

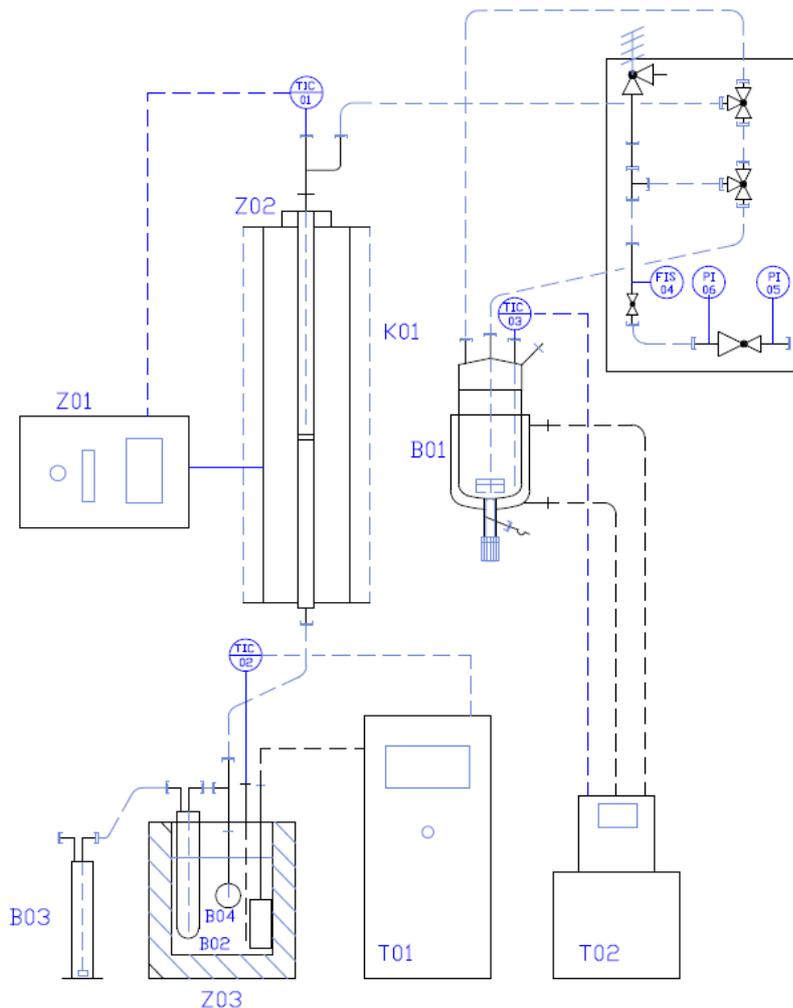
NORMAG adsorption unit

- **NORMAG design for high reproducibility and efficiency**
- **modular design, various dimensions**
- **customer and process specific design**
- **applications:**
 - teaching unit
 - laboratory
 - experimental halls
- **options**
 - mobile unit
 - H₂ as carrier gas
 - specific teaching unit manuals

The **NORMAG** adsorption unit is determined for teaching purposes as well as for separation processes in the laboratory and experimental hall scale. Starting from the simple adsorption to the catalytic separation of isomers is a wide range of applications possible. The maximum temperature in the adsorption tube is at 950°C (desorption). Nearly all types of adsorbents can be used (Zeolite, activated carbon, molecular sieve). A high efficiency and very good reproducibility are typical for this unit. The modular design of the unit enables a customer and process specific lay-out. The unit will be pre-assembled and tested.



NORMAG adsorption unit



Process description:

The feed solution will be fed into the reactor B01 and the required process temperature will be adjusted via the thermostat T02. Afterwards the carrier gas with a defined volume flow will be distributed with a frit as very fine bubbles into the solution in the reactor. In the reactor B01 the carrier gas will be enriched with the to be separated component of the solution. The enriched carrier gas flows into the tubular oven Z02 with integrated adsorption tube K01 which has been heated-up in advance and rinsed with nitrogen. In the adsorption tube K01 the carrier gas will flow around and into the adsorbents. Within that process the enriched component will be adsorbed from the adsorbents. The purified carrier gas will be removed out of the process via a cooling trap and gas scrubbing bottle.

An easy and fast desorption is made at temperatures up to 950 °C. The adsorbate will evaporate under these conditions and collected afterwards in the sample vessel B04 at low temperatures. The change of the sample vessel can be made easily so that the corresponding analysis for the distillate can be made without delay.

Example:

- adsorption of Iso- and n-hexane at zeolitic molecular sieve

Technical specification:

dimension:	1500 x 1300 x 550 mm (H x B x T)
reactor volume:	bis zu 10 l
temperature reactor	20 - 200 °C (optional up to 300°C)
temperature oven / adsorption tube	30 - 950 °C
pressure range	-1 / +0,5 barg

media:

power	230V / 50Hz
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