the spring is labeled  $L_1$ .

$D_i = 20 \text{ mm}$ ,  $d_i = 38 \text{ mm}$ ,  $L_1 = 180 \text{ mm}$ ,  $L = 780 \text{ mm}$

Technical drawing of a threaded rod. The drawing shows a perspective view of the rod with its threaded section. Dimensions are indicated by arrows and labels:  $L_1$  is the length of the first threaded section,  $L_2$  is the length of the second threaded section,  $L_3$  is the length of the third threaded section,  $L$  is the total length of the rod, and  $d_i$  is the inner diameter of the rod.

$d_i = 20 \text{ mm}$ ,  $L_1 = 100 \text{ mm}$ ,  $L_2 = 160 \text{ mm}$ ,  $L_3 = 100 \text{ mm}$ ,  $L = 360 \text{ mm}$   
 $d_i = 25 \text{ mm}$ ,  $L_1 = 135 \text{ mm}$ ,  $L_2 = 405 \text{ mm}$ ,  $L_3 = 25 \text{ mm}$ ,  $L = 565 \text{ mm}$   
 $d_i = 25 \text{ mm}$ ,  $L_1 = 100 \text{ mm}$ ,  $L_2 = 555 \text{ mm}$ ,  $L_3 = 30 \text{ mm}$ ,  $L = 685 \text{ mm}$

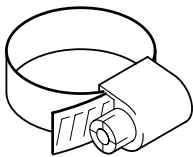
## 12 | Fastening parts



### General information:

- The fastening parts supplied take account of all standard installation conditions.
- In installations in passenger cars and buses, the heater or its mount can usually be rigidly attached directly to the corresponding part of the body.
- By contrast, rubber-metal buffers need to be installed as vibration dampers in trucks and particularly in construction machinery. However, these must not be placed under tension or shear stress.
- This type of rubber-metal component also reduces structure-borne noise transmission. It is therefore used for installing both the heater and the metering pump on houseboats, for example.
- Please also refer to the safety information on this section in the heater documentation.

Hose clip



~ = Check connection diameter

Ø 16 – Ø 25 mm  
Ø 20 – Ø 32 mm  
Ø 32 – Ø 50 mm  
Ø 50 – Ø 70 mm  
Ø 70 – Ø 90 mm  
Ø 90 – Ø 110 mm

Order no.

10 2067 01 60 25  
10 2067 02 00 32  
10 2067 03 20 50  
10 2067 05 00 70  
10 2067 07 00 90  
10 2067 09 01 10

Hose clip with lug



~ = Check connection diameter

Ø 9 – Ø 10.5 mm  
Ø 21 – Ø 24.0 mm

152 61 104  
152 61 115

Hose clip

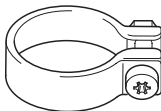


~ = Check connection diameter

Ø 7 mm  
Ø 9 mm  
Ø 10 mm  
Ø 11 mm  
Ø 12 mm  
Ø 14 mm

10 2068 00 70 78  
10 2068 00 90 98  
10 2068 01 00 98  
10 2068 01 10 98  
10 2068 01 20 98  
10 2068 01 40 98

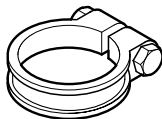
Pipe clip for exhaust pipe



Ø 26 – Ø 28 mm  
Ø 32 – Ø 34 mm

22 1000 51 44 00  
22 1000 51 45 00

Pipe clip for exhaust pipe

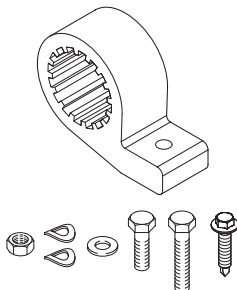


Ø 42 – Ø 45 mm  
Ø 43 – Ø 46 mm

152 09 004  
152 09 005

# 12 | Fastening parts

Holder for metering pump  
and Flowtronic 800 S water pump (see page 64)  
Rubber

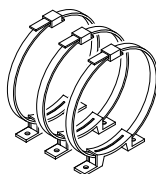


Ø 34 mm  
Ø 41 mm

Order no.

22 1000 50 03 00  
22 1000 50 07 00

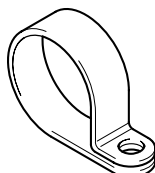
Air hose fastening kit  
Plastic (3 pcs.)



Ø 60 – Ø 100 mm

22 1000 50 02 00

Clip  
Galvanized

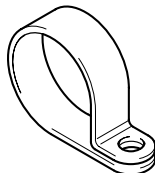


Do not use for flexible exhaust pipes!

