

# Installation example:

## HUDSON BREAD New York

Right in the centre of New York Metropolitan, you find the Hudson Bread bakery. "Perfect dough makes perfect bread!" Based on this maxim, the new bakery has been erected in 2006 with a modern raw materials processing facility as a goal. For attaining this goal selecting the equipment (ingredients machine, liquid egg tank, wheat predough machine, and aroma sour fermentation container) was the crucial factor.

Mr. Kolodziej (Managing Director of Hudson Bread) noted: "With the collaboration of HB-Technik, we were able to realize all objectives for perfect dough production."

The usable area of the new installation is approximately 2,500 m<sup>2</sup>. Currently 80 people are employed at the bakery.



## 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-add ingredient scales. These special small components should be stored on the weighing tables with ingredient scales and hygienic ingredient containers.
- 2) Flour silos are available. These should be incorporated in the new automation concept.
- 3) Four containers as surface silos with bag dump for medium components with dust exhaust should automatically convey materials to the target point.
- 4) An ingredient machine should be used for small components with bag suction filling and automatic metering to the target point.
- 5) The delivered raw materials should be manageable by a raw material access accounting system.
- 6) The delivery, storage, conveyance and processing of raw materials should be hygienic and extensively dust-free.
- 7) The 3-stage rye sourdough as well as the wheat predough should be produced fully automatically according to own recipe.
- 8) The aromatic sourdough production as well as yeast fermentation container should be computerised and controlled for quality.
- 9) The liquid storage and metering, as well as milk storage and metering should be carried out over the computer and automatically metered.
- 10) Oil should be stocked in a storage container and automatically metered to the target points.
- 11) A crushed ice machine should fill an ice silo. Crushed ice should be automatically metered and conveyed to the suction hood.
- 12) The dough temperature controls should ensure the dough quality.
- 13) A traceability of raw materials and recipes with evaluations and statistics should also be available at the office.
- 14) An own dust exhaust system should keep the two workbenches free of dust through pivoting exhaust hopper.

## The components of automation:

### Storage 1:

The large components consist of 2 available indoor silos. An automatic filling of the rye sourdough and wheat predough machine was newly installed.

### Storage 2:

The medium components consist of 4 surface silos as bag filling stations. 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 800 with 10 ingredient containers. Capacity: 6 x 300 litres, 3 x 200 litres for salt, bakery improvers, grains, spices, sugar, etc. The Compo is made of stainless steel. The weighing and discharge capacity amounts to 12 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 suction bag dumps 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. 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 1500 litres. One wheat predough machine has a capacity of 1.500 litres. One chilled aroma sour fermentation container of 500 litres capacity. In addition a yeast fermentation container for yeast bags with 500-litre capacity. One chilled liquid egg tank of 300 litres capacity. A chilled milk storage tank of 300 litres capacity is also installed. The machines are equipped with automatic cleaning programmes. The pipelines for yeast, milk and egg is finished as insulated ring line and are cleaned by an automatic cleaning system. The oil storage and metering

facility are likewise integrated in the same storage room for liquid components. A crushed ice facility produces and conveys crushed ice automatically to the target point and is integrated like all other raw materials in the recipe process flow.

### Liquid metering:

One water mixing and metering equipment for hot, cold and icy water are assigned at the target point – bakery. Two other equipments facilitate the automatic water feeding of the 2 predough machines as well as the yeast, milk and egg equipments and their automatic cleaning with hot water.

The liquid metering of rye, wheat and aromatic sourdoughs, milk and eggs, as well as oil are managed in the kneading suction hood. These pipelines for liquid egg, yeast and milk are finished as chilled and/or insulated ring line with channel interface.

### Weighing:

The weighing of flour, medium and small components takes place in two container weighing machines with jet filters. The weighing machines are pneumatically filled. Each has capacities of 100 and 150 kg. The two weighing machines are situated above the bakery with running pipelines to 1 dust suction hood over the kneading station. The 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 suction hood over the kneaders at the target points. Likewise the predough machines, as well as the medium components container and the ingredient machine are connected to the dust exhaust. Another dust exhaust is installed for the worktop by means of flexible exhaust hoppers.

