

Installation example:

KNAPP

The traditional business, Knapp's bakery, has been relocated from central Gais in South Tyrol to a new building. There has been established a modern bakery. Mr. Knapp combines the latest technology with traditional top-level bakery products.

10 employees work in a 600 m² production area, the same number as in the earlier business, but with 50% more performance. A total of 22 employees are engaged. Three other branches are also operated.

Franz Knapp declares: "The turnover of bread has been continuously rising ever since we started work with the fully-automatic 3-stage natural sourdough facility."



ingredient hooper, ingredient weighing, ingredient weighing table with flour scales



Description of facility:

The objectives of automation:

- 1) As many raw materials as possible should be called up at one target point automatically and over the recipe computer. The precise weighing and metering as well as raw-material management were the main objectives. Other raw materials such as olives, raisins, spices, nuts, etc., should be controlled and recorded by online linked hand-added ingredient scales. These special small components should be stored on the weighing tables with ingredient scales and hygienic ingredient containers.
- 2) The delivery, storage, conveyance and processing of raw materials should be hygienic and extensively dust-free. Four flour silos and 4 medium component bag dump silos should enable an automatic feeding sequence of the flour and main ingredients.
- 3) The 3-stage rye sourdough should be produced fully automatically according to own recipe.
- 4) The yeast fermentation container as well as feeding system should be computerised and controlled for quality.
- 5) The dough temperature controls should ensure the dough quality.
- 6) 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 4 rectangular indoor silos with aluminium fluidised bed discharge and a discharge capacity of 1 t/h. The total silo capacity amounts to 23 tonnes of flour. The silo filter consists of cover filters. The silos are situated in the raw materials storage space according to ATEX guidelines. The silo bulking and flour feeding is pneumatically carried out by blowers from the machine room. The silo filling takes place over a tank lorry control cabinet attached to the outer wall of the building and individually laid silo filling pipelines.

Storage 2:

The medium components consist of 4 bag dumps for special flour. A platform facilitates pallet storage and ergonomic filling. The conveyance of materials to the target point for acceptance takes place pneumatically by blowers from the machine room.

Storage 3:

The small components are weighed manually and over computer by means of linked ingredient scale.

The small ingredients like salt, bakery improvers and spices can be added unerringly to the recipe from the flour scales below the table and ingredient containers on the table.

Flour supply:

The flour feeding system consists of a feeder line to the bakery with branching to the fully automatic sourdough facility and to its automatic flour filling. For hygienic purposes, the flour feeder lines are pneumatically driven. The pipelines are made of aluminium. A pipe filter machine is used behind the silos.

Storage – production:

The production and storage system for predough consists of 1 Europro sourdough machine for automatic 3-stage rye sourdough with a capacity of 500 litres. Moreover, there is a cooled yeast fermentation container for yeast bags with 300-litre capacity. The machines are equipped with automatic cleaning programme. The yeast pipeline is cleaned by an automatic cleaning system including the yeast fermentation container.

Liquid metering:

One water mixing and metering equipment for hot, cold and icy water is assigned at the target point – bakery. Another equipment facilitates the automatic water feeding of the sourdough machine as well as the yeast equipment and their automatic cleaning with hot water.

The rye sourdough and the yeast are metered to the kneader.

Weighing:

The weighing of flour and medium components takes place in a container weighing machine with standard filter. The weighing machine is pneumatically filled. It has a capacity of 100 kg. The dust suction hood is situated beneath the container weighing machine. The moveable basins are wheeled under the respective dust suction hood.

Dust removal:

One dust-adjustable central exhaust unit sucks the dust from the suction hood.

Controls:

The load control of the facility is performed decentrally in 4 switch cabinets. The Backcontrol software is used. Two 15" touch-screen command units have links to the office, remote messaging and remote maintenance.