Ø 28 mm  
Ø 41 mm  
Ø 50 mm

152 09 010  
152 10 039  
152 09 011

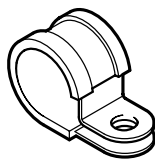
Clip  
Stainless steel



Ø 25 mm  
Ø 28 mm  
Ø 32 mm

152 10 048  
152 61 001  
152 10 069

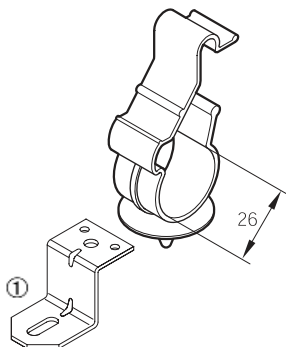
Pipe clip with rubber inlay



Ø 10 mm  
Ø 41 mm

152 00 139  
152 00 131

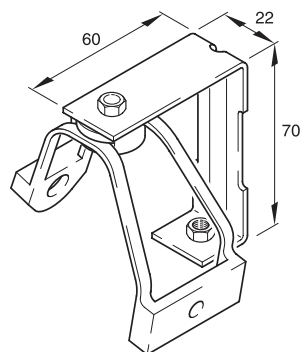
Fastening clip  
for water hoses, Ø 15 mm – Ø 20 mm



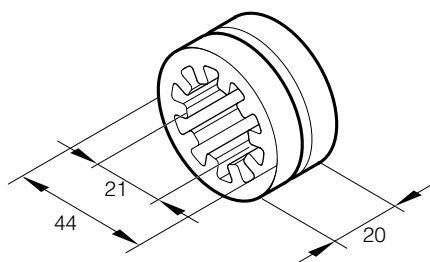
①  
Holder 20 1533 88 00 07 see page 123

156 31 011

For use with boats and camping vehicles



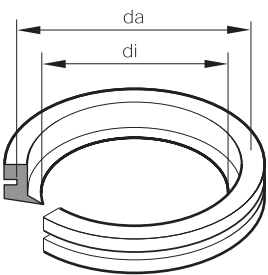
Silicone rubber, temperature resistant


$$d_i = 41 \text{ mm}$$

|                              |  |    |      |    |    |    |
|------------------------------|--|----|------|----|----|----|
| Airtronic S (2.2 kW)         |  | 20 | 1634 | 80 | 06 | 00 |
| Airtronic M (4 kW)           |  |    |      |    |    |    |
| Airtronic L (5.5 kW)         |  |    |      |    |    |    |
| Airtronic XL3                |  |    |      |    |    |    |
| Hydronic S (4 – 6 kW)        |  |    |      |    |    |    |
| Hydronic M (8 – 12 kW) / M2  |  |    |      |    |    |    |
| Hydronic L (16 – 35 kW) / L2 |  |    |      |    |    |    |
| Order no.                    |  |    |      |    |    |    |

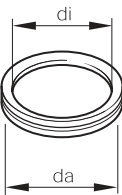
12 | Fastening parts

Gasket for heating-air ducting



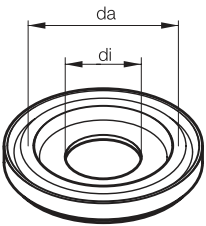
di = 72 - 85 mm, da = 100 mm

Rubber grommet



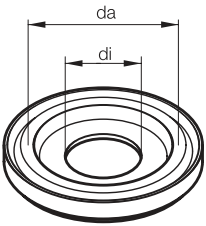
di = 4 - 10 mm, da = 16,5 mm

Grommet for combustion-air pipe



di = 25 - 30 mm, da = 41 mm

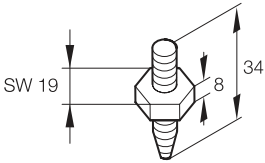
Grommet for exhaust pipe



di = 23 - 30 mm, da = 41 mm  
di = 38 - 45 mm, da = 60 mm

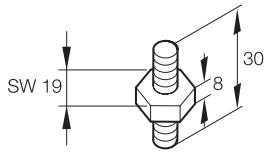
| Airtronic S (2,2 kW) | Airtronic M (4 kW) | Airtronic L (5,5 kW) | Airtronic XL3 | Hydronic S (4 - 6 kW) | Hydronic M (8 - 12 kW) / M2 | Hydronic L (16 - 35 kW) / L2 | Order no.                            |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|--------------------------------------|
|                      |                    |                      |               |                       |                             |                              | 20 1280 04 00 01                     |
|                      |                    |                      |               |                       |                             |                              | 20 1280 09 01 03                     |
|                      |                    |                      |               |                       |                             |                              | 20 1282 20 00 01                     |
|                      |                    |                      |               |                       |                             |                              | 20 1549 65 00 02<br>20 1282 20 00 02 |

