

Typical Units

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12. TYPICAL UNITS

BOMEX is a trustworthy brand of quality.

BOMEX can supply all the apparatus to you from laboratory to pilot plant, and real production plant.

Apparatus include:

reaction apparatus stirring apparatus distilling apparatus evaporating apparatus extraction apparatus absorption apparatus crystallization apparatus rectifying apparatus

BOMEX constantly develop+A2768 industrial glass pipelines and apparatus with our rich experience and advance technology. We can provide full-range unit products, unit or set glass production apparatus designed according to the requirement of the customers. And we also provide directing service for the installation of glass chemical apparatus.



This module is for reference only relevant data



12.1 Glass Distillation /Rectifying Columns



Technical parameters of the glass distillation/ rectifying column

ITEM	PARAMETERS
Dia. of column	DN80.DN100.DN150.Φ180.Φ230. DN300.DN400.DN600
Rectifying column	multi-filling 1,000 meter column
Packing	glass raschig ring or structure ceramic ripple packing
Condensation	top condensing cooler 1 ~ 10m ²
Operating pressure	normal pressure ~10mmHg
Operating temperature	normal temperature ~150°C



12.2 Mobile Vessels



12.3 Chromatography Column

ITEM	PARAMETERS
Dia. of column	DN80.DN100.DN150.Ф180.Ф230.DN300.DN400.DN600









12.4 Simple Distillation unit

- 1. Reactor (spherical vessel 10L-200L or cylindrical vessel)
- 2. Thermostat (electric heating/vapor heating/heat conductive oil bath)
- 3. Dip pipe inlet
- 4. Temperature measuring
- 5. Distillation pipe
- 6. Condenser
- 7. Product outlet
- 8. Bottom discharge

VOLUME OF REACTOR	DN OF DISTILLATION PIPE	COOLING AREA m ²
20L	80	0.4
50L	100	0.6
100L	150	1.5
200L	200	2







12.5 Jacketed Reactors

ITEM	TECHNICAL PARAMETERS
Volume	10L.20L.30L.50L



12.6 Mobile Glass Absorption Unit





Through self-circulation and jet negative pressure, it can repeatedly use the exhaust gas.



12.7 Reaction Unit

- 1. Stirring drive
- 2. Top vessel
- 3. Stirring seal
- 4. Stirrer paddle
- 5. Reactor
- 6. Thermostat (electric heating/vapor heating/heat conductive oil bath)
- 7. Bottom discharge valve
- 8. Condenser
- 9. Reflux separator
- 10. Structure framework
- 11. Product condensing
- 12. Product receiver
- 13. Product discharge valve

REACTION VOLUME	DISTILLING TUBE	COOLING Distilling	GAREA m ² Product	VESSEL	RECEIVING VESSEL
20L	DN80	0.4	0.1	20L	5L×2
50L	DN100	0.6	0.2	30L	10L×2
100L	DN150	1.5	0.4	100L×2	30L×2
200L	DN200	2	0.4	50L×2	50L×2





12.8 Fractional (Vacuum) Distillation Unit

- 1 Reactor (spherical vessel 10L-200L or cylindrical vessel)
- 2 Thermostat (electric heating/vapor heating/heat conductive oil bath)
- 3 Bottom discharge
- 4 Temperature measuring in the reactor
- 5 Dip pipe
- 6 Packing column
- 7 Reflex separator
- 8 Fraction temperature measuring
- 9 Condenser
- 10 Vacuum outlet
- 11 Product cooler
- 12 First receiving flask
- 13 Second receiving flask
- 14 Vacuum outlet
- 15 Vacuum safety valve



REACTION VOLUME	DISTILLING TUBE	COOLING Distilling	AREA m ² Product	COLUME m	RECEIVING VESSEL
20L	DN80	0.4	0.1		10L/5L
50L	DN100	0.6	0.2	1000	20L/10L
100L	DN150	1.5	0.4	1000	30L/20L
200L	DN200	2	0.4		50L/30L



