**Identification**

E.g. S 60/03 – dryer, capacity in litres/shortened max. temperature

**Marketing text (intended for presentation in a catalogue, on the web, etc.)**

**S dryer** up to 200/300 °C

S dryers are devices designed for drying, vulcanising, preheating, hardening, and other low-temperature treatments of a variety of materials. The dryer's stainless steel muffle ensures the long service life of the unit as it is very chemically and mechanically resistant. Thanks to the horizontal internal atmosphere circulation, S dryers also boast an even temperature distribution.

**Professional photograph of S400/02**




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**Charge treatment technology**
(PS = partially suitable)

- Drying
- Vulcanisation
- Curing
- Low-temperature material treatment
- Incineration, combustion, annealing loss
- Preheating
- Heat treatment of metal materials
- Material testing (PS)
- Annealing, reducing internal stress
- Heating
- Drying moulds and cores
- Preheating moulds
- Drying
- Tempering
- Firing

**Structural benefits of the unit**

- Furnace chamber with a long-term service life, mechanical durability and resistance to corrosion
- The horizontal internal atmosphere circulation ensures the uniform distribution of temperature in the furnace interior
- High-quality insulation material results in low operating costs for the furnace, small outer dimensions and a low unit weight

**What should be taken into consideration**

- The S dryers do not comply with the requirements for a completely dust-free environment
- The S dryers do not have an Ex design (they are not intended for environments with a risk of explosion)

**Selling points**

- Easy to install, easy to control
- Custom adjustments
- Delivery times within 6 weeks
- 24-month warranty
- Even temperature distribution
- Mechanical durability
- Chemical durability
- Easy increase of heating output
- Easy maintenance

**Product URL address**
http://www.lac.cz/en/furnaces-and-dryers/s-chamber-dryer

**Dryer structure**
The muffle and side circulation inserts are made of stainless steel. The circulation insert on the sides of the



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working area is closed and air flow in the working area is provided through the circular openings in the front and back. Shelves made of perforated steel sheets with square holes are positioned on rails, which are fixed to the circulation insert in an adjustable way. All types are fitted with a vent with a manually controlled flap. The vent is installed in the roof, approximately in the centre of the dryer. It is led out to the interior of the drier here. The flap can be controlled with a rotary disc on the vent top edge. The diameter of the vents is 50 mm for S 60 and S 100 and 100 mm for the other types. The exhaust vent is positioned at the bottom, where it is led out to the interior. Air is driven with a fan through heaters via the circulation insert on the dryer sides in the working chamber where it is sucked back through a hole in its back wall.

**Frame and casing**
The frame and external casing are made of structural steel (the S60 and S100 models have casings made of moulded sheet metal) and provided with a red RAL 3020 surface finish. The door and cover of the electric installation are made of structural steel with a black RAL 9005 surface finish. The cover of the electric installation is made of one piece of sheet metal, which is built in the frame on the bottom side and fixed with distributor locks on the top side. The frame is fitted with feet with height of 130 mm for easy dryer handling and allowing positioning on a standard stand. The "H" type stand with a dryer bottom loading edge height of 780 mm forms a part of the standard equipment for all models.

**Door**
The door has a welded frame made of structural steel with a black RAL 9005 surface finish. The door is fitted with a handle and can be opened on hinges to the left. 2 clamps are used for closing

**Dryer insulation**
The furnace is insulated with an insulation mat, which is covered with a stainless steel sheet muffle in the interior.

**Door insulation**
The door is insulated with an insulation mat and sealed with braided insulation cord.

**Heating**
The dryers in all capacities are designed for temperatures of up to 300 °C. The heating system consists of U shaped heaters installed on the dryer sides. Air circulation is provided with circulation fans.

**Electric equipment design**
All of the electric components except for the controller are positioned in the back part of the furnace and are separated from the working area with an insulation wall for all models. Access is provided through a removable cover in the back wall. The power supply cable, main switch, circuit breaker, signal lamp for motor malfunction indication (except for S60, S100) and fuse are in the back part on the regulator side. (The S60 and S100 furnaces are not provided with a main switch.) The door is fitted with a safety limit switch. The heating system and fan are turned off when the dryer opens. The S60 – S100 dryers are fitted with a flexible cord with a single-phase plug for both temperatures as standard. The other models are fitted with a 3 m long power supply cable with a CEE socket as standard.

**Measuring and control**
Temperature is detected with a K type thermocouple. The HT40 AL controller positioned on the right-hand side of the dryer is used for temperature monitoring and control. A thermostat is used as a limit unit. The dryers are fitted with SSR contactless semi-conductor switching relays.

