

Installation example:

WOLF Augsburg

The secret of Wolf's bakery in Augsburg is top-most quality and freshness.

In the technically oriented large bakery, machines are mainly used if a quality enhancement or quality assurance can be achieved thereby. With this in mind, a new building for the storage of raw materials according to special requirements was planned and constructed in 2006 as well.

Its 24 branches are freshly supplied continuously in 2-hour cycles. A branch with a sophisticated cafe is attached to the production plant.

Furthermore, the Wolf family is also dedicated to social needs and is active with the Wolf's bakery foundation in support of the 'Bunte Kreis' for children.



Description of facility:

The objectives of automation:

- 1) At 3 target points: The required raw materials for bread and biscuit lines and confectionery should be automatically called up on the recipe computer and precisely metered. Besides the automatically metered raw materials, other ingredients such as olives, raisins, nuts, etc., should be controlled and recorded by an online hand-add ingredient scale.
- 2) The delivery, storage, conveyance and processing of raw materials should be hygienic and extensively dust-free. The silo filling should be equipped with overfill protection and presieve.
- 3) The delivered raw materials should be manageable by a silo weighing machine and raw material access accounting.
- 4) The conventional mill for coarse flour should be equipped with big bag filling.
- 5) The hb special mill for extra fine whole-grain flour should likewise be equipped with big bag filling.
- 6) The dough temperature controls should ensure the dough quality.
- 7) A traceability of raw materials and recipes with evaluations and statistics should also be available at the office.

The components of automation:

Storage 1:

The large components consist of 7 indoor round silos with fluidised-bed triple discharge, a silo thereof with double discharge. The silos are finished in aluminium and have a discharge capacity of 4 to/h. The total capacity of the silos amounts to 85 tonnes of flour. The silo filters comprise attachment filters with separate exhaust pipeline outside. The silos are situated in the raw materials storage space according to ATEX guidelines. The three separate flour feeder lines are conveyed for acceptance to the three target points by separate blowers from the machine room. The silo filling takes place over a tank lorry control cabinet

fixed on the outer wall of the building and the silo filling pipelines that are individually laid with sampler and overfill protection as well as presieve facility. The displays of the 7 silo weighing machines are situated in the tank lorry control cabinet.

Flour supply:

The flour supply system consists of three feeder lines to three target points for acceptance. The pipelines are made of stainless steel. According to the silo, two different types of sieve machines are used respectively (eddy-current and pipe filter machines).

Storage – pulverisation:

Shred mixtures of various types are produced by two mills with big bag filling.

Liquid meeting:

Three water mixing and metering equipments for hot, cold and icy water are assigned at the target points – bread, biscuit and confectionery.

Weighing:

The weighing of flour is done in three hopper weighing machines with jet filter. The weighing machines are pneumatically filled. Each holder has a capacity of 150 kg. The weighing machines are not in the bakery, but in the first floor with downpipe for the dust suction hood over the respective kneading stations. An eddy-current sieve is used in two hopper weighing machines for additional bulking and enriching with oxygen of the flour. A floor check scale is situated under the kneaders. Every target point has an online hand-add ingredient scale controlled by the recipe computer for special ingredients like raisins, spices, nuts, fat, ice, etc. Small ingredient containers are integrated in the hand-add ingredient scale table.

Dust removal:

Two dust-adjustable central exhaust systems with jet filters suck the dust from the 3 suction hoods over the kneaders at the target points.

Controls:

The load control of the facility is performed decentrally in several switch cabinets. The Winback software is used for this purpose. Three 15" touch-screen command units have links to the office and remote maintenance.