Rubber-metal buffer



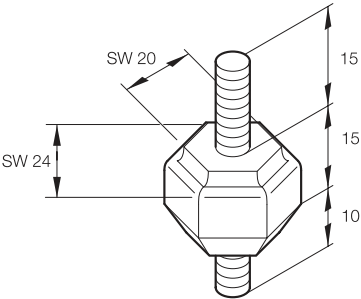
Thread M6 / ST 6.3 C x 15

Rubber-metal buffer



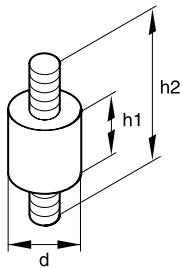
Thread 2 x M6 x 11 mm

Rubber-metal buffer  
Metal reinforced



Thread M6 x 10 mm / M6 x 15 mm

Rubber-metal buffer



Thread 2 x M6 x 10, d = 20 mm, h1 = 15 mm, h2 = 35 mm  
Thread 2 x M6 x 10, d = 20 mm, h1 = 25 mm, h2 = 45 mm  
Thread 2 x M8 x 13, d = 30 mm, h1 = 15 mm, h2 = 41 mm

Order no.

20 1673 80 01 01

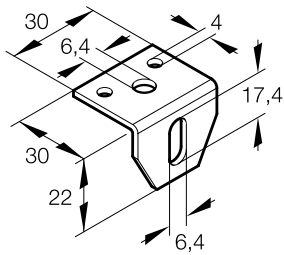
20 1185 00 00 01

22 1000 50 00 08

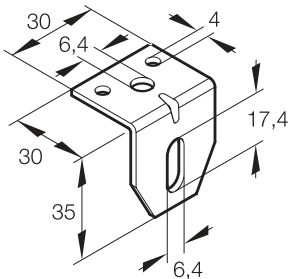
20 1607 65 00 02  
20 1609 05 00 04  
330 09 002

12 | Fastening parts

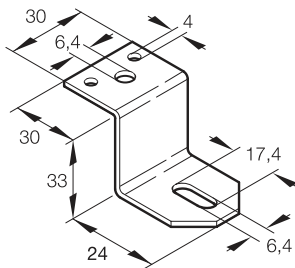
Holder



Holder

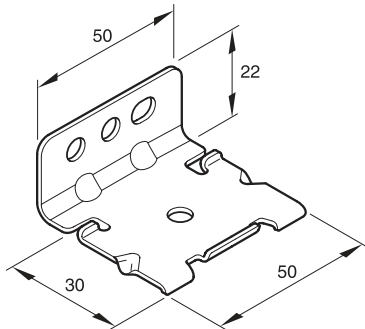


Holder



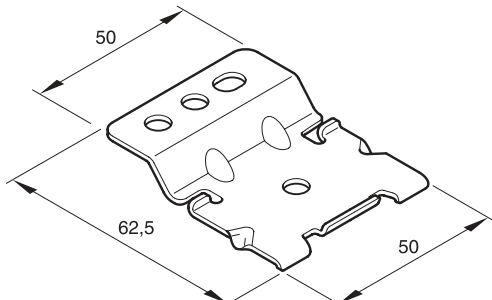
L-holder  
For exhaust silencer 22 1000 40 19 00

Exhaust silencer, see page 113



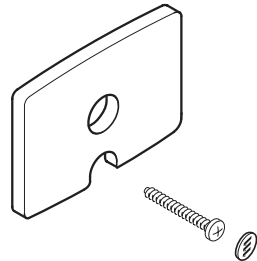
Z-holder  
For exhaust silencer 22 1000 40 19 00

Exhaust silencer, see page 113

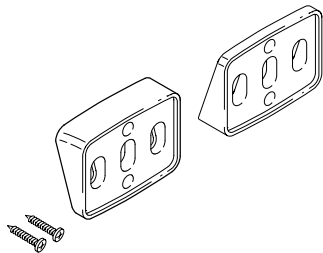


| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.        |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|------------------|
|                      |                    |                      |               |                       |                             |                              | 20 1348 03 00 02 |
|                      |                    |                      |               |                       |                             |                              | 20 1348 03 00 04 |
|                      |                    |                      |               |                       |                             |                              | 20 1533 88 00 07 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 51 34 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 51 35 00 |