### Controls:

The load control of the facility is performed decentrally in 12 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:

## HUDSON BREAD

dust exhaustion station,  
4 dumping stations



dust exhaustion hood with liquid dosing



# Installation example:

## HUDSON BREAD

sour dough plant, yeast, milk, oil

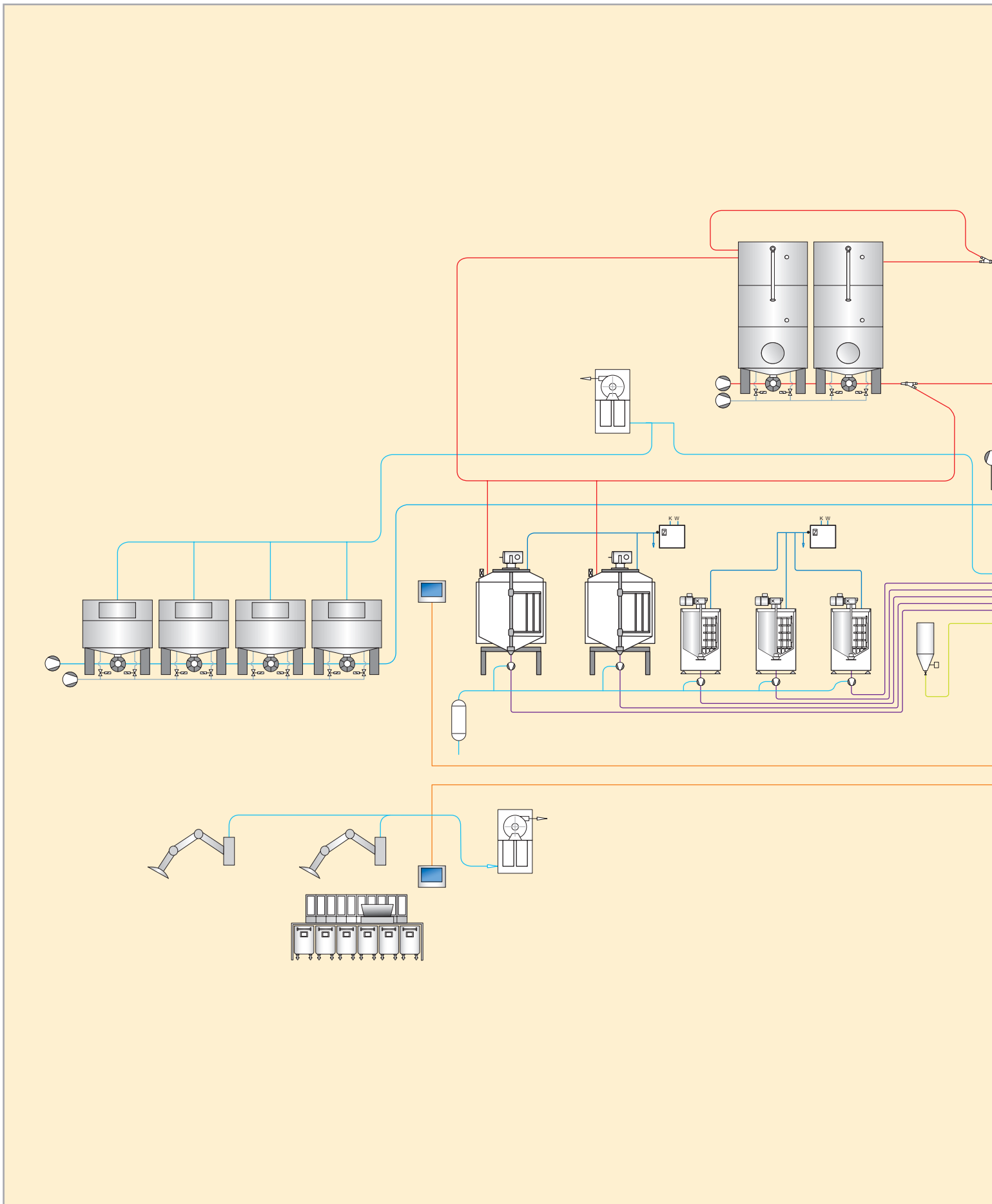