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indoor silos, aluminium, round,
three-way delivering



silo weighing, vibration discharge, rotary valve



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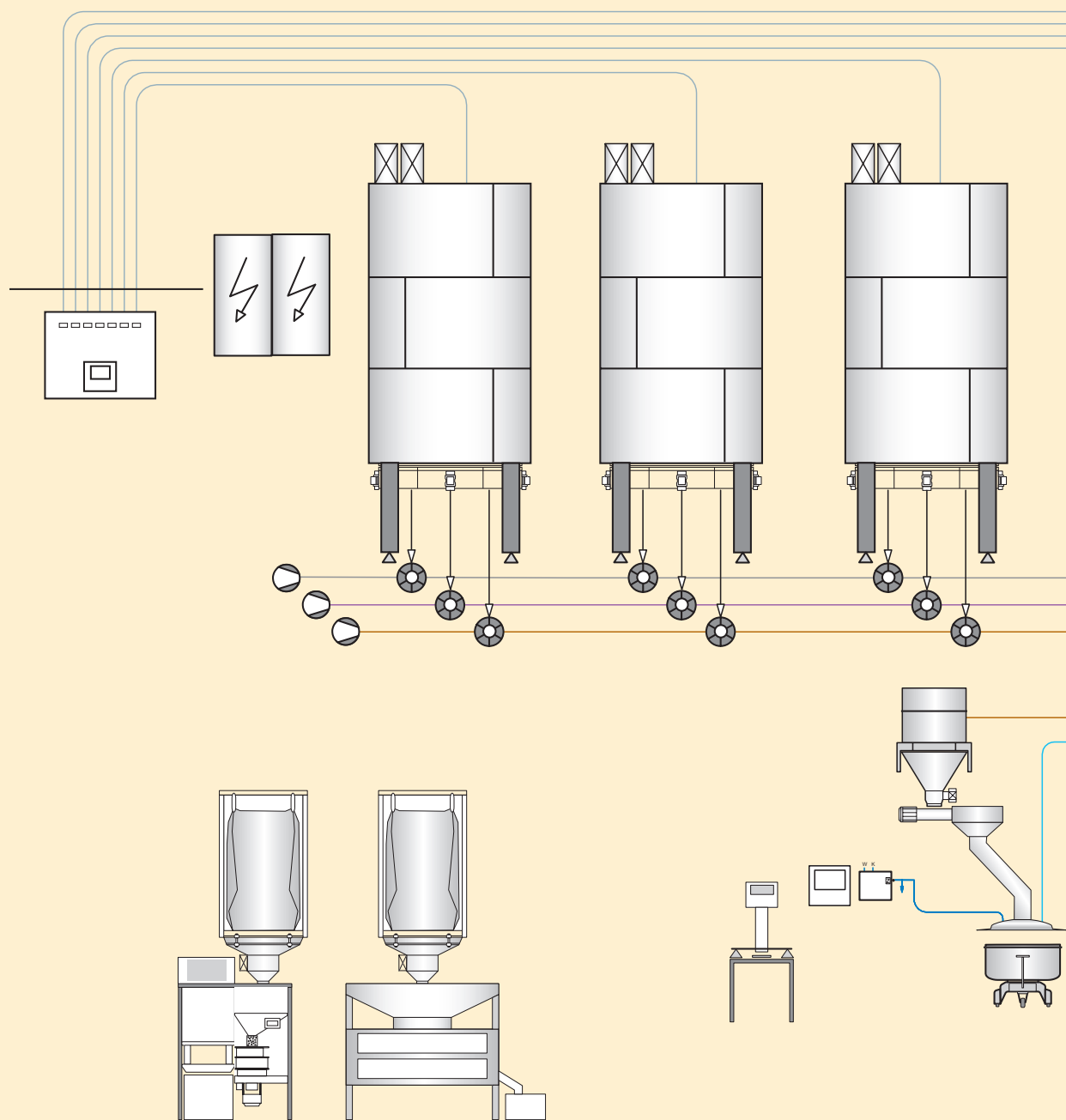
WOLF Augsburg

