

# TINSINS

## PRESSURE VESSELS & PROCESS EQUIPMENT

ENGINEERED FOR RELIABILITY | BUILT FOR INDUSTRY

# ENGINEERING CONFIDENCE



## More than equipment.
## A dependable project partner.

Overseas buyers need clear technical communication, controlled manufacturing, traceable quality records, and responsive delivery support. Tiansheng brings these elements together in one project workflow.

### ENGINEERING

Application review, mechanical design coordination, drawings, and document control.

### MANUFACTURING

Pressure vessels, process equipment, internals, piping, and skid integration.

### QUALITY

Material traceability, welding control, inspection, testing, and final documentation.

### SERVICE

Prompt quotation support, production updates, export coordination, and after-sales response.

# BUILT ON MANUFACTURING EXPERIENCE

Zhejiang, China

## Focused on demanding process applications.

Zhejiang Tiansheng Equipment Manufacturing Co., Ltd. was established in 2024 through the combined expertise of Zhejiang Qiangsheng Filter Material Co., Ltd., founded in 1989, and Taizhou Zhongli Chemical Equipment Manufacturing Co., Ltd.

The company designs and manufactures pressure vessels and process equipment for chemical, petrochemical, pharmaceutical, food, environmental, and utility applications.

Our approach combines practical fabrication experience, project-specific engineering, controlled inspection, and responsive customer support.

**CUSTOM ENGINEERING**

**QUALITY CONTROL**

**EXPORT SUPPORT**



Illustrative manufacturing visual

# PRODUCT PORTFOLIO

Configured for each process duty



## TOWER SYSTEMS



## REACTORS



## HEAT EXCHANGERS



## FILTRATION



## SEPARATION



## STORAGE & SKIDS

# TOWER SYSTEMS



## WHY IT MATTERS

Engineered gas-liquid contacting equipment for separation, absorption, stripping, and rectification duties.



## KEY FEATURES

- Packed and tray-column configurations
- Custom internals and distribution systems
- Large-diameter fabrication capability
- Shop assembly and inspection planning

## DESIGN CAPABILITY

Typical capability shown in the source catalog: diameter up to 7.5 m, wall thickness up to 50 mm, and height up to 60 m. Final limits depend on material, code, transport, and project design.

## TECHNICAL SELECTION & CONFIGURATION

| | |
|---|---|
| **Catalog dimensional capability** | Diameter up to 7.5 m; wall up to 50 mm; height up to 60 m* |
| **Process configuration** | Packed / tray column; distributors and internals as specified |
| **Design basis** | Design and operating pressure / temperature; vacuum duty where applicable |
| **Sizing inputs** | Feed composition, gas / liquid rates, product specifications and turndown |
| **Material selection - see p.12** | CS / SS 304 / SS 316L; special materials subject to review |

### COLUMN BENCHMARK | PFAUDLER [B1]

Published column capability: diameter 6,000 mm x length 40,000 mm; pressure up to 50 kg/cm2.

External benchmark only; not a verified TINSINS rating. * Original catalog statement retained. See reference appendix.

# REACTORS



## WHY IT MATTERS

Custom vessels for mixing, reaction, heating, cooling, dosing, and pressure-controlled processing.



## KEY FEATURES

- Agitator and seal configuration
- Jacket or internal-coil heat transfer
- Custom nozzles and instrumentation
- Lined, clad, or alloy construction options

## DESIGN CAPABILITY

Typical source-catalog capability: diameter up to 5 m and wall thickness up to 60 mm. Carbon steel, stainless steel, nickel alloys, titanium, and project-specific materials are available.

## TECHNICAL SELECTION & CONFIGURATION

| | |
|---|---|
| **Catalog dimensional capability** | Diameter up to 5 m; wall thickness up to 60 mm* |
| **Volume & process duty** | Total / working volume; batch duty, viscosity and solids loading |
| **Pressure & temperature** | Separate vessel and jacket / coil conditions; vacuum requirement |
| **Mixing & heat transfer** | Agitator, speed, motor duty, seal and required heating / cooling load |
| **Material selection - see p.12** | CS / SS 304 / SS 316L; special materials subject to review |

### REACTOR SERIES BENCHMARK | PFAUDLER [B1]

Glass-lined BE: 630-80,000 L; CE: 1,600-40,000 L. These series do not rate metal reactors.

External benchmark only; not a verified TINSINS rating. * Original catalog statement retained. See reference appendix.

