

A FEW PRACTICAL BENEFITS:

Professional quality
"made in Germany" –
originally produced by Trotec

Electronic regulation of air amount –
infinitely adjustable

Duoventic principle:
Separate, infinite adjustment of
moisture content and volumetric flow
of the required dry air (TTR-D models)

Two separate air circuits for a
pressure-neutral circulatory air
operation (TTR-D models)

Up to 30 % lighter than competitive
models with the same performance

Maximum of performance with
minimum of dimensions and weight

Extremely low in maintenance

Stackable to save space

Practice-optimized German industrial
design – protected design patent

Desiccant dehumidifiers of the TTR series



All the desiccant dehumidifiers
of the TTR series are devel-
oped and manufactured
according to the highest of
quality standards in
Germany.



Weatherproof Drybox for the interior
convection drying with TTR 400 D and
500 D TTR for when outdoor installa-
tion required. All information about the
Drybox on catalogue page 15...



**Need to rent an desiccant
dehumidifier and need
one fast?**

Use the quick and cost-effective
rental solutions from Europe's leading
renter for sub-rentals:

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www.tkl-rent.net

Dry air on or off.

**Conventional desiccant dehumidifiers often have no other options on offer.
However, the TTR series does – significantly more:**

Due to high-quality components and an innovative
housing design our TTR dehumidifiers are the
lightest devices of their performance class.
The powder-coated steel sheet construction
is extremely durable.

The combination of smart equipment features and
remarkable performance data turns these devices
into universal all-purpose desiccant dehumidifiers
for industry and construction.

The TTR dehumidifiers achieve far lower dew points
than refrigerator dryers and ensure a high
dehumidification performance even at low air and
component temperatures. Competitive machines
cannot keep up with them when directly compared
with regard to performance and weight.

The infinitely electronically adjustable air amount
regulation allows the variable definition of the
dehumidification performance and therefore,
of the power consumption and noise emission.



Whether it's a new model you are looking for or a reconditioned one, whether you are thinking of buying or leasing – Trotec provides you the ideal solution for every demand: Visit the Trotec Shop to find out more about great deals on our new products, our super special offers and our wide selection of demonstration, reconditioned and specially-priced products. For more information go to www.trotec.com or directly use the QR Code.

D marking: professional quality “made in Germany” with twice the flexibility due to Duoventic

Monoventic:

The Duoventic principle of the TTR-D models allows the separate electronic regulation of both fans of the separate air circuits. This enables the fine adjustment of the moisture content (C1) and volume flow (C2) of the required dry air.

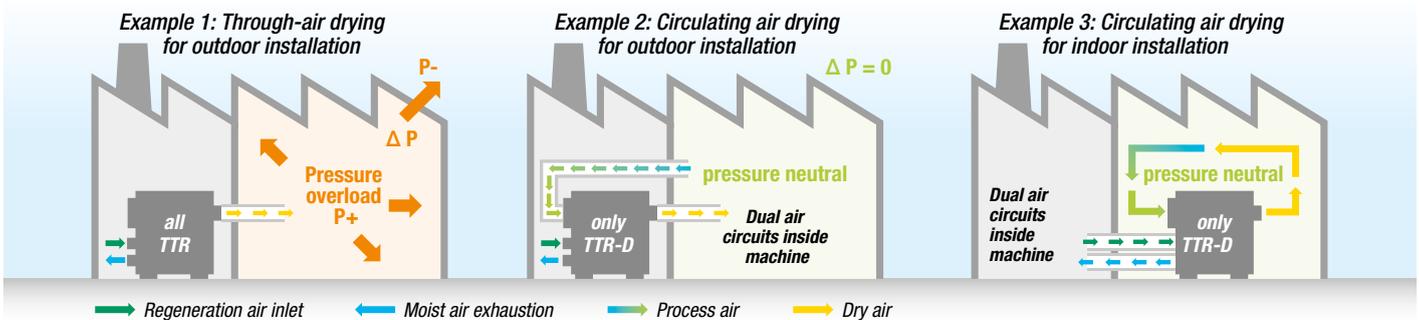
This is how you can configure any climate scenario in a fast and needs-oriented way. Extremely dry air with a low air flow rate, larger volumes of dry air or maximum circulating air performance with a moderate ratio of dry air.