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**Handling**

- Handling is carried out using a fork-lift truck.

**Warranty**

- 24 months

**Standard dryer equipment**

- Ht40AL controller
- Resistance heating (heating elements)
- Thermostat (use as a limit unit)
- Manually controlled exhaust flap
- Manually controlled suction flap
- "K" type thermocouple
- Contactless switching relay for noise-free operation
- Door limit switch for the safe opening of the furnace
- Stand
- Number of shelves according to the table

**Optional accessories available for an extra charge**

- Ht205 controller (30 programmes with 15 steps each)
- Ht200 controller (30 programmes with 25 steps each, USB interface)
- Automatic ventilation flap for cooling the furnace's operational space (the Ht205 or Ht200 controller is needed)
- Exhaust fan for cooling and the exhaust of flue gases (the Ht205 or Ht200 controller is needed)
- Modification for the rubber industry (muffle sealing, exhaust fan needs to be used)
- Optimisation of the temperature field for compliance with DIN 17052-1 ΔT10 °C in the internal usable space (in an empty furnace at Tmax), (a grommet for the TUS test, measuring loop calibration is required), including a report from measuring
- Measurement protocol for temperature uniformity (a grommet is needed for the TUS test)
- Measuring loop calibration (thermocouple + controller)
- Grommet for the TUS test measuring thermocouples
- EIA485 interface
- LAN interface
- HtMonit set (software + interface)
- Tree-channel digital temperature recorder
- Ammeters for checking the status of the heating elements
- Additional shelves
- Castors

**Custom accessories**

- Door opening hydraulically upwards
- Door opening pneumatically upwards (pantograph)
- Door opening manually upwards (pantograph)

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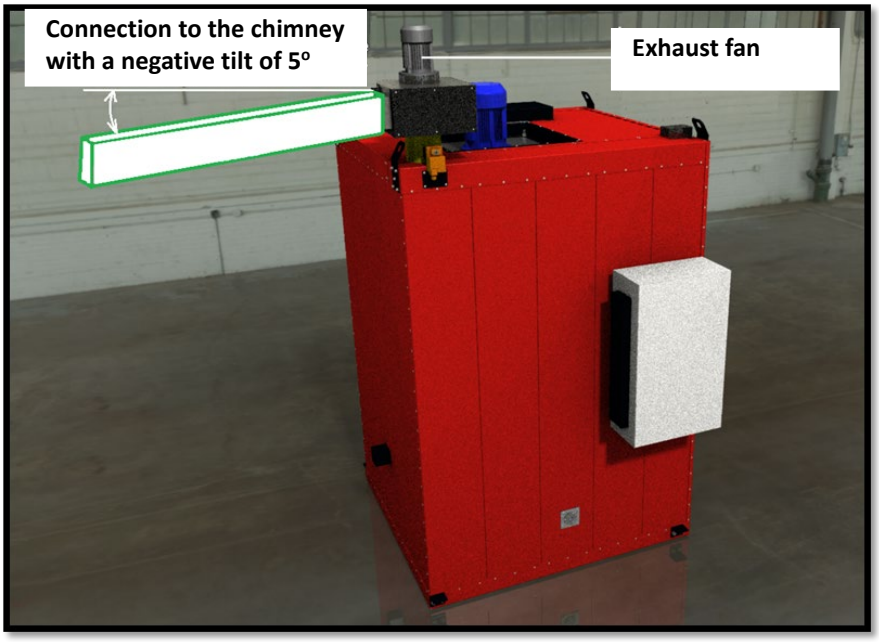
- Relative humidity measurement
- METREX gas analyser
- Door inspection window
- Interior furnace lighting
- One-handed door closing

**The most frequently used optional accessories supplied for an extra charge:**

1. **Controlled/uncontrolled vacuum forced cooling**
   The system includes:
   - Automatic exhaust flap
   - Automatic suction flap
   - Ht205 or Ht200 controller
   - Exhaust fan

2. **Modification for the rubber industry (moderate vacuum in the chamber)**
   The system includes:
   - Maximum temperature is 250 °C
   - Fan exhaust with tilt away from the fan for draining condensate (to be executed by the customer)
   - Opening at the lowest point in the exhaust for drawing off condensate (to be executed by the customer)
   - Automatic exhaust flap
   - Muffle sealing
   - Exhaust fan
   - Ht205 or Ht200 controller



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### 3. Exhaust fan for cooling or drawing off flue gases

The system includes:

