

A01140 Automatic Binder Extraction Machine type 520



The new Automatic Binder Extraction Machine according to the cold extraction process DIN 1996, part 6, works almost emission-free which meets the requirements of personal and environment protection.

- Compact and closed design including sieves, aggregate drying unit, centrifuge and solvent recovery unit.
- Process controller to serve an automatic extraction.
- Solvent recovery unit capable to concentrate the binder to appr. 700 ml volume, incl. drain cock.
- Drying of the washed-out aggregates.
- Process time appr. 45 minutes including drying the aggregates (as former without drying the aggregates).

Produktspektrum Product spectrum

Asphalt / Asphalt
Beton / Concrete
Zuschlag / Aggregates
Boden / Soil
Bohren / Drilling
Schleifen / Grinding
Labor / Laboratory

The new STRASSENTEST Binder Extraction Machine type 520, catalogue no. A01140, is the consequent development of the design of Automatic Extraction Machines with sieve set, centrifuge and solvent recovery unit.

Function and application of this system is identical with our Automatic Extraction Machines type 419/518, catalogue no. A00131, for non-inflammable solvents which serves best results in asphalt laboratories since more than 20 years.



By reason of its compact and closed design, the new type 520 perfectly prevents the emission of solvents. Aggregates and filler will be dried within the system and the solvent, which condenses during the drying process, is kept in the machine. This serves best protection of the operating personnel and the environment, performed with the same analysis method, which is well-proved within more than 20 years now.

The new Binder Extraction Machine type 520 is a compact narrow design. Required space is similar to the well known Extraction Machine type 419/518 built in a fume cabinet, 1240 mm length x 810 mm width x 1880 mm height.

Since the new Binder Extraction Machine has a compact machine frame, which is covered with sheets and doors at all surfaces, it may be installed without a fume cabinet. The covered machine frame serves as a fume cabinet itself. The control cabinet is integrated into the machine frame and therefore requires no additional space.

Of course, the new Binder Extraction Machine is built with modern electronic components:

- The automatic extraction is controlled by PLC (Programmable Logic Control) and a touch panel is used for data input, program selection and indication.

The touch panel shows the necessary program steps for your input as clear comments and shows the progress of the binder extraction as written information.

The touch panel's surface is easy to be cleaned and consists of the numbers field, four function buttons and the cursor buttons. Additional, some switches and indicators for safety functions, e.g. the main switch and the error signal, are located close to the touch panel.



- The method of cold extraction analysis of asphalt is well-proved for more than 20 years: The balanced hot or cold asphalt is given into the sieve set, the binder is washed out by means of the solvent and to support the wash-out process, the sieve set is shaken by means of a vibration unit.



The function of the new binder extraction machine is as described above. Just one detail is essentially improved: The sieve set is shaken in three dimensions now, while shaken in two directions former. So the wash-out effect by means of the solvent is more efficient and the effect of obstructing the sieves during the wash-out process is almost eliminated.

A second detail concerns the handling of the sieve set: As known from the established Automatic Extraction Machines, two screws on top of the sieve set have to be fixed very accurately, which is a hard to perform procedure. The new Binder Extraction Machine is equipped with a pneumatic cylinder, which presses the lid strong but symmetrical onto the sieve set.



The centrifuge is designed similar to the proved unit in the former Extraction Machine:

120 mm dia. centrifuge cups can be used as before. Bearings and sealing are improved, so that the centrifuge runs less sensitive and the risk, bitumen will flow into the centrifuge housing, is minimized.

The solvent recovery unit has a minimum of leakage. Using the former Extraction Machine, beside the solvent, which got lost while bringing out moisten aggregates and filler, most of the solvent emitted via the leaks of the solvent recovery unit. A complete new design of cooling and sealing serves a minimum of leakage at the new solvent recovery unit.

- Level indication in the new Binder Extraction Machine is contact free. Two LED-diagrams show the relevant levels in the evaporator and in the condenser. Also these solvent levels are calculated with the process control (PLC). The old sight glass with bleede hole is past. Level indication is integrated hermetically tight into the solvent recovery unit.
- The solvent evaporator is equipped with a spray system, which serves to clean the chamber with solvent.
- Binder can be concentrated to appr. 700 to 800 ml volume and drained via a cock at the bottom of the evaporator.
So it is achieved, that the binder is drained almost free of solvent. This is also a contribution to save the environment and the personnel.
- Of course, a binder sample may always be taken during the process, by means of a drain cock at the right side below the control panel.



- The aggregates drying unit is composed from industrial-proved components.

Pipes with large cross-section (20 mm dia.) serve preserve and silent drying.

The drying unit is placed behind the control cabinet.

Solvent condensed during the aggregate drying is led into the solvent recovery unit (closed solvent circuit).



Relevant for all the solvent recovery units: The efficiency is better by use of enough and very cold cooling water.

Using trichlorethylene, the cooling water should have a temperature of maximum 12°C, throughput 6 litres per minute at 4 bar maximum pressure.

It is recommended to use a cooling water reconditioner, e.g. the STRASSENTEST catalogue no. H05490, to ensure the required conditions, even in summer, and to reduce water consumption and save costs.

Technical data:

Dimensions:	w x d x h = 1240 x 810 x 1880 mm
Weight:	approx. 550 kg
Electrical connection / power:	230/400 V, 50 c/s, 6 kW
Cooling water, consumption:	4 bar max., 12 °C max. feed temperature, 6 - 8 litres per minute throughput
Compressed air, consumption:	6 bar, approx. 0.1 m ³ per hour
Asphalt amount weighed in:	3,5 kg max.
Extraction time of 2,5 kg asphalt B90:	approx. 45 min incl. drying
Sieve set:	200 mm dia., height 325 mm (e.g. 5 sieves plus 1 empty ring per 50 mm height and 1 sieve 25 mm height)
Centrifuge cups:	120 mm dia., height 200 mm (as used in the Extraction Machine type 419/518)
Solvent recovery rate:	35 litres trichlorethylene per hour (equivalent to the Extraction Machine type 419/518)
Lost of solvent:	<0,05 litre trichlorethylene per extraction (2,5 kg B90) depends essentially on the amount of solvent, which remains in the binder sample)

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We reserve the right of modifications without prior notice.