Duoventic:



The model differences at a glance: On the left: a TTR 400 with Monoventic air volume regulation (A) and a common inlet for both air flows (B); on the right: a TTR 400 D with Duoventic regulation (C1, C2) and separate inlets for dry air (D) and regeneration air (E).

Convincing process advantages through the TTR Trisorp Dual principle – application examples:



Basically, conventional desiccant dehumidifiers are equipped with a common air inlet (mono) for dry and regeneration air, e.g. all Trotec devices operating according to the Trisorp-mono or Bisorp-mono principle.

These dehumidifiers are not suitable for through-air drying directly in the respective room as a process-related low pressure is generated and therefore drawing air from the outside is blown into the room, whose moisture content cannot be controlled.

An outdoor installation, e.g. in near rooms can be done with all TTR models (example 1). Due to the ventilation with drier fresh air, a pressure overload is generated, which leads moist air to the outside.

However, with this version the dehumidification rate always depends on the moisture content of the sucked “outdoor air”. With a nominal amount of dry air it achieves a reduction in the dew point temperature by approx. 5 to 10 °C (depending on the device).

Power-saving dehumidification and higher drying rates thanks to circulatory air operation with dual air circuits

The D models operate according to the TTR Trisorp Dual principle with two separate air flows and separate fans for each circuit.

This means that circulatory air operation is also possible with an outdoor installation supplied by a process air circuit that is separated from the “outdoor air” (example 2).

Even if the D models are installed indoor in a room that is to be treated with dry air, a pressure-neutral circulatory air operation is possible by streaming incoming regeneration air and outgoing moist air out of the room by means of a hose or pipe connection (example 3).

Variable circulating air drying with TTR-D models have decisive advantages for users:

If there is a nominal amount of dry air, up to 30 °C lower dew point temperatures can be achieved compared to the “outdoor air” that supplies the regeneration air, in contrast to conventional through-air operation.

Therefore, dew points far below 0 °C can be achieved, which results in considerably low drying stages and in a significantly energy-efficient operation!

Smart equipment options – comprehensive system accessories

As standard, all TTR desiccant dehumidifiers are on the suction side equipped with plug-on filter covers with a handy clip fastener for quick filter changes without having to open the device.

For a separate air supply a matching hose adapter is available as accessory for each filter cover. It can simply be attached to the filter cover.

A complete overview of all TTR system accessories incl. a schematic representation of all configuration options can be found on the subsequent catalogue pages 20 and 21.



Thanks to the clip fastener, the filter cover at the rear of the device with inserted filter mat can be removed quickly and without the need for tools.



On the left: a TTR 400 with standard filter cover at the rear and a connected hose for the discharge of humid air. On the right: a TTR 400 D with optional hose adapters for the separate process air and regeneration air supply.

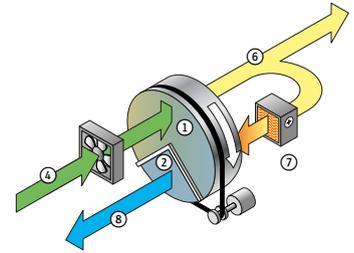
Also available as order option instead of the standard operating hours counter is an MID-compliant⁹⁾ dual counter with additional recording of the energy consumption.



Optionally, all filter covers can be replaced by filter boxes with integrated pipe connection – also ideal for fixed installations. In addition, the filter boxes enable the flexible usage of different Z-line filters of class G4 or F7. For a filter change the filter box can be opened quickly and easily via the screw cap.

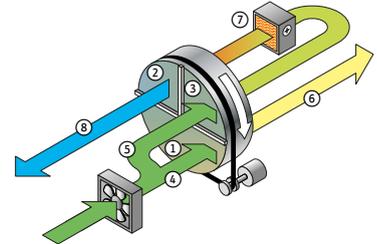
Operation principles of the TTR desiccant dehumidifiers:

TTR Bisorp Mono



A fan located in front of the rotor for process and regeneration air. For regeneration a partial flow of the dry air is used.