- Exhaust fan
- Automatic ventilation flap
- Ht205 or Ht200 controller

| Ordering No. | LAC type | T max | Recommended operating temperature range | Volume | External dimensions (w x h x d) | Internal dimensions (w x h x d) | Power input | Number of shelves | Weight | Voltage | Number of fans | Protection* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | °C | °C | l | mm | mm | kW | ks | kg | V | ks | |
| 01072393 | S 60/02 | 200 | 100-200 | 60 | 1050x1350x950 | 450x300x450 | 2,0 | 1 | 130 | 230 | 1 | 16/1 |
| 01072394 | S 100/02 | 200 | 100-200 | 100 | 1050x1550x1000 | 450x500x450 | 3,0 | 1 | 180 | 230 | 2 | 16/1 |
| 01072395 | S 250/02 | 200 | 100-200 | 240 | 1400x1550x1200 | 800x500x600 | 4,0 | 1 | 250 | 400 | 1 | 16/3 |
| 01072396 | S 400/02 | 200 | 100-200 | 380 | 1400x1750x1200 | 800x800x600 | 4,0 | 1 | 350 | 400 | 1 | 16/3 |
| 01072397 | S 60/03 | 300 | 100-300 | 60 | 1050x1350x950 | 450x300x450 | 3,0 | 1 | 130 | 230 | 1 | 16/1 |
| 01072398 | S 100/03 | 300 | 100-300 | 100 | 1050x1550x1000 | 450x500x450 | 3,0 | 1 | 180 | 230 | 2 | 16/1 |
| 01072399 | S 250/03 | 300 | 100-300 | 240 | 1400x1550x1200 | 800x500x600 | 4,0 | 1 | 250 | 400 | 1 | 16/3 |
| 01072400 | S 400/03 | 300 | 100-300 | 380 | 1400x1850x1200 | 800x800x600 | 6,0 | 1 | 350 | 400 | 1 | 16/3 |

* Protection can vary depending on the accessories chosen (for an extra charge).
Subject to technical changes.

| LAC type | Max. load capacity of shelves (kg) | Max. load capacity of bottom (kg) |
|---|---|---|
| S 60 | 15 | 40 |
| S 100 | 15 | 50 |
| S 250 | 25 | 70 |
| S 400 | 25 | 70 |

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| Change index | Change/revision made by | Change/revision description and numbers of the changed sections/pages | Date, Signature | Change approved by Date, signature |
|---|---|---|---|---|
| 2 | Boková | From 1. 8. 2007, only 1 shelf is supplied for all types of dryers | 21. 7. 2007 | Kurečka |
| 3 | Neugebauer | From 1. 1. 2008, the S range reduced on the models only up to 300 degrees, S650 and S 1000 included in the SV range | 1. 10. 2007 | Neugebauer |
| 4 | Žilka | Changes to the brown colour (frame, structure, electrical equipment) | 31. 10. 2007 | Neugebauer |
| 5 | Furchová | Change of the INDUSTRY controller to HT 40AL for standard furnace configuration, measuring and control. | 22. 9. 2008 | Žilka |
| 6 | Furchová | S 60/02 – S 400/02 lines added – p. 3. | 13. 11. 2008 | Žilka |
| 7 | Furchová | Change of the title of the paragraph "Custom accessories" to "Accessories available for an extra charge" and adding the INDUSTRY controller | 30. 1. 2009 | Žilka |
| 8 | Furchová | Change of the warranty period to 12 months. A photograph added. | 15. 2. 2009 | Žilka |
| 9 | Horáková | Change of the temperature distribution data | 24. 8. 2010 | Anderle |
| 10 | Horáková | Change of the warranty period to 24 months | 16. 4. 2012 | Diblík |
| 11 | Herůfek | Change of the optimisation of the temperature field for compliance with the DIN for accessories supplied for an extra charge | 13. 8. 2012 | Diblík |
| 12 | Horáková | Modification of formatting, standard accessories and accessories available for an extra charge | 10. 12. 2012 | Holuša |
| 13 | Herůfek | A paragraph added: Modification for the rubber industry | 2. 4. 2014 | Názler |
| 14 | Horáková | Modification of the paragraphs "Dryer insulation" and "Door insulation". Change in accessories available for an extra charge and custom accessories | 16. 3. 2016 | Názler |
| 15 | Horáková | Modification of the S 400 furnace total height to 1,850 mm. | 29. 3. 2016 | Názler |
| 16 | Merta | Detailed update of contents. | 31.1.2019 | Názler |
| 17 | Merta | Changes in the table column T max. | 01.06.2021 | Názler |

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