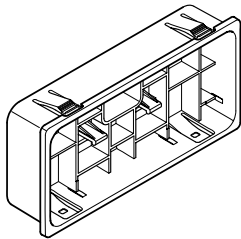
EasyStart T – single part  
Fastening parts



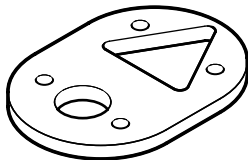
EasyStart T – single part  
Bracket  
For slanting, level or convex installation surfaces



Installation frame for EasyStart **(TP7)** Timer  
and Pro **(TP7.1)**



Spacer plate  
Rubber

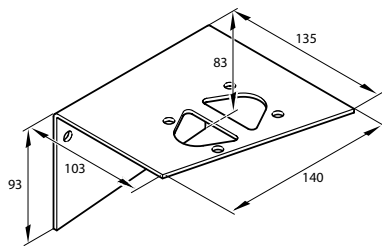


6 mm thick

| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.        |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|------------------|
|                      |                    |                      |               |                       |                             |                              | 22 1000 32 93 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 51 32 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 51 41 00 |
|                      |                    |                      |               |                       |                             |                              | 25 1482 89 00 02 |

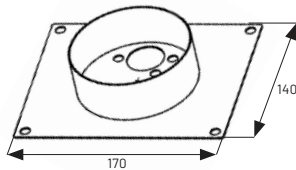
12 | Fastening parts

Device holder



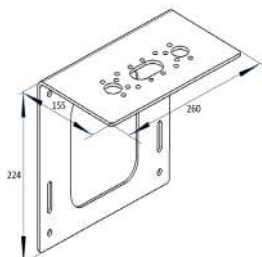
Stainless steel, 105°

Mounting plate  
for Airtronic S2/S3, M2/M3 & L3

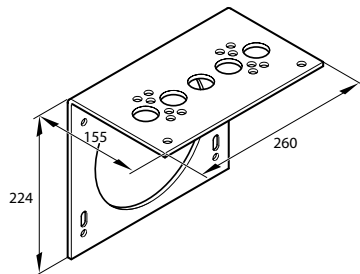


Easy mounting with only one Ø100mm drilling.  
Only available: Eberspächer Torgelow GmbH & Co. KG | Wilhelmstr. 47 | 17358 Torgelow | Germany  
mail: de-to-sales-ebtoeberspaecher.com

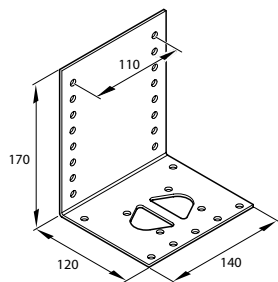
Device holder  
Suitable for Airtronic L3 & XL3



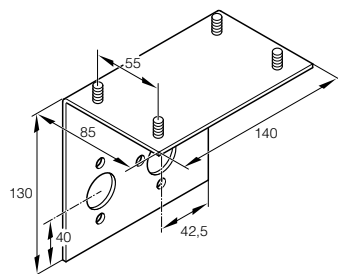
Device holder  
Fits D5LC and Airtronic D5



Heater mounting bracket

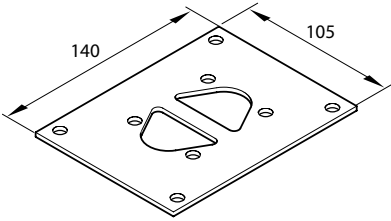


Device holder

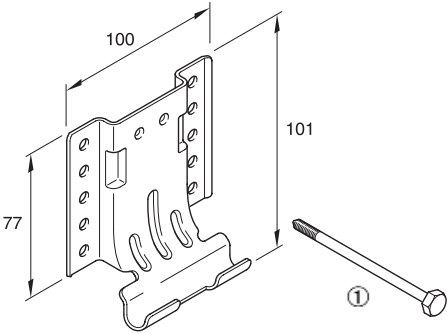


| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.        |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|------------------|
|                      |                    |                      |               |                       |                             |                              | 22 1050 89 08 00 |
|                      |                    |                      |               |                       |                             |                              | 22 9000 52 01 27 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 51 52 00 |
|                      |                    |                      |               |                       |                             |                              | 24 0076 00 00 01 |
|                      |                    |                      |               |                       |                             |                              | 25 1482 89 00 11 |
|                      |                    |                      |               |                       |                             |                              | 20 1575 89 04 00 |