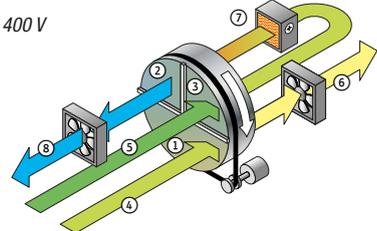
TTR Trisorp Mono



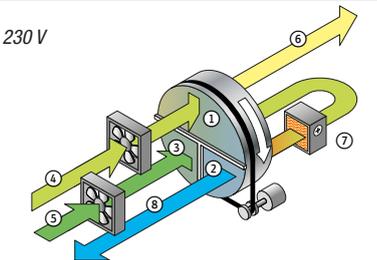
A fan located in front of the rotor for both air circuits. With purging sector for the heat recycling process for incoming regeneration air.

TTR Trisorp Dual

400 V



230 V



Separate air flows of process and regeneration air implemented by one fan each. With purging sector for the heat recycling process for incoming regeneration air.

Key for operation principles:

- | | |
|-------------------------------------|---------------------|
| 1. Dehumidification sector | 4. Process air |
| 2. Regeneration sector | 5. Regeneration air |
| 3. Purging sector for heat recovery | 6. Dry air |
| | 7. Heating |
| | 8. Damp air |





| Technical data | | TTR 200 | TTR 300 | TTR 400 | TTR 400 D | TTR 500 D |
|--|--------------------------------------|-----------------|---------------|------------------|------------------|---------------|
| Article number | | 1.110.000.010 | 1.110.000.015 | 1.110.000.020 | 1.110.000.021 | 1.110.000.025 |
| Dry air | Dehumidification ¹ [kg/h] | 0.35 | 0.7 | 1.2 | 1.6 | 2.2 |
| | Range [m³/h] | 40 - 120 | 80 - 280 | 130 - 450 | 130 - 450 | 180 - 550 |
| | Air volume ² [m³/h] | 80 | 200 | 350 | 350 | 480 |
| | Ext. Compression [Pa] | 50 | 100 | 150 | 200 | 150 |
| Regeneration air | Air volume [m³/h] | 15 | 30 | 50 | 65 | 80 |
| | Ext. Compression [Pa] | 30 | 50 | 80 | 80 | 80 |
| Principle of operation (for details see page 18) | | TTR Bisorp Mono | | TTR Trisorp Mono | TTR Trisorp Dual | |
| Operating range | Temperature [°C] | -15 to +35 | -15 to +35 | -15 to +35 | -15 to +35 | -15 to +35 |
| | Humidity [RH] | 0 to 100 | 0 to 100 | 0 to 100 | 0 to 100 | 0 to 100 |
| Connection voltage [V / Hz] | | 230 / 50/60 | 230 / 50/60 | 230 / 50/60 | 230 / 50/60 | 230 / 50/60 |
| Power input | Total [kW] | 0.45 | 0.9 | 1.5 | 2.2 | 3.0 |
| | Heating [kW] | 0.4 | 0.85 | 1.35 | 1.95 | 2.7 |
| Sound level (distance 1 m) [dB(A)] | | 60 | 61 | 63 | 63 | 74 |
| Length [mm] | | 305 | 355 | 400 | 400 | 450 |
| Width [mm] | | 260 | 310 | 350 | 350 | 400 |
| Height [mm] | | 285 | 355 | 405 | 405 | 455 |
| Weight [kg] | | 9 | 12 | 17 | 20 | 25 |
| Connection | Dry air outlet ø [mm] | 80 | 100 | 125 | 125 | 125 |
| | Humid air outlet ø [mm] | 38 / 50 | 50 | 80 | 80 | 80 |
| Equipment features | | TTR 200 | TTR 300 | TTR 400 | TTR 400 D | TTR 500 D |
| Powder-coated steel sheet housing | | ■ | ■ | ■ | ■ | ■ |
| Stainless steel housing | | □ | □ | □ | □ | □ |
| Fan | | 1 x | 1 x | 1 x | 2 x | 2 x |
| Air volume regulation | Monoventic ³ | ■ | ■ | ■ | - | - |
| | Duoventic ⁴ | - | - | - | ■ | ■ |
| Operating hours counter | | ■ | ■ | ■ | ■ | ■ |
| Dual counter (MID-compliant ⁵) [h/kWh] | | - | □ | □ | □ | □ |
| Hose adapter | Process air | □ | □ | □ | □ | □ |
| | Regeneration air | - | - | - | □ | □ |
| Filter box | Process air | □ | □ | □ | □ | □ |
| | Regeneration air | - | - | - | □ | □ |
| Function monitoring | | - | - | ○ | ○ | ○ |
| Ammeter | | ■ | ■ | ■ | ■ | ■ |
| DIN socket for external switchings | | 4-pin | 4-pin | 4-pin | 4-pin | 4-pin |
| Hygrostat | | □ | □ | □ | □ | □ |
| Self-regulating PTC electric heating | | ■ | ■ | ■ | ■ | ■ |
| Additional heating process air | | - | - | □ | □ | □ |
| Integrated heat recovery | | ■ | ■ | ■ | ■ | ■ |
| Ex-proof version | | - | - | - | - | - |