# HEAT EXCHANGERS

Efficient thermal transfer

## WHY IT MATTERS

Shell-and-tube equipment designed around thermal duty, pressure drop, fouling tendency, maintenance access, and materials compatibility.



## KEY FEATURES

- Fixed tube-sheet designs
- Floating-head configurations
- U-tube heat exchangers
- Reboilers and condensers

## DESIGN CAPABILITY

Typical source-catalog capability: diameter up to 3 m and wall thickness up to 50 mm. Thermal and mechanical requirements are confirmed during project review.

## TECHNICAL SELECTION & CONFIGURATION

| | |
|---|---|
| **Catalog dimensional capability** | Diameter up to 3 m; wall thickness up to 50 mm* |
| **Configurations** | Fixed tube-sheet / floating-head / U-tube; condenser or reboiler duty |
| **Thermal sizing** | Heat duty, flow and inlet / outlet temperatures on both sides |
| **Pressure & performance** | Each-side design pressure / temperature, pressure drop and fouling basis |
| **Material selection - see p.12** | CS / SS 304 / SS 316L; special materials subject to review |

### HEAT-EXCHANGER BENCHMARK | R&D THERM [B4]

Published tube length: 1,000-6,000 mm; design temperature: -20 to 500+ deg C, model-dependent.

External benchmark only; not a verified TINSINS rating. * Original catalog statement retained. See reference appendix.

# FILTRATION SYSTEMS

Clean, contained operation

## WHY IT MATTERS

Pressure filtration equipment for removing solids, recovering products, and protecting downstream processes.



## KEY FEATURES

- Candle and cartridge configurations
- Enclosed operation for hazardous media
- Backwashing and discharge options
- Maintainable internal assemblies

## DESIGN CAPABILITY

Filtration method, element type, micron rating, differential pressure, cleaning cycle, and metallurgy are selected for the process medium and operating duty.

## TECHNICAL SELECTION & CONFIGURATION

| | |
|---|---|
| **Configurations** | Candle / cartridge; enclosed filtration and selected cleaning method |
| **Duty & sizing** | Medium, viscosity, solids content, particle distribution and required flow |
| **Retention requirements** | Micron rating and nominal / absolute basis; required filtrate quality |
| **Operating envelope** | Design / operating pressure and temperature; element differential pressure |
| **Material selection - see p.12** | CS / SS 304 / SS 316L; special materials subject to review |

### CANDLE-FILTER BENCHMARK | BHS [B5]

Standard CF active area: 1-86.4 m2; operating pressure up to 6 bar g; temperature up to 80 deg C.

External benchmark only; not a verified TINSINS rating. * Original catalog statement retained. See reference appendix.

# SEPARATION EQUIPMENT

Reliable phase separation

## WHY IT MATTERS

Equipment for gas-liquid, liquid-liquid, and gas-solid separation in process and utility systems.



## KEY FEATURES

- Mist eliminators and coalescing internals
- Cyclonic and gravity separation
- Custom inlet and outlet devices
- Drainage and level-control interfaces

## DESIGN CAPABILITY

Separator sizing is based on flow rate, phase properties, allowable carryover, pressure drop, turndown, and required separation efficiency.

## TECHNICAL SELECTION & CONFIGURATION

| | |
|---|---|
| **Separation duty** | Gas-liquid / liquid-liquid / gas-solid; phase properties and flow rates |
| **Separation mechanism** | Gravity / cyclonic / coalescing / mist elimination as specified |
| **Performance inputs** | Allowable carryover, target particle / droplet size and pressure drop |
| **Design envelope** | Design / operating pressure and temperature; turndown and hold-up volume |
| **Material selection - see p.12** | CS / SS 304 / SS 316L; special materials subject to review |

### SEPARATOR BENCHMARK | HANTECH [B2]

Published ammonia-plant separator project: ID 1,800 mm x length 6,310 mm; wall 53 mm.

External benchmark only; not a verified TINSINS rating. * Original catalog statement retained. See reference appendix.

# STORAGE TANKS

Safe process containment

## WHY IT MATTERS

Vertical and horizontal vessels for vacuum, atmospheric, and pressurized storage duties.



## KEY FEATURES

- Horizontal and vertical arrangements
- Dished, elliptical, conical, or flat heads
- Custom supports, platforms, and insulation
- Level, vent, drain, and safety connections

## DESIGN CAPABILITY

Typical source-catalog capability: diameter up to 3 m and wall thickness up to 50 mm. Configuration depends on medium, capacity, code, site conditions, and transportation limits.