Fastening plate

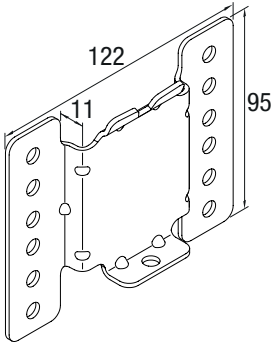


Holder for Hydronic 1



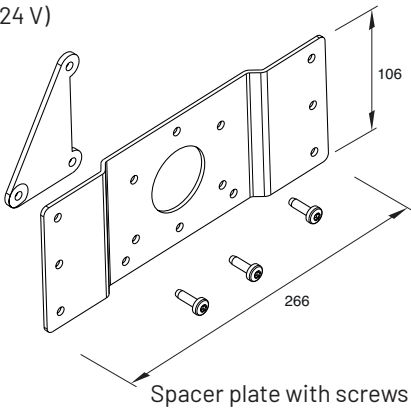
①  
Also required:  
M6x95 fastening screw, order no. 100 10 259

Holder for Hydronic S3 Economy (12 V)



Holder

Holder for Hydronic S3 Commercial (24 V)

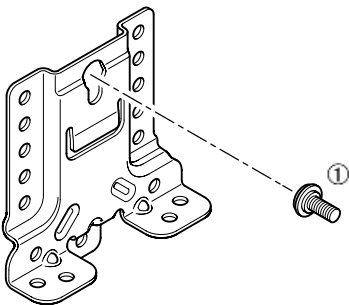


Both parts are required for mounting.

Holder

Spacer plate with screws M6x20

Holder for Hydronic 2



①  
Special screw also required:  
for Economy/Comfort 25 2526 80 01 01

| Airtronic S (2.2 kW) | Airtronic M (4 kW) | Airtronic L (5.5 kW) | Airtronic XL3 | Hydronic S (4 – 6 kW) | Hydronic M (8 – 12 kW) / M2 | Hydronic L (16 – 35 kW) / L2 | Order no.                            |
|----------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|------------------------------|--------------------------------------|
|                      |                    |                      |               |                       |                             |                              | 25 1482 89 00 13                     |
|                      |                    |                      |               |                       |                             |                              | 22 1000 51 36 00                     |
|                      |                    |                      |               |                       |                             |                              | 22 1000 51 42 00                     |
|                      |                    |                      |               |                       |                             |                              | 22 1000 51 50 00<br>22 9000 51 51 00 |
|                      |                    |                      |               |                       |                             |                              | 22 1000 51 37 00                     |

## 13 | Name plates/information signs

### General information:

#### Name plates

The name plate must be easily visible after installation. If necessary, a second (duplicate) name plate can be attached in a clearly visible place on the heater after installation or on one of the covers in front of the heater. A second plate is not required if the original can be seen by removing a cover without the aid of tools.

(chargeable). To order this, complete the form below and fax it to the number given.

A duplicate name plate costs EUR 15.

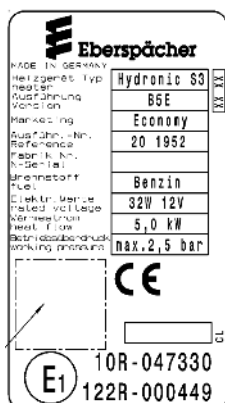
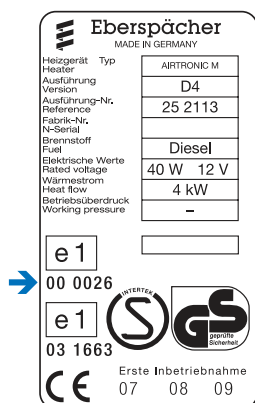
A second (duplicate) name plate can be sent on request

#### Please note!

Name plates for heaters with a general design certification (German: ABG – Allgemeine Bauartgenehmigung) are identifiable by the wavy line which is its mark of conformity (~~~~).



Name plates for heaters with an EC type approval are identifiable by the official EC and EEC  type approval mark.







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SYSTEMS INTERNATIONAL GMBH  
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FAX: +49 711 939-0634  
[info@eberspaecher.com](mailto:info@eberspaecher.com)  
[www.eberspaecher-climate.com](http://www.eberspaecher-climate.com)