■ Standard equipment; □ optional equipment; ○ equipment option to be stated at the time of order, not subsequently installable; further versions upon request

¹ Nominal data at 20 °C/60 % RH; ² nominal

³ **Monoventic:** Advanced control electronics allow a precise and infinite adjustment of the dry air volume

⁴ **Duoventic:** Both air flows can be infinitely electronically regulated, independently of each other. This enables a separate adjustment of the moisture content and volume flow of the required dry air.

⁵ **What does MID-compliant mean?** In some areas, the Measuring Instruments Directive (MID) replaces the previous regulation of national authorization and subsequent calibration. As a result, all energy meters in Europe used for energy consumption-based billing have to be MID-compliant from now on.

← **Desiccant dehumidifiers – further information ...**

1 Function monitoring

Microprocessor control with multi-line plain text display for status or fault messages. With potential-free contacts for external indication. Available as configuration option at the time of order, not subsequently installable.

2, 3 Hose adapter

For assembly onto the standard filter cover; comes with a supply air hose connection.

4, 5 Filter box

Permits the usage of G4 / F7 filters and the connection of supply air hoses at the process air or regeneration air inlet. Also ideal for fixed installations with pipe connections.

6, 7 Filter mat

For filtering process or regeneration air (included in the scope of delivery).

8 Z-line filter G4 process air

9 Z-line filter G4 regeneration air

10 Z-line filter F7 process air

11 Z-line filter F7 regeneration air

12 Dry air heating

Heating system mountable to the dry air outlet for the additional heating of dry air. Adjustable between 30 and 90 °C. Integrated hose connection \varnothing 125 mm.

13 Quad distributor

Connection for up to four 50 mm hoses that can be mounted to the dry air outlet using a reducer fitting (14), also with \varnothing 38 mm. For a dry air supply specifically directed at different areas. Incl. sealing caps.

14 Reducer fitting

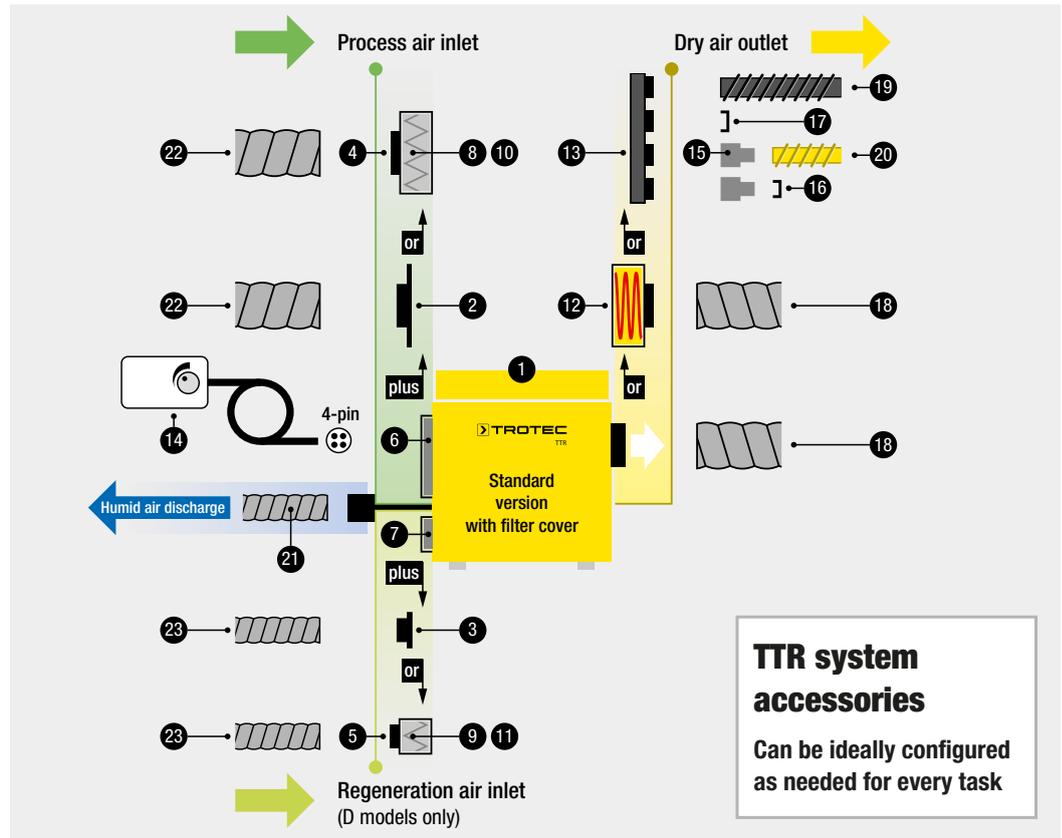
With screw thread so as to be screwed onto the quad distributor (13). Permits the connection of 38 mm hoses.