12.9 Reaction Distillation Unit

- 1 Top vessel
- 2 Reactor (spherical vessel 10L-200L or cylindrical vessel)
- 3 Temperature measuring in the reactor
- 4 Thermostat (electric heating/vapor heating/heat conductive oil bath)
- 5 Bottom discharge valve
- 6 Stirrer paddle
- 7 Stirrer motor
- 8 Discharge or vacuum outlet
- 9 Condenser
- 10 Reflux separator
- 11 Fraction temperature measuring
- 12 Product cooler
- 13 Vacuum safety valve
- 14 Receiving vessel

REACTION VOLUME	DISTILLING TUBE	COOLING Distilling	AREA m ² Product	VESSEL	RECEIVING VESSEL
20L	DN80	0.4	0.1	20L	5L×2
50L	DN100	0.6	0.2	30L	10L×2
100L	DN150	1.5	0.4	50L	30L×2
200L	DN200	2	0.4	100L	50L×2





12.10 Condenser Over Glass Line Reactor

- 1 Glass line reactor
- 2 Distilling column pipeline
- 3 Top distilling column temperature measuring
- 4 Condenser
- 5 Reflux valve
- 6 Receiving vessel

REACTION VOLUME	DISTILLING TUBE	COOLING Distilling	AREA m ² Product	COLUME	RECEIVING VESSEL
500L	DN100	0.4	0.1	2m	10L
1000L	DN100	0.6	0.2	2m	
2000L	Ф180	1.5	0.4	3m	20L
3000L	Ф230	2	0.4	3m	

12.11 Shell & Tube Over Glass Line Reactor

- 1 Glass line reactor
- 2 Shell and tube condenser
- 3 Air-liquid separator
- 4 Product cooler
- 5 Receiving vessel







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12.12 Liquid-Liquid Extraction Unit

- 1 Extractor
- 2 Discharge valve
- 3 Reflux valve
- 4 Discharge outlet
- 5 Condenser
- 6 Reflux separator
- 7 Distillation pipeline
- 8 Spherical vessel
- 9 Heating vessel
- 10 Discharge valve

REACTION VOLUME DISTILLING TUBE COOLING AREA m² EXTRACTION VESSEL

10L	DN40×1m	0.4	10L
20L	DN50×1m	0.6	20L
50L	DN80×1m	1.5	50L

12.13 Solid-Liquid Extraction Unit

- 1 Extractor
- 2 Discharge valve
- 3 Reflux valve
- 4 Discharge outlet
- 5 Condenser
- 6 Reflux separator
- 7 Distillation pipeline
- 8 Spherical vessel
- 9 Heating vessel
- 10 Discharge valve

REACTION VOLUME DISTILLING TUBE COOLING AREA m² EXTRACTION VESSEL

10L	DN40×1m	0.4	10L
20L	DN50×1m	0.6	20L
50L	DN80×1m	1.5	50L





12.14 HCL Absorption Tower

- 1 Discharge outlet
- 2 Acid receiving outlet
- 3 Bottom discharge valve
- 4 Condenser
- 5 Packing column
- 6 Air pipeline outlet
- 7 Condenser
- 8 Water absorption inlet
- 9 Discharge outlet

PACKING COLUME	COOLING AREA m ²	AIR VOLUME APPX.
DN80×3m	0.4×2	10kg/hr
DN100×4m	0.6×2	20kg/hr
Ф180×4m	1.5×2	80kg/hr
Ф230×4.5m	2.5×2	150kg/hr
DN300×4.5m	2.5×2	300kg/hr

12.15 Vacuum Circulating Evaporators



- 1 Evaporator
- 2 Insert reboiler
- 3 Circulator
- 4 Packing column
- 5 Raschig ring
- 6 Receiver valve
- 7 Bend
- 8 Cylinder
- 9 Coil Condenser
- 10 Vacuum condenser
- 11 Receiving vessel





12.16 Bromine Extraction Unit

All BOMEX bromine extraction apparatus are made of borosilicate glass and PTFE, featuring many advantages, such as corrosion-proof, energy-saving, transparency for easy observation, durability and easy maintenance.