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full automatically EUROPA sourdough plant, yeast dissolver



4 indoor silos, aluminium, rectangular, 4 dumping stations as daily silos

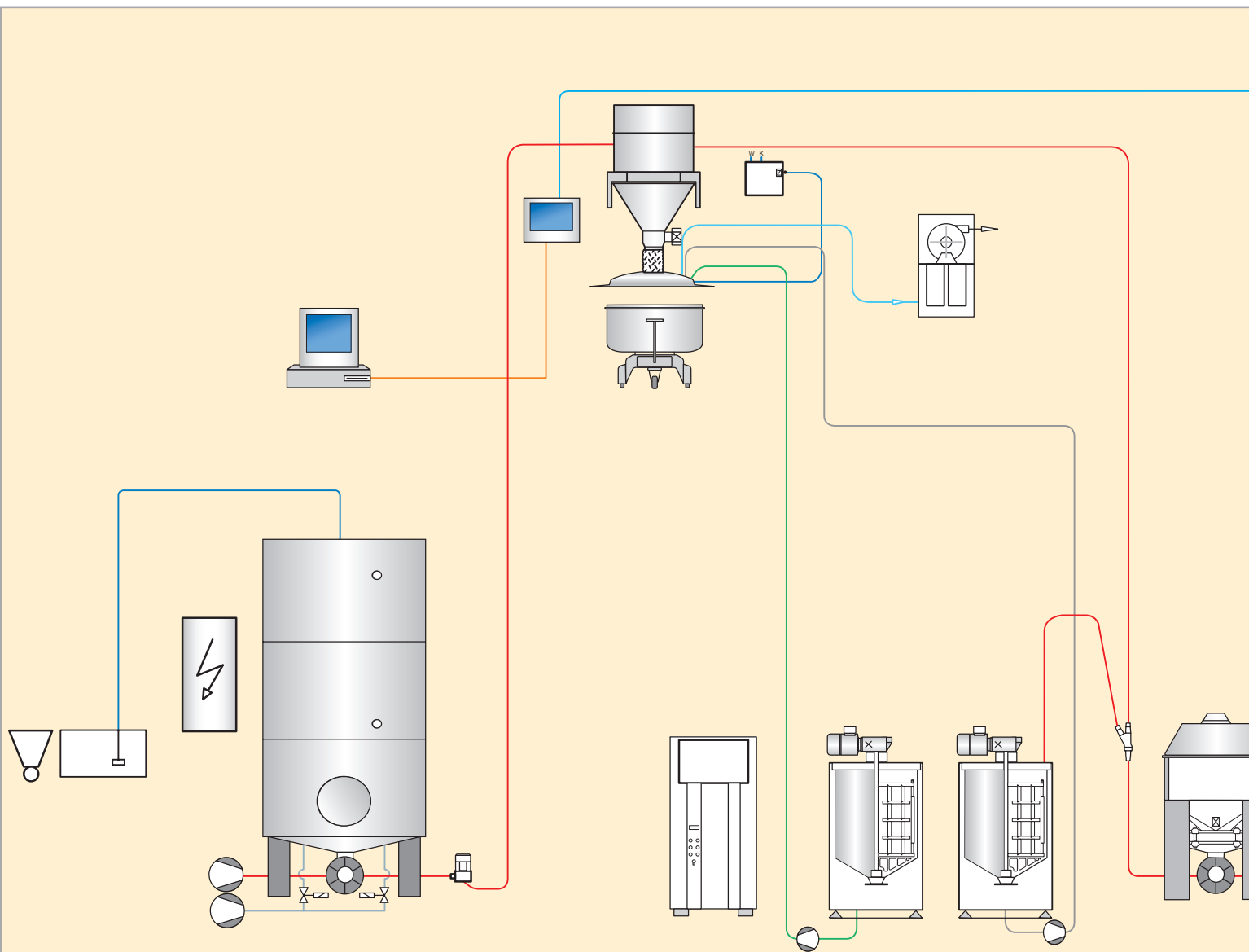


The way to success!