## TECHNICAL SELECTION & CONFIGURATION

| | |
|---|---|
| **Catalog dimensional capability** | Diameter up to 3 m; wall thickness up to 50 mm* |
| **Storage configuration** | Vertical / horizontal; atmospheric / pressure / vacuum duty as designed |
| **Capacity & medium** | Total / working volume; density, corrosion and cleaning requirements |
| **Design envelope** | Pressure / vacuum and temperature; site loads and external-pressure checks |
| **Material selection - see p.12** | CS / SS 304 / SS 316L; special materials subject to review |

### STORAGE BENCHMARK | PFAUDLER [B1]

Glass-lined storage / receiver series: nominal capacity 20-125,000 L; not a universal tank range.

External benchmark only; not a verified TINSINS rating. * Original catalog statement retained. See reference appendix.

# SKID-MOUNTED SYSTEMS

Integrated and ready to install

## WHY IT MATTERS

Packaged systems combine vessels, pumps, piping, valves, instruments, controls, and access structures on a coordinated base.



## KEY FEATURES

- Reduced site assembly
- Coordinated mechanical and electrical interfaces
- Modular equipment selection
- Factory assembly and pre-delivery checks

## DESIGN CAPABILITY

Typical applications include chemical dosing, blending, filtration, transfer, and other packaged process duties. Scope is customized to the customer process description and control philosophy.

## TECHNICAL SELECTION & CONFIGURATION

| | |
|---|---|
| **Package duties** | Dosing / blending / filtration / transfer; scope per process description |
| **Process basis** | Flow or capacity, medium, pressure / temperature and utility requirements |
| **Equipment & piping** | Vessel / pump selection, material, valves, piping and battery-limit interfaces |
| **Controls & installation** | Control philosophy, power supply, instruments and site area classification |
| **Material selection - see p.12** | CS / SS 304 / SS 316L; special materials subject to review |

### DOSING-PACKAGE BENCHMARK | PROMINENT [B6]

DULCODOS Compact metering rate: 50-1,040 L/h; chemical dosing only, not all process skids.

External benchmark only; not a verified TINSINS rating. * Original catalog statement retained. See reference appendix.

# MATERIALS - GRADES & SCOPE

Separate catalog-listed materials from external grade examples

## CATALOG-LISTED MATERIALS

| | |
|---|---|
| **Carbon steel** | Family listed in original catalog. Exact pressure-vessel grade, standard and product form were not provided. |
| **Stainless steel** | 304 and 316L are explicitly named in the original catalog. Shell, heads, tubes, tube-sheet, internals and piping need separate specifications. |
| **Nickel alloys / titanium** | Families listed for reactors and project-specific selection. Exact alloy / titanium grade and approved fabrication range are not provided. |
| **Zirconium / lined / clad** | Original catalog describes these as options for evaluation. Base metal, corrosion layer, thickness and fabrication method need review. |

## EXTERNAL GRADE EXAMPLES - NOT VERIFIED TINSINS SCOPE

| | |
|---|---|
| **Carbon steel** | SA516-70 / SA516-70N in Hantech project records [B2]. |
| **Stainless steel** | 304/304L and 316/316L in R&D Therm material list [B4]. |
| **Duplex / special alloys** | 2205 / 2507: Outokumpu Forta [M1]. Titanium and Hastelloy families in R&D Therm [B4]; exact grades depend on source. |

MATERIAL SPECIFICATION RULE

A family name is not a purchasing grade. Specify standard, grade, product form, condition and material certification. Do not treat grades from different standards as interchangeable without design review. No blanket pressure / temperature rating applies to a material family.

[M1] Outokumpu Forta grade reference:
https://www.outokumpu.com/en/products/product-ranges/forta

# MANUFACTURING RANGE - BY PRODUCT

Original catalog upper limits | no unverified lower limits added

## DIMENSIONAL CAPABILITY MATRIX

| Equipment | Diameter | Wall thickness | Height / length |
|---|---|---|---|
| **Tower systems** | Up to 7,500 mm | Up to 50 mm | Height up to 60,000 mm |
| **Reactors** | Up to 5,000 mm | Up to 60 mm | Not stated |
| **Heat exchangers** | Up to 3,000 mm | Up to 50 mm | Not stated |
| **Storage tanks** | Up to 3,000 mm | Up to 50 mm | Not stated |
| **Filtration systems** | Not stated | Not stated | Not stated |
| **Separation equipment** | Not stated | Not stated | Not stated |
| **Skid-mounted systems** | Layout-specific | Per equipment | Not stated |

These upper limits are retained from the original TINSINS catalog. No lower limit was supplied. Diameter basis (ID / OD), wall scope, material-specific limits, weight and transport constraints require confirmation. Maximum values are not necessarily achievable together.

