

Installation example:

BAUER

In the renowned winter skiing region of Muehlbach am Hochkoenig (Land Salzburg), the Bauer family extended the existing bakery in central location by an imposing new building. The business has at present a useable area of 2.250 m². The modern family-run business caters to the surrounding hotels and inns and also operates 8 branches. The quality of bread and pastries of the business is known to be far above the usual fare. The Bauer bakery employs about 48 staff. The traditional bakery is attached to a beautifully appointed café with an exclusive terrace extension.



Description of facility:

The objectives of automation:

1) At 2 target points: Bakery and confectionery should call up as many raw materials as possible automatically and over the recipe computer. The precise weighing and metering as well as raw-material management was one of the main objectives. Other raw materials such as olives, raisins, spices, nuts, etc., should be controlled and recorded

by online hand-add ingredient scales. The special small components should be stored in weighing tables with ingredient scales and hygienic ingredient containers.

2) The delivered raw materials should be manageable by a raw material access accounting system.

3) The delivery, storage, conveyance and processing of raw materials should be hygienic and extensively dust-free.

- 4) The 3-stage rye sourdough as well as the wheat predough should be produced fully automatically according to own recipe.
- 5) The aromatic sourdough production as well as yeast fermentation container should be computerised and controlled for quality.
- 6) As a special feature, natural brine from the Salzburg mines should be included in the automatic facility with container metering.
- 7) Oil should be stocked in a storage container and automatically metered to the target points.
- 8) The dough temperature controls should ensure the dough quality.
- 9) 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 discharge and a discharge capacity of 1.5 to/h. The total silo capacity amounts to 30 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 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 8 raw materials integrated in the compo. A platform facilitates pallet storage and ergonomic filling. The conveyance of flour to the target points for acceptance takes place pneumatically by blowers from the machine room.

Storage 3:

The small components consist of 1 ingredient machine Compo 3000 with 16 ingredient containers, each with 60-litre capacity for salt, bakery improvers, grains, spices, sugar, etc. The Compo is made of stainless steel. The weighing and discharge capacity amounts to 8 loads per hour. The Compo is situated in the raw material storage space according to ATEX. The small components feeding takes place pneumatically by blowers from the machine room. The filling of the Compo takes place by means of direct dumping from bags into the Compo.

Flour-ingredient feeding:

The flour feeding system consists of a feeder line to the bakery with branching to the sourdough and predough machines

and to their automatic flour filling. Another separate flour feeder line goes to the confectionery acceptance target points. For hygienic purposes, all flour and ingredient lines are pneumatically driven. The pipelines are made of stainless steel. 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 1000 litres. One refrigerated aroma sour fermentation container of 300 litres capacity. In addition a yeast dissolver for yeast bags with 300-litre capacity. The machines are equipped with automatic cleaning programmes. The yeast pipeline is finished as an insulated ring line and is cleaned by an automatic cleaning system including the yeast fermentation container. The oil storage and metering facility as well as the brine container metering are integrated likewise in the same storage room for liquid components.

Liquid metering:

Two water mixing and metering equipments for hot, cold and icy water are assigned at the target points – bread and confectionery. Another equipment facilitates the automatic water feeding of the 3 predough machines as well as the yeast equipment and their automatic cleaning with hot water.

The rye sourdough, aromatic sourdough and yeast, as well as oil and brine, are metered to the bakery.

Weighing:

The weighing of flour, medium and small components takes place in a container weighing machine with jet filter. The weighing machines are pneumatically filled. Each has a capacity of 150 kg. One weighing machine is situated in the bakery, the second in the confectionery on the first floor, with running pipeline to 2 kneaders with suction hoods over the respective kneading station. 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:

One dust-adjustable central exhaust system suck the dust from the 2 suction hoods over the kneaders at the target points. Likewise, the ingredient machine is connected to the dust exhaust.

Also the workbench will be sucked off with a special suction tube.

Controls:

The load control of the facility is performed decentrally over 6 switch cabinets. The Backcontrol software is used. Three 15" touch-screen command units have links to the office, remote messaging and remote maintenance.