7 indoor silos à 12 to with jetfilter
and silo roof landing



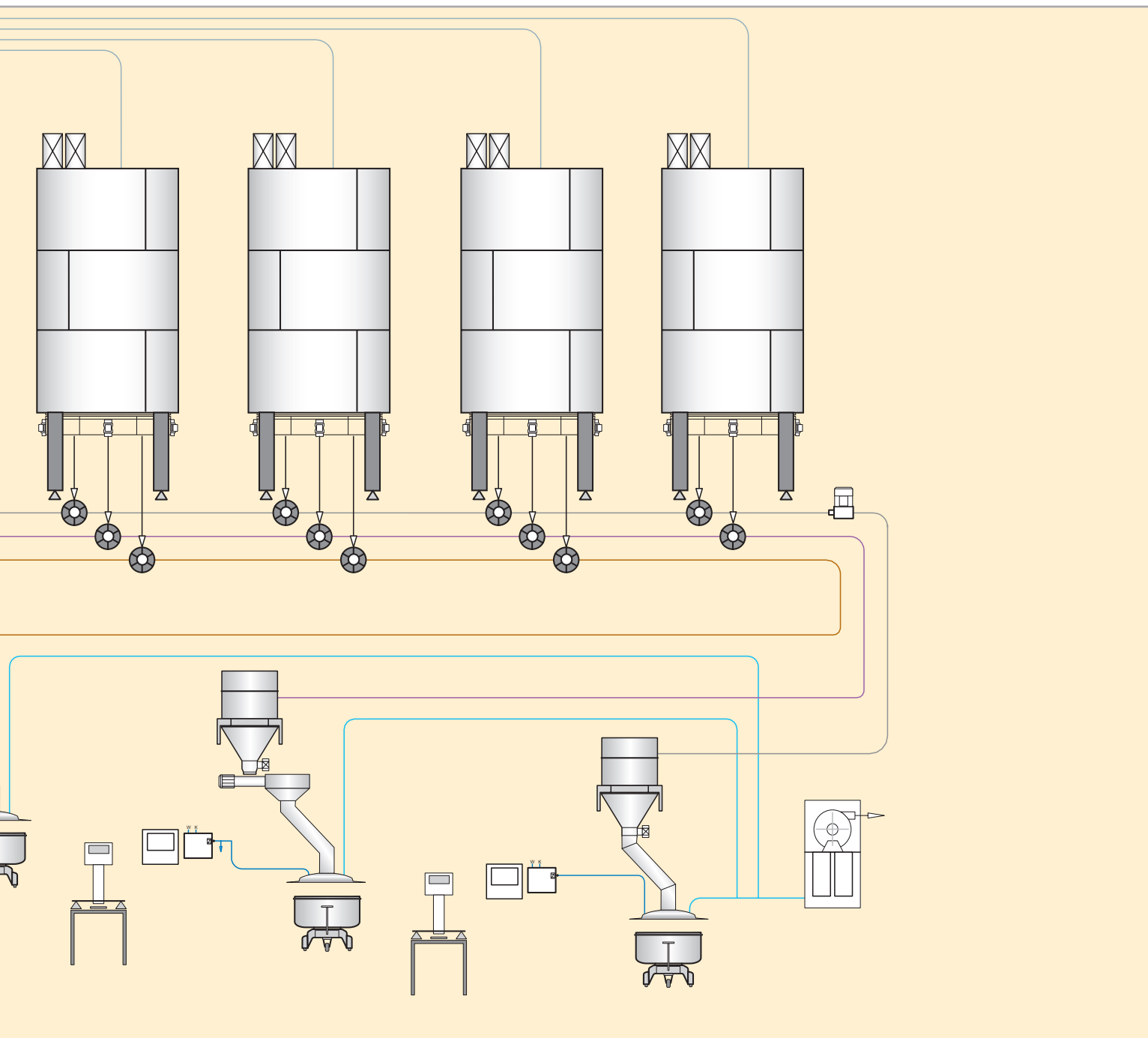
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Overview of installations:

Item	Description	Units
A	Flour silo, aluminium, round, indoor, triple discharge	6
B	Flour silo, aluminium, round, indoor, double discharge	1
C	Silo filling with individual pipeline, presieve, overfill protection	7
D	Pneumatic flour feeder line with post sieving	3
E	Mill 1 filling by big bag	1
F	Hb-Mill 2 fillings by big bag	1
G	Central filter station f suction hoods 3 suction points	2



Item	Description	Units
H	Flour weighing system	3
I	Floor scale for liquid control	2
J	Kneader exhaust	3
K	Water metering system	3
L	Hand-add ingredient scale	3
M	Recipe computer	3
N	Switch cabinet	4