## PRESSURE / TEMPERATURE / PROCESS CAPACITY

TINSINS company-specific design pressure, temperature, vacuum, volume, thermal duty, throughput and motor-power ranges were not supplied. They remain project-specific. Reactor vessel and jacket / coil, and exchanger shell / tube sides must be specified separately. External ranges in product panels and appendix remain attributed to their original manufacturers.

## FABRICATION ROUTE LISTED IN ORIGINAL CATALOG

CNC plasma cutting; four-roll plate bending; twin-torch seam welding; automatic welding; vessel polishing; column-and-boom welding. Equipment model, machine limits, lifting capacity and material / thickness qualifications were not supplied, so no numerical machine capacity is implied.

Acceptance basis: approved project data sheet + design review + manufacturing feasibility confirmation.

# CONTROLLED MANUFACTURING

Equipment, process, discipline



CNC PLASMA CUTTING




FOUR-ROLL PLATE BENDING



TWIN-TORCH SEAM WELDING



AUTOMATIC WELDING



VESSEL POLISHING



COLUMN-AND-BOOM WELDING

# PROFESSIONAL WELDING

Process discipline in every joint



LARGE PRESSURE-VESSEL FABRICATION



PRECISION WELDING CONTROL



AUTOMATED WELDING



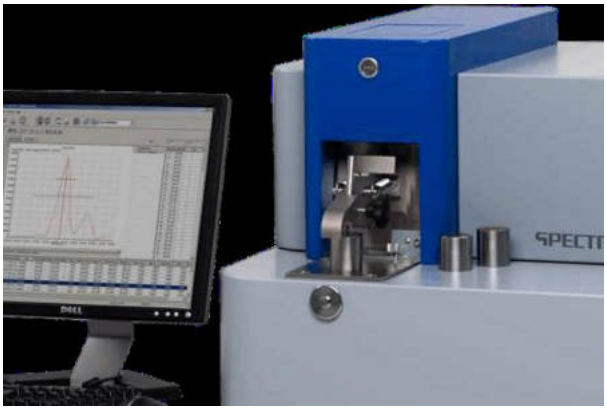


## WELDING QUALITY

- Joint preparation
- Qualified procedures
- Welder control
- Controlled heat input
- Interpass cleaning
- Visual inspection
- NDE as specified
- Traceable records