15 Sealing caps 50 mm

For sealing the air outlets of the quad distributor.

16 Sealing caps 38 mm

Air outlet seal for the mounted reducer fitting (14) in case no hose is connected.



17 Hygrostat control

External hygrostat HG 120 with 4-pin plug and 2 m connecting cable for the humidity-dependent two-point control of the devices. (Alternatively: external hygrostat HG 125, art. no. 6.100.002.042, with additional adapter transformer, art. no. 6.100.002.043)

Air transport hoses:

18 For standard dry air exhaust.

19 For standard dry air exhaust with mounted quad distributor (13).

20 For standard dry air exhaust with mounted quad distributor (13) and screwed-on reducer fitting (14).

21 For humid air discharge.

22 For process air intake.

23 For regeneration air intake.



| System accessories | | | TTR 200 | TTR 300 | TTR 400 | TTR 400 D | TTR 500 D | |
|-----------------------------------|---|---|---|---|---|---|---|------------------|
| 1 | Function monitoring | Article number | – | – | 6.100.010.346 | 6.100.010.346 | 6.100.010.346 | Trotec |
| 2 | Hose adapter | Process air inlet ø [mm] | 80 | 100 | 125 | 125 | 125 | |
| | | Article number | 6.100.010.001 | 6.100.010.005 | 6.100.010.010 | 6.100.010.010 | 6.100.010.010 | |
| 3 | Hose adapter | Regeneration air inlet ø [mm] | – | – | – | 80 | 80 | |
| | | Article number | – | – | – | 6.100.010.101 | 6.100.010.105 | |
| 4 | Filter box | Process air inlet ø [mm] | 80 | 100 | 125 | 125 | 125 | Dehumidification |
| | | Article number | 6.100.010.201 | 6.100.010.205 | 6.100.010.210 | 6.100.010.210 | 6.100.010.210 | |
| 5 | Filter box | Regeneration air inlet ø [mm] | – | – | – | 80 | 80 | |
| | | Article number | – | – | – | 6.100.010.301 | 6.100.010.305 | |
| 6 | Process air filter mat | L x W x H [mm] | 20 x 130 x 140 | 20 x 205 x 185 | 20 x 230 x 240 | 20 x 230 x 240 | 20 x 230 x 240 | Humidification |
| | | Article number | 7.160.000.680 | 7.160.000.681 | 7.160.000.682 | 7.160.000.682 | 7.160.000.682 | |
| 7 | Regeneration air filter mat | L x W x H [mm] | – | – | – | 20 x 110 x 130 | 20 x 135 x 150 | |
| | | Article number | – | – | – | 7.160.000.683 | 7.160.000.684 | |
| 8 | Z-line filter G4 process air (requires 4) | L x W x H [mm] | 48 x 125 x 135 | 48 x 205 x 180 | 48 x 200 x 225 | 48 x 200 x 225 | 48 x 200 x 225 | Heating |
| | | Article number | 7.160.000.602 | 7.160.000.603 | 7.160.000.604 | 7.160.000.604 | 7.160.000.604 | |
| 9 | Z-line filter G4 regeneration air (requires 5) | L x W x H [mm] | – | – | – | 48 x 123 x 117 | 48 x 170 x 152 | |
| | | Article number | – | – | – | 7.160.000.605 | 7.160.000.606 | |
| 10 | Z-line filter F7 process air (requires 4) | L x W x H [mm] | 48 x 125 x 135 | 48 x 205 x 180 | 48 x 200 x 225 | 48 x 200 x 225 | 48 x 200 x 225 | Ventilation |
