

NORMAG Teaching - Batch unit for chemistry/ pharmacy

- Customer and training specific design and software
- Electromagnetic reflux divider
- Vacuum filtration
- **NORMAG**-mini plant agitator – NLRW 2102 with single seal coupling
- Several sizes available
- Control cabinet with display, control and steering options
- Operation terminal with PC and graphically user interface
- Options:
 - Fractionation of distillate
 - Control of discharging distillate by pressure difference
 - Vacuum operation

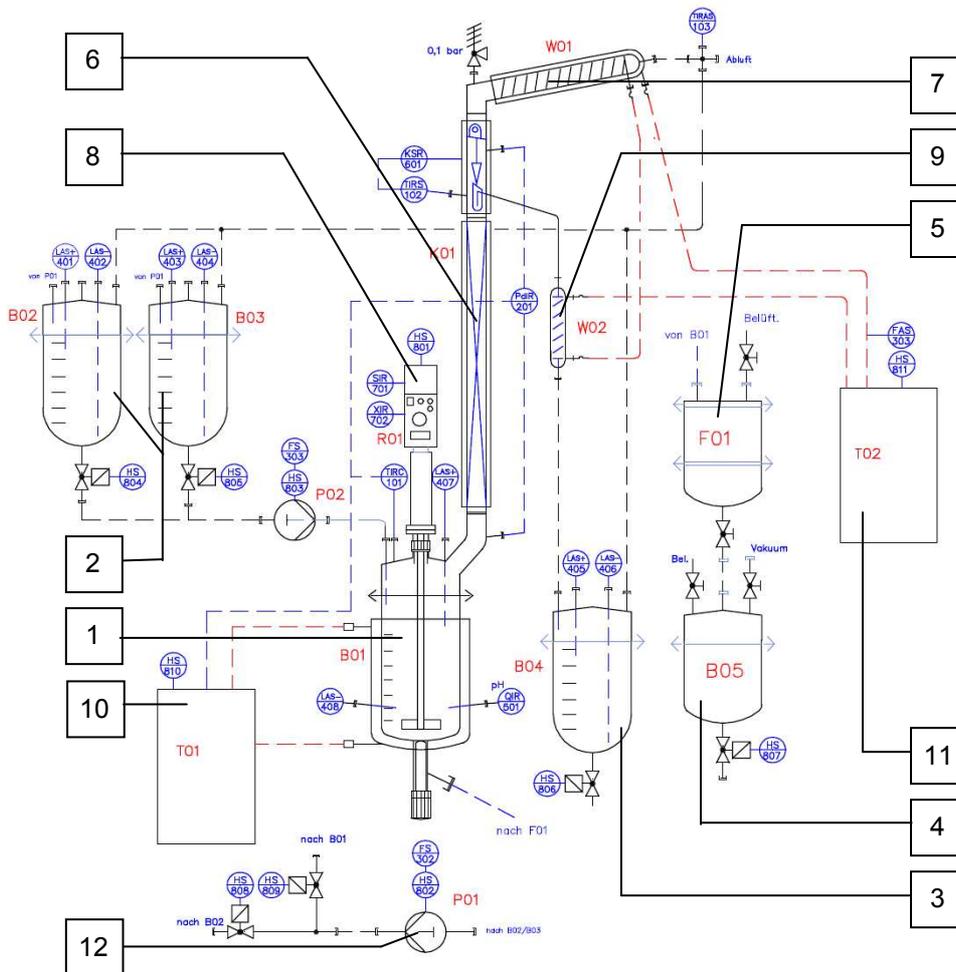
Teaching units facilitate a practice oriented and up-to-date education.

The **NORMAG**-Batch unit covers a wide range of processes and is capable for batch and semi-batch operations. Possible are: separation of mixtures by distillation, rectification, evaporation under totally reflux, mixing of substances.

Solids can be separated easily due to vacuum filtration. Through process control system and separate user terminal with graphic interface the whole apparatus can be controlled and process data are stored for further processing. It is possible to create custom-specific malfunctions on the process control system, the trainees have to solve as in future workshops. Only high quality components are assembled for safety and failure-free operation. The unit will be supplied completely mounted and tested.



Characteristic of NORMAG Teaching-Batch unit



- 1 B01 Reaction vessel
- tempering jacket
 - 2 B02, B03 Feed vessel
- with liquid level control
 - 3 B04 Distillate receiver
- with liquid level control
 - 4 B05 Filtrate receiver
 - 5 F01 Filtration unit
- vacuum filtration
 - 6 K01 Packed column
- electro magnetic reflux divider
- silver coated
- high vacuum jacket
 - 7 W01 Condenser with overpressure valve
 - 8 R01 agitator NLRW - 2102
 - 9 W02 Product cooler
 - 10 T01 Heating circulator
- -35 ... 200 °C
 - 11 T02 Circulating cooler
- -15 ... 80 °C
 - 12 P01, P02 Diaphragm pump
- Typical operations:**
- Cooling/heating
 - Mixing /reaction/
 - Rectification, Distillation
 - Total reflux
 - Vapor pressure test of pure substances
 - Filtration

Technical specifications:

Materials with product contact:	Borosilicate glass, PTFE, PVDF, PP
Reaction space::	10 l Reaction vessel,
Process temperature:	-20 ... 150 °C
Process pressure:	-1 / + 0,1 bar
Size:	3500x1500x2800
Supply:	
Current:	230/400 VAC, 50/60 Hz