# INSPECTION YOU CAN VERIFY

Traceable records and hold points



## ELEMENTAL ANALYSIS




## PORTABLE FLAW DETECTION




## RADIOGRAPHIC TESTING



## SURFACE INSPECTION



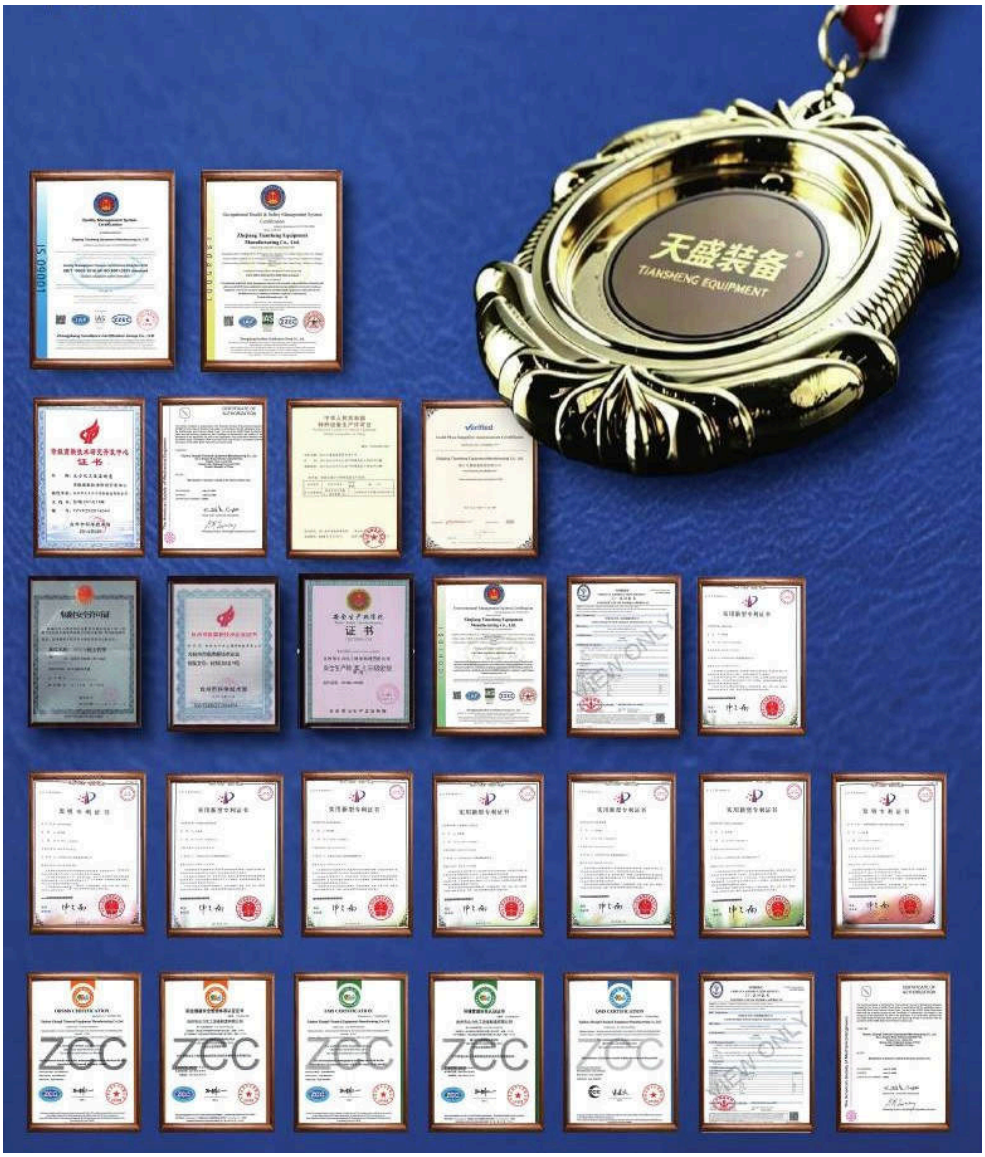

## ULTRASONIC TESTING



## MATERIAL VERIFICATION

# CODES, STANDARDS & QUALIFICATIONS

Confirm scope during quotation




## PROJECT COMPLIANCE

The source materials reference Chinese pressure-vessel manufacturing qualifications, ISO 9001 quality-management practices, GB/T 150, NB/T 47014-47016, and ASME-related capability. The exact certificate holder, validity, authorized scope, edition, stamping requirement, and third-party inspection arrangement must be confirmed for each quotation and contract.

**IMPORTANT: Certifications shown are subject to verification against current original certificates.**

# A CLEAR PATH FROM RFQ TO SHIPMENT

Transparent project coordination

01

## RFQ REVIEW

Process data, specifications, code, scope, schedule

02

## TECHNICAL PROPOSAL

Configuration, materials, deviations, documentation

03

## DESIGN CONFIRMATION

Drawings, calculations, interfaces, approval

04

## MANUFACTURING

Material control, forming, welding, assembly

05

## INSPECTION & TEST

NDE, dimensional checks, pressure testing

06

## DOCUMENTATION

Reports, certificates, manuals, release dossier

07

## PACKING & DELIVERY

Protection, export packing, shipping coordination

# PROJECT DOCUMENTATION

Define the agreed scope before manufacturing

## Documentation checklist for quotation and acceptance

| | |
|---|---|
| **Design package** | Approved data sheet, general arrangement, nozzle / interface schedule and applicable design calculations. |
| **Material records** | Material certificates and traceability records; material verification where specified. |
| **Fabrication records** | Applicable welding procedure / qualification records, welder control and process records within the agreed scope. |
| **Inspection & tests** | Inspection plan, dimensional checks, specified NDE, pressure / leak testing and associated acceptance records. |
| **Package verification** | For skids: agreed functional checks, instrument / electrical records, interface checks and factory acceptance scope. |
| **Release & delivery** | Final dossier index, release records, packing details, preservation and handling / installation information as contracted. |

## SCOPE IS PROJECT-SPECIFIC

This is a document-planning checklist, not a promise that all records, third-party approvals or certifications are supplied for every product. Confirm requirements, responsible parties and exclusions in the quotation.