| | | Article number | 7.160.000.630 | 7.160.000.631 | 7.160.000.632 | 7.160.000.632 | 7.160.000.632 | |
| 11 | Z-line filter F7 regeneration air (requires 5) | L x W x H [mm] | – | – | – | 48 x 123 x 117 | 48 x 170 x 152 | |
| | | Article number | – | – | – | 7.160.000.633 | 7.160.000.634 | |
| 12 | Dry air heating | Dry air outlet ø [mm] | – | – | 125 | 125 | 125 | |
| | | Article number | – | – | 6.100.010.345 | 6.100.010.345 | 6.100.010.345 | |
| Further accessories | | | TTR 200 | TTR 300 | TTR 400 | TTR 400 D | TTR 500 D | |
| 13 | Quad distributor | Dry air outlet ø [mm] | – | 4 x 50 (38) | Air conditioning |
| | | Article number | – | 6.100.010.340 | 6.100.010.340 | 6.100.010.340 | 6.100.010.340 | |
| 14 | Reducer fitting from ø 50 to 38 mm for quad distributor | | 7.200.000.002 | 7.200.000.002 | 7.200.000.002 | 7.200.000.002 | 7.200.000.002 | |
| 15 | Spare sealing caps for quad distributor | ø 38 mm | 7.310.000.021 | 7.310.000.021 | 7.310.000.021 | 7.310.000.021 | 7.310.000.021 | Air cleaning |
| 16 | | ø 50 mm | 7.310.000.101 | 7.310.000.101 | 7.310.000.101 | 7.310.000.101 | 7.310.000.101 | |
| 17 | Hygrostat HG 120 | | 6.100.002.040 | 6.100.002.040 | 6.100.002.040 | 6.100.002.040 | 6.100.002.040 | Air control |
| | Hygrostat HG 125 | | 6.100.002.042 | 6.100.002.042 | 6.100.002.042 | 6.100.002.042 | 6.100.002.042 | |
| | Adapter transformer for HG 125 | | 6.100.002.043 | 6.100.002.043 | 6.100.002.043 | 6.100.002.043 | 6.100.002.043 | |
| Recommended air transport hoses * | | | TTR 200 | TTR 300 | TTR 400 | TTR 400 D | TTR 500 D | |
| 18 | Dry air outlet |  | Tronect TF-L (L 6 m) 6.100.001.110 | Tronect TF-L (L 6 m) 6.100.001.115 | Tronect TF-L (L 6 m) 6.100.001.120 | Tronect TF-L (L 6 m) 6.100.001.120 | Tronect TF-L (L 6 m) 6.100.001.120 | Accessories |
| 19 | Dry air outlet with quad distributor ø 50 mm |  | – | Tronect PV-A 51 (L 15 m) 6.100.001.020 | |
| 20 | Dry air outlet with quad distributor reduced to ø 38 mm |  | – | Tronect PV-A 38 (L 15 m) 6.100.001.010 | |
| 21 | Humid air outlet |  | Tronect PV-A 51 (L 15 m) 6.100.001.020 | Tronect PV-A 51 (L 15 m) 6.100.001.020 | Tronect TF-L (L 6 m) 6.100.001.110 | Tronect TF-L (L 6 m) 6.100.001.110 | Tronect TF-L (L 6 m) 6.100.001.110 | |
| 22 | Process air inlet (requires 2 or 4) |  | Tronect TF-L (L 6 m) 6.100.001.110 | Tronect TF-L (L 6 m) 6.100.001.115 | Tronect TF-L (L 6 m) 6.100.001.120 | Tronect TF-L (L 6 m) 6.100.001.120 | Tronect TF-L (L 6 m) 6.100.001.120 | |
| 23 | Regeneration air inlet (requires 3 or 5) |  | – | – | – | Tronect TF-L (L 6 m) 6.100.001.110 | Tronect TF-L (L 6 m) 6.100.001.110 | |

* The air transport hoses recommended as accessory and others, too, are described starting on catalogue page 150.