

METERING
SYSTEMS FOR
SOLIDS



PRECISION+RELIABILITY

TOMAL – Metering Systems for Solids

Greater throughput, higher product quality

A comprehensive range of products for reliable and accurate discharge and metering of solids.

TOMAL offers everything you need for solids handling – from screw feeders to polymer make-up systems, from big bag dischargers to turn-key metering installations.

With over 30 years experience in solids metering for TOMAL equipment.

Our installations provide economical solutions, even for difficult cases like materials with high variations in volume weight and problems with arch building.

TOMAL components and systems for your production process

- TOMAL multiscrew feeders
- TOMAL polymer make-up systems for solid and liquid polymers
- TOMAL big bag dischargers
- TOMAL dust filters
- TOMAL arch breaking systems
- TOMAL shut-off valves
- TOMAL screw conveyors
- TOMAL mixing tanks
- TOMAL accessories
- TOMAL turn-key metering installations incl. silos

TOMAL Multiscrew Feeders

The heart in our deliveries

The feeder has unique benefits! Safe silo discharge and at the same time, extremely accurate metering without interruption. The TOMAL multiscrew feeder substitutes conventional equipment like vibrating bottoms, rotary valves as well as ordinary single screws. The difference in metering accuracy with our type of construction compared to a single screw is remarkable.

The volumetric metering accuracy with a single screw is often worse than 5%, but with the TOMAL multiscrew you will get accuracies in the range of 0,5 - 1%!



TOMAL Type 224 EC

TOMAL Multiscrew Feeders

Reduce costs by precision and security

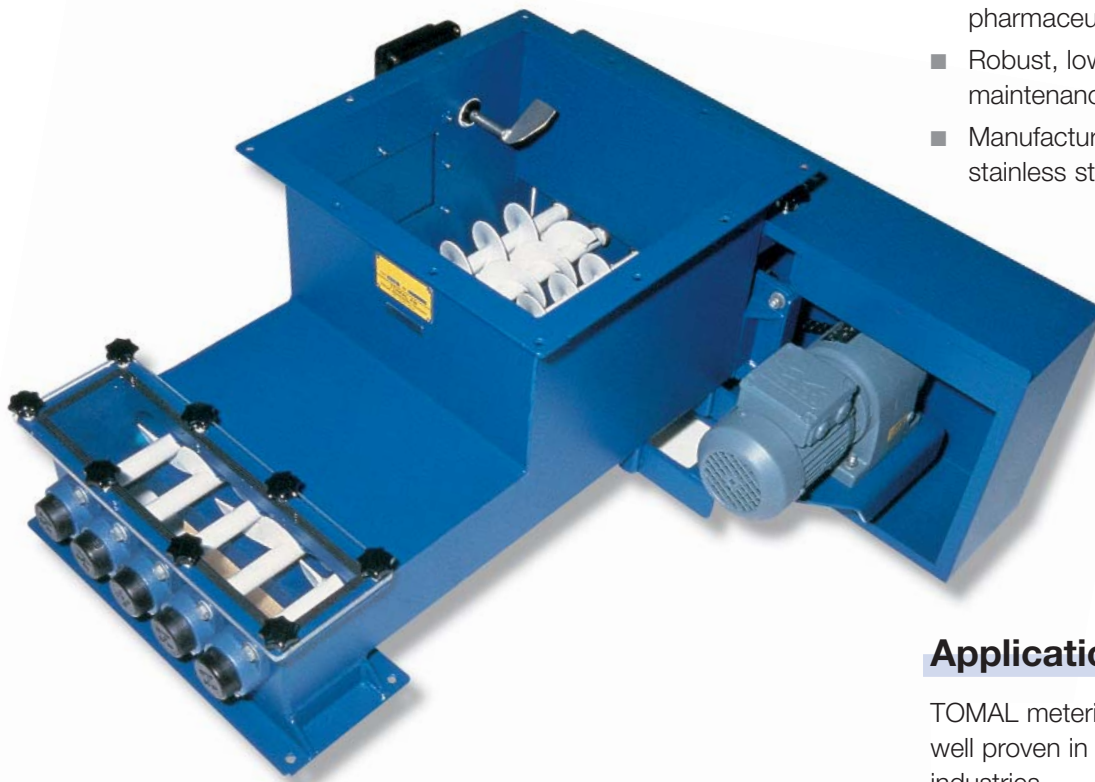
TOMAL multiscrew feeders reduce production costs by providing highly reproducible discharge and precise metering. Costly overdosing is eliminated, and the optimum formula is produced every time.

Their carefully designed construction makes the feeders particularly reliable and robust, resulting in low costs for maintenance and downtime.

TOMAL feeders are available in a wide range of types and sizes, for nearly every application.

Advantages at a glance

- Safe silo discharge
- High metering accuracy
- Linear discharge curve
- Forced discharge, self-cleaning
- Continuous or batch processes
- Volumetric or gravimetric metering
- Wide variety of models for almost all applications
- Unique constructions adapted for the food and pharmaceutical industry
- Robust, low wear and low maintenance construction
- Manufactured in mild or stainless steel



TOMAL Type 405, a well tested multiscrew feeder, with 5 feeder screws and empty level / arch indicator

Applications

TOMAL metering equipment is well proven in a wide variety of industries.