## CERTIFICATE VERIFICATION

Confirm the actual certificate holder, validity, authorized scope and project applicability. Third-party factory credentials and client projects are not TINSINS credentials or references.

# WHAT TO INCLUDE IN YOUR RFQ

Faster input, faster quotation

## Send the essentials.

Even preliminary data helps us recommend the right equipment configuration and identify any missing design inputs.

- Equipment type and quantity
- Process medium and concentration
- Operating and design pressure
- Operating and design temperature
- Required capacity or thermal duty
- Preferred material of construction
- Applicable code and certification
- Nozzle schedule and internals
- Inspection and documentation requirements
- Delivery destination and target date

# INDUSTRY TECHNICAL BENCHMARKS

External manufacturer examples | reference data only

## These values remain attributed to their original manufacturers.

| | |
|---|---|
| **Pfaudler columns [B1]**<br>**PDF p.40** | Published capability: diameter 6,000 mm x length 40,000 mm; thickness 100 mm; pressure up to 50 kg/cm2. These maxima are not a simultaneous envelope. |
| **Pfaudler reactors [B1]**<br>**PDF p.33** | Glass-lined BE series 630-80,000 L; CE series 1,600-40,000 L. Nominal series volume is distinct from working volume and from metal-vessel capability. |
| **Pfaudler exchangers [B1]**<br>**PDF p.41** | Published dimensional capability: diameter 5,000 mm x length 18,000 mm; pressure up to 155 kg/cm2. Original source units retained; pressure basis requires confirmation. |
| **Hantech tower [B2]**<br>**PDF p.11** | MPC reaction-tower project example: ID 5,000 mm x length 47,330 mm; wall (23+3) mm. This is one historical clad-vessel project, not a standard size range. |
| **Hantech separator [B2]**<br>**PDF p.10** | Ammonia-plant discharge-separator example: ID 1,800 mm x length 6,310 mm; wall 53 mm. Not a guaranteed separation-efficiency range. |
| **Other published series [B4-B6]** | R&D Therm: tube length 1,000-6,000 mm. BHS CF: active area 1-86.4 m2, up to 6 bar g and 80 deg C. ProMinent Compact: chemical metering 50-1,040 L/h. |

BENCHMARK LIMITATIONS

No benchmark establishes TINSINS production, certification, safe operating limits or guaranteed performance. Do not combine different products or independent maxima into a single design envelope. Special glass-lined, clad, low-temperature and high-pressure products need separate review.

# REFERENCE SOURCES

Brochure structure and technical scope | checked 17 September 2026

### B1 | Pfaudler - Global Capabilities

Equipment families, lifecycle / services and attributed technical examples. PDF pp.33, 40-41.

https://www.gmmpfaudler.com/uploads/files/pfaudler-global-capabilities-1e.pdf

### B2 | Hantech - Company brochure

Product / project presentation and attributed dimensional examples. PDF pp.10-11.

https://hantechltd.com/down/hantech_brochure_2021.pdf

### B3 | Shidao Heavy Industry - Catalog

Reference for capability, inspection and product / project-table organization. No Shidao project is presented as a TINSINS project.

https://pressure-tank.com/wp-content/uploads/2025/08/Shidao-Pressure-Vessel-Catalog.pdf

### B4 | R&D Therm - Shell-and-tube product page

Technical reference from website. Brochure download returned 404; it was not treated as inspected source material.

https://www.rdtherm.com/products/shell-and-tube-heat-exchanger

### B5 | BHS-Sonthofen - Candle filter CF

Standard candle-filter operating / sizing examples; excludes unrelated cartridge-filter capabilities.

https://www.bhs-sonthofen.de/process-technology/maschinen/filter/kerzenfilter

### B6 | ProMinent - Liquid metering systems

DULCODOS Compact dosing rate example, not generic skid throughput.

https://www.prominent.com/en/Products/Products/Metering-Systems/Metering-Systems-for-Liquids/pg
-metering-systems-fluid.html

Original TINSINS catalog is the source for company information, photographs and retained capability statements. Original company / certificate statements have not been independently certified through this editing process.

# LET'S BUILD THE RIGHT SOLUTION.

Share your process conditions and project requirements. Our team will review the duty and respond with a technical proposal.

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