Installation example:

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4-cell flour silo plant



Installation example:

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industry-BWI-scale for flour and ingredients



Installation example:

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ingredient dispenser Compo 3000 – rye sourdough-,
aroma sour-, yeast preparation, Backcontrol



oil dosing, bio brine container

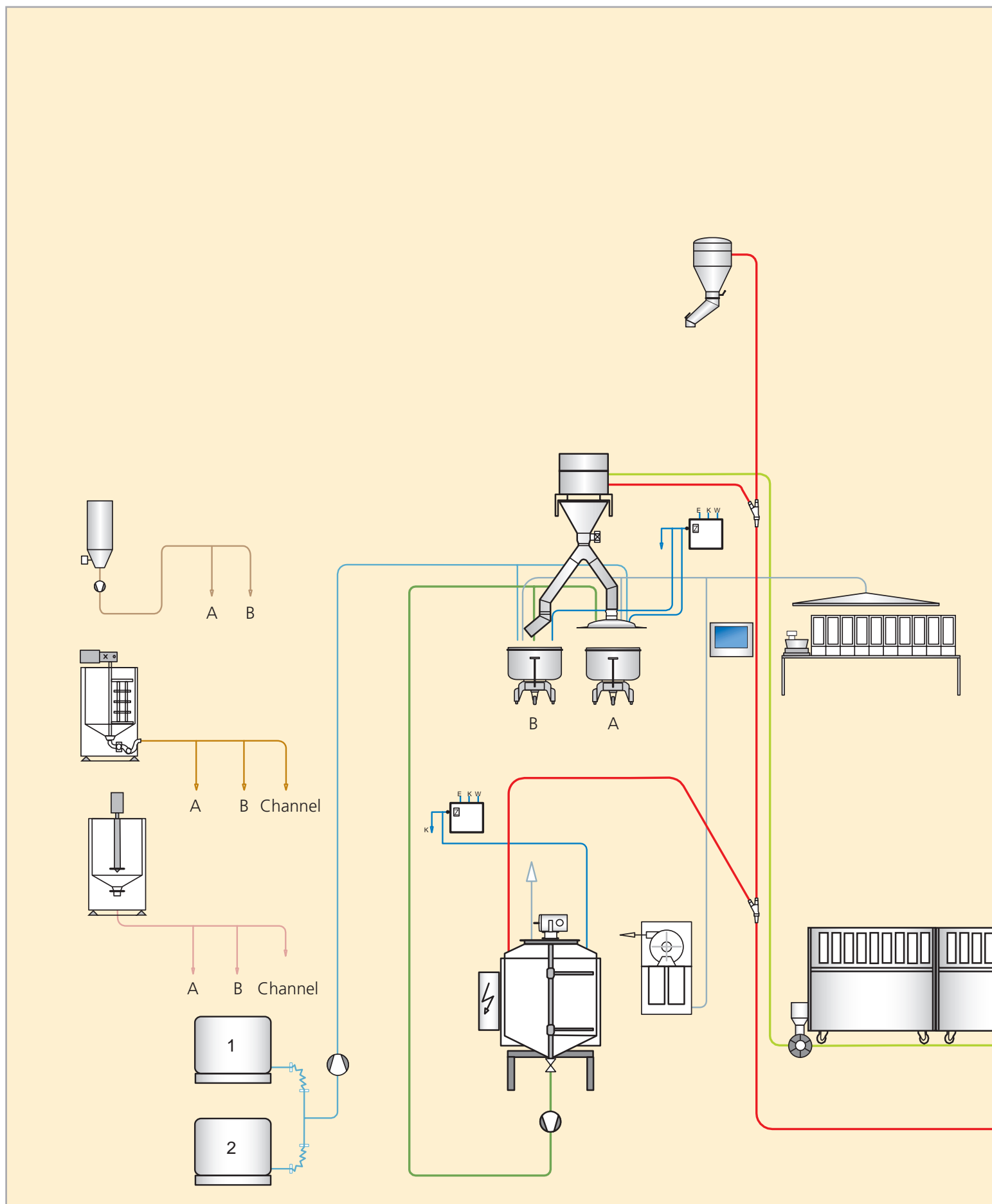


The way to success!



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Overview of installations:

Item	Description	Unite
A	Flour silo, aluminium, rectangular, indoor	4
B	Silo filling with individually laid pipeline	4
C	Pneum. bulking f. fluidised silo bed	1
D	Pneumatic flour feeder line 1, 1A	2
E	Pneumatic flour feeder line 2	1
F	Compo 3000 with direct filling	1
G	Pneumatic Compo feeder line	1
H	Central filter station f Compo, 3 suction points	1
I	Weighing system for flour + Compo	1
J	Weighing system for flour in confectionery	1
K	Kneader exhaust in bakery	2
L	Kneader exhaust workbench	1
M	Sourdough facility for rye sour	1
N	Liquid feeder line for rye sour	1
O	Aroma sour facility	1
P	Liquid feeder line for aroma sour	1
Q	Brine facility	1
R	Liquid feeder line for brine facility	1
S	Yeast facility	1
T	Liquid feeder line for yeast fermentation container	1
U	Oil storage container	1
V	Liquid feeder line for oil metering	1
W	Water metering	3
X	Hand-add ingredient scale	2
Y	Recipe computer	3
Z	Switch cabinet	6