- Pulp and paper
- Chemicals
- Food
- Glass and porcelain
- Waste water treatment
- Smoke gas treatment
- Building material
- Adjusting of pH in rivers

TOMAL Polymer Make-up Systems

For dissolving and dosing solid and liquid polymers

Versatile make-up system for batch production of solutions from solid and/or liquid polymers.



Please ask for our special polymer leaflets!

TOMAL PolyRex polymer make-up unit

Compact make-up units for the continuous production of polymer solutions from liquid polymers.



POLYMORE liquid polymer make-up unit

Big Bag Discharging System

TOMAL designs and manufactures a wide range of big bag discharging systems.

The TOMAL big bag discharger takes care of your handling of solids in big bags. Our big bag dischargers are adapted for free flowing as well as for arch building materials. Different versions for disposable or reuseable bags.

Other TOMAL equipment such as feeders, screw conveyors and mixing tanks can be easily-integrated. Many years of experience enables us to build optimal customer adapted discharging and metering systems for many different applications.



Injection of activated carbon in a flue gas channel for reduction of dioxines and mercury at Boliden Mineral copper melter at Rönnskärnsverken in northern Sweden. Turn key plant consisting of big-bag emptier, feeder, pneumatic conveying system, injection lance and controls.

TOMAL turn-key metering installations

Complete solutions from a single source

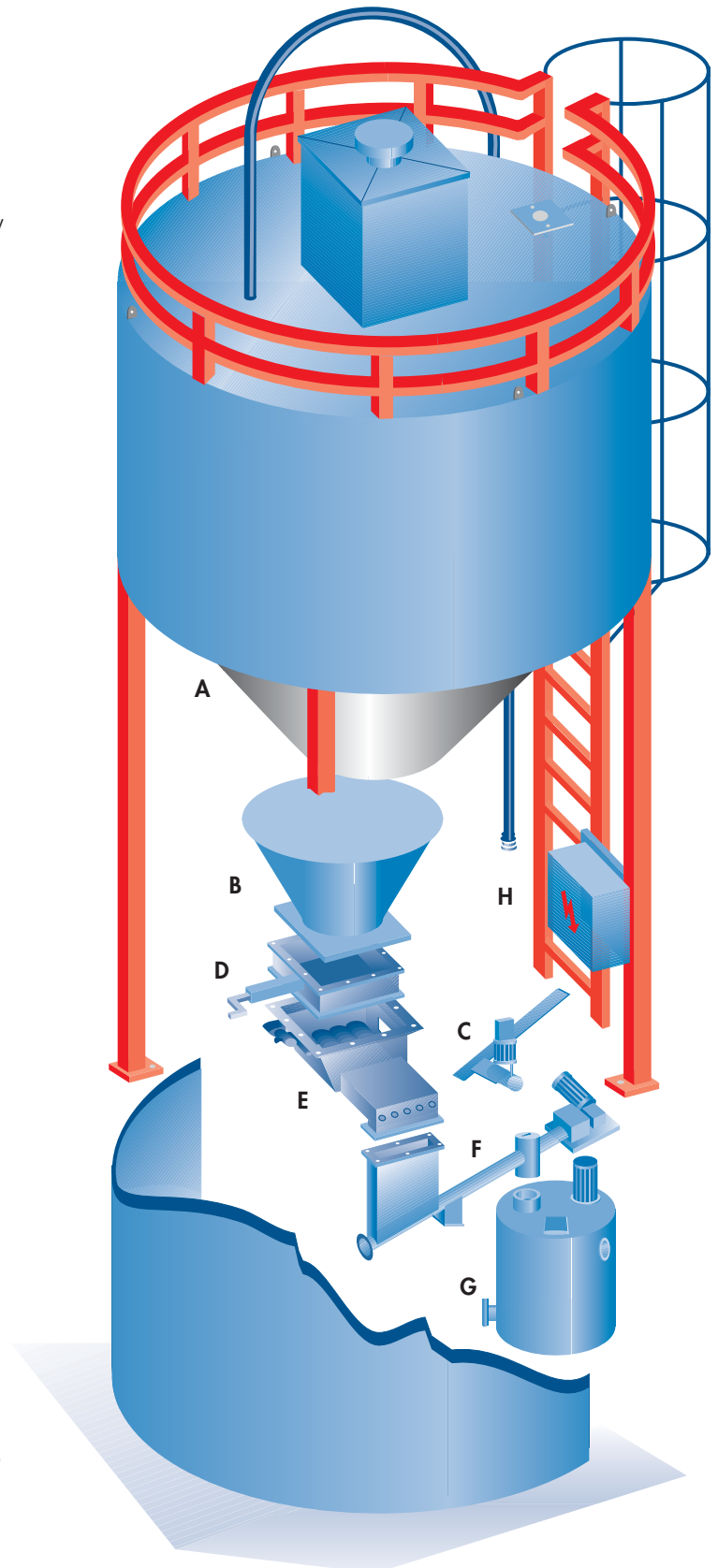
Use TOMAL's know-how and experience to build your metering station

We deliver complete installations, including silos, arch breaker, shut-off valves, feeders, screw conveyors, mixing vessels and controllers for nearly all industrial purposes.