BOMEX bromine extraction apparatus are designed on the basis of international and domestic experience, and with advanced technologies, such as: energy recycling, static mixing, column showering, waste gas processing, column framework components, to ensure advanced production processing capacity of the apparatus.



- 1. Heat exchanger
- 2. Distillation tower
- 3. Shell and tube cooler
- 4. Bromine water separator
- 5. First and second rectifying column
- 6. Exhaust air absorption tower
- 7. Product bromine outlet

12.17 Dilute Acid Concentrated Apparatus

In the apparatus for producing chemicals such as nitrobenzene, there is a need to extract and reuse dilute acid for balanced reaction and for environmental protection. BOMEX efficient glass heat exchangers are necessary hardware for this purpose.





This is the 60 M² heat exchangers of nitrobenzene,16T/h of dilute acid concentration, for China Petrochemical Group, Nanjing Chemical Co., Ltd.



12.18 Falling-Film Evaporator

In pharmaceutical industry, falling-film evaporation is applied to the extraction of important substances such as Vitamins, hormones, enzymes, antibiotics from plants and animals. These substances are vulnerable to heat. To solve the problem of the extraction, especially in vacuum operation, falling-film evaporators are developed. BOMEX falling-film evaporators are a kind of vertical pipe devices with internal vertical pipes which are heated by outside gas or liquid. The evaporated liquid substance will be evenly distributed on the top of the evaporators by appropriate methods, forming a falling film on the internal wall.On entering the evaporator, the liquid will be heated to boiling point or even higher temperatures, causing immediate evaporation of the liquid at the entrance, with both the gas and the liquid flowing downward to form the well-mixed film, thus speeding up evaporation. In this way, the evaporated gas is separated from the leftover liquid.

12.19 Nutsch Filters



Through the filters of different mesh in the device, different substances are separated.



12.20 Mixer-Settlers



Structure:

- 1. Mixing area
- 4.Stepless speed change motor
- 7. Manual regulator
- 10. Discharge
- 12. Heavy phaseinlet
- Separating area
 Stirrer
 Regulating range
 Light phase inlet
 Heavy phase outlet
- 3.Settling area 6.PTFE baffle 9. Light phase outlet

14. Net row

Mixing area

It is equipped with stepless adjustable motor and PTFE stirrer suited for any kind of solvent and high temperature environment.



Settling area

It is equipped with PTFE regulating valve, suited for different kind of mixing and settling.







Multi Mixer-Settler

BOMEX can provide multi mixer-settler to meet different demand for better effect.





Jacketed Mixer-Settler

BOMEX can provide Jacketed mixer-settler for separating different substances.



Exhaust absorption procedure



12.21 Condensing apparatus for chloracetic acid production

Many chloracetic acid manufacturers in China choose glass condenser as their multicondensing apparatus because of its good heat exchange, air-pollution free and corrosion-resistant properties.





distillation procedure

vacuum procedure



Glass Equipment , Guangzhou Lonza



Equipment for GMP glass pilotscale experiment, Tianjin



Absorption Tower, Institute of Tsinghua University



Pharmacy pilotscale experiment Equipment, Suzhou Novarti



Spirulina producing equipment, Inner Mongolia



Condenser equipment for chloroacetic acid, Hebei Province



Equipment for new energy, Hebei Province



50L Reaction equipment and unit, Chinese Academy of Science



100L Reaction Distillation Unit, Jiangsu



20L Reaction equipment and unit, Chinese Academy of Science



Condenser equipment, Tianjin



Hydrogen peroxide Producing equipment, Tianjin



Equipment for GMP glass pilotscale experiment, Chinese Academy of Science



Equipment for refining the precious metal, Pakistan



Reaction equipment and unit, Institute



Multi extractor, Pakistan



Jacket glass reactor, Shandong



50L Moving Unit, shanghai



200L glass reactor, Taiwan



Glass Reactor, China Aerospace



Extractor, Suzhou UMICORE