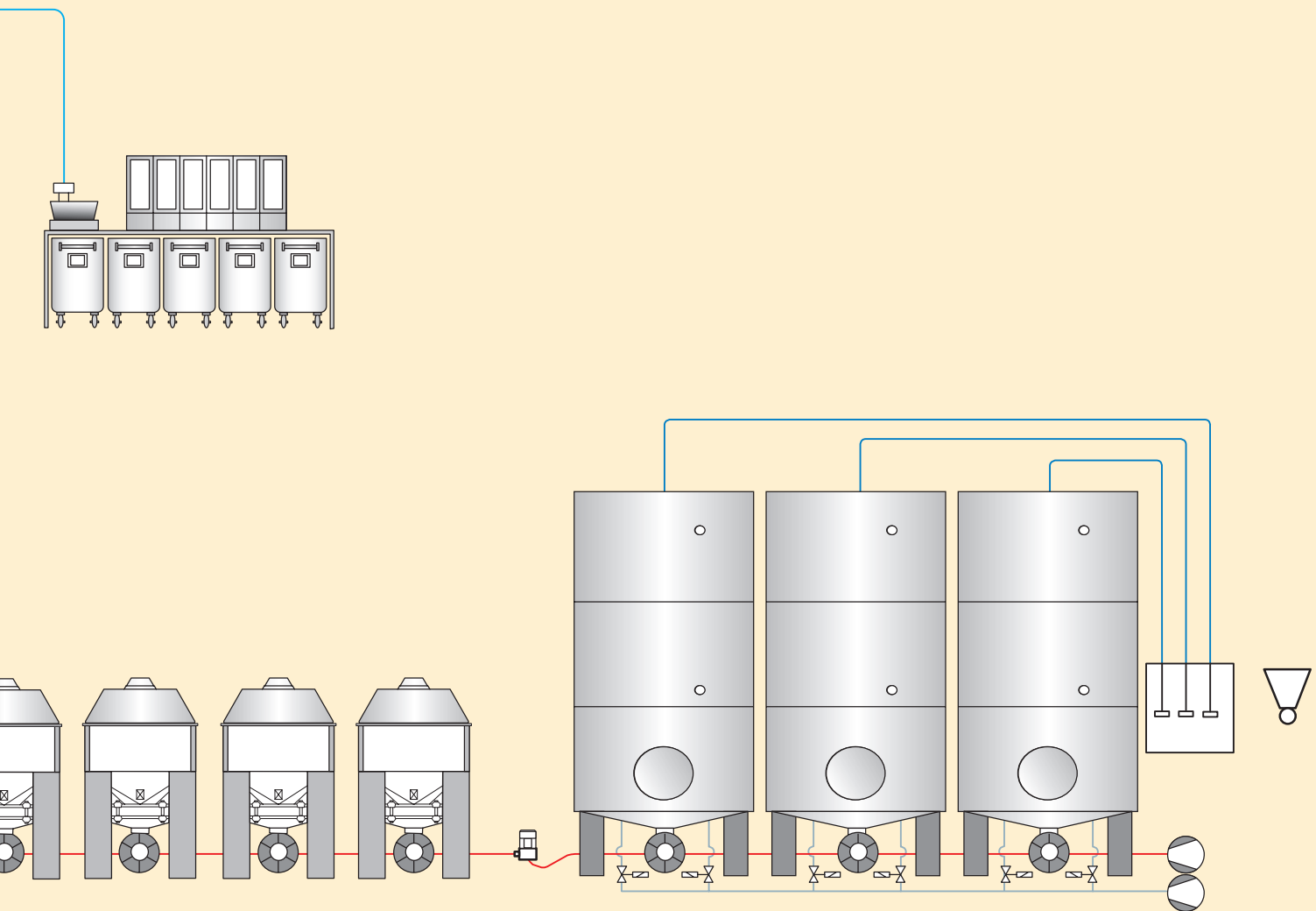
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Overview of installations:

Item	Description	Units
A	Flour silo, aluminium, rectangular, indoor	4
B	Silo filling with individual pipeline	4
C	Pneum. bulking f. fluidised silo bed	1
D	Pneumatic flour feeder line 1	2
E	Pneumatic flour feeder line 2	1
F	Medium components container as bag dump	4
G	Pneumatic sourdough feeder line	1
H	Filter station f hopper weighing machines, 1 suction point	1
I	Flour and medium components weighing	1



Item	Description	Units
J	Sourdough facility for rye sour	1
K	Liquid feeder line for rye sour	1
L	Yeast facility	1
M	Liquid feeder line for yeast solution	1
N	Water metering with water cooler	2
O	Hand-add ingredient scale	1
P	Ingredient weighing table with ingredient containers and ingredient scale	1
Q	Recipe computer with links to office and remote maintenance	2
R	Switch cabinet	4