Installation for lime metering in a waste water treatment plant

- A** Standard silo shape is round.
- B** The silo cone is adapted to the material being handled.
- C** Different types of arch breakers can be used.
- D** Shut-off valve, manually or pneumatically actuated.
- E** The TOMAL feeder ensures efficient silo emptying.
- F** If necessary a screw conveyor transports the material further.
- G** Mixing vessel complete with water metering unit and level control.
- H** Electrical control panel complete with all internal connections for turn-key installations.



TOMAL Metering System for Crystal Glass Production

Production volume 8500 kg/h



This fully automated metering installation produces the premix for crystal glass manufacture. The TOMAL system consists of 20 silos, multiscrew feeders and controllers. The quality of the finished product relies on the high accuracy of the mix.

Twenty different raw materials in granular and powder form are used, including arsenic, salt, zinc oxide, lead oxide, sodium sulphate and sand.

Each silo is fitted with a multi-screw feeder which discharges the material into a weighing hopper. The hoppers are fitted with load cells and, where necessary, a discharge aid. When the required weight of each material has been fed into the hopper the feeder switches off automatically and the controller activates the next one.

Advantages

- Higher product quality, achieved by highly accurate formula control
- Economical production with a high level of automation
- Reliable metering of many different raw materials

TOMAL Metering and Make-up System for Starch Solution

This installation comprises a starch silo with 145 m³ capacity, a multi-screw feeder, a screw conveyor and a mixing tank.

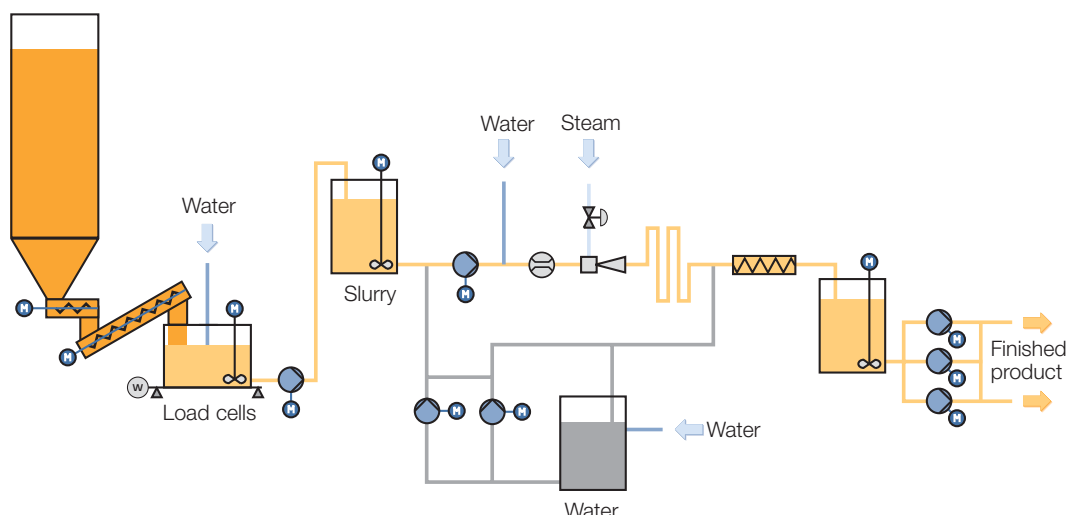
TOMAL also supplied the starch boiler, starch solution vessel and

storage tank as well as all the valves, flowmeters and pumps. To ensure high accuracy, the mixing tank stands on load cells which are connected to the control unit for water and starch metering.

Advantages

- Very high metering accuracy
- Economical production with a high level of automation
- Turn-key installation from one supplier

Production volume 700 kg/h



Material Preparation for Sanitary Porcelain Production

This installation comprises eight silos with multiscrew feeders, shut-off valves, arch breakers, screwconveyors and weighing

hoppers for metering and weighing sand and felspar. It runs with high accuracy with a capacity of 4.3 tons per hour.



Material Preparation for Glaze Production



Ten different chemicals are used. An ABB robot controls the discharge of the bags.

The bags with raw material are transported to the bag opener and the materials are discharged into the weighing hopper which is fitted with a multiscrew feeder. The material is automatically distributed to the individual mixing tanks.

Very easy to handle, the operator has only to select the required recipe in the computer and ensure sufficient bags are available. When this is done, the plant is available for full automatic operation.

Additional Interesting References



- 1 *Metering plant for 3 different chemicals in a process for fire protection of wood products*
- 2 *Feeding and weighing of 4 different chemicals in a process for manufacturing of insulation of pipes*
- 3 *Metering of wood powder as a biological fuel. Two units with TOMAL Type 627 feeders*
- 4 *Lime silo at a waste water plant*
- 5 *Complete metering and make-up installation for salt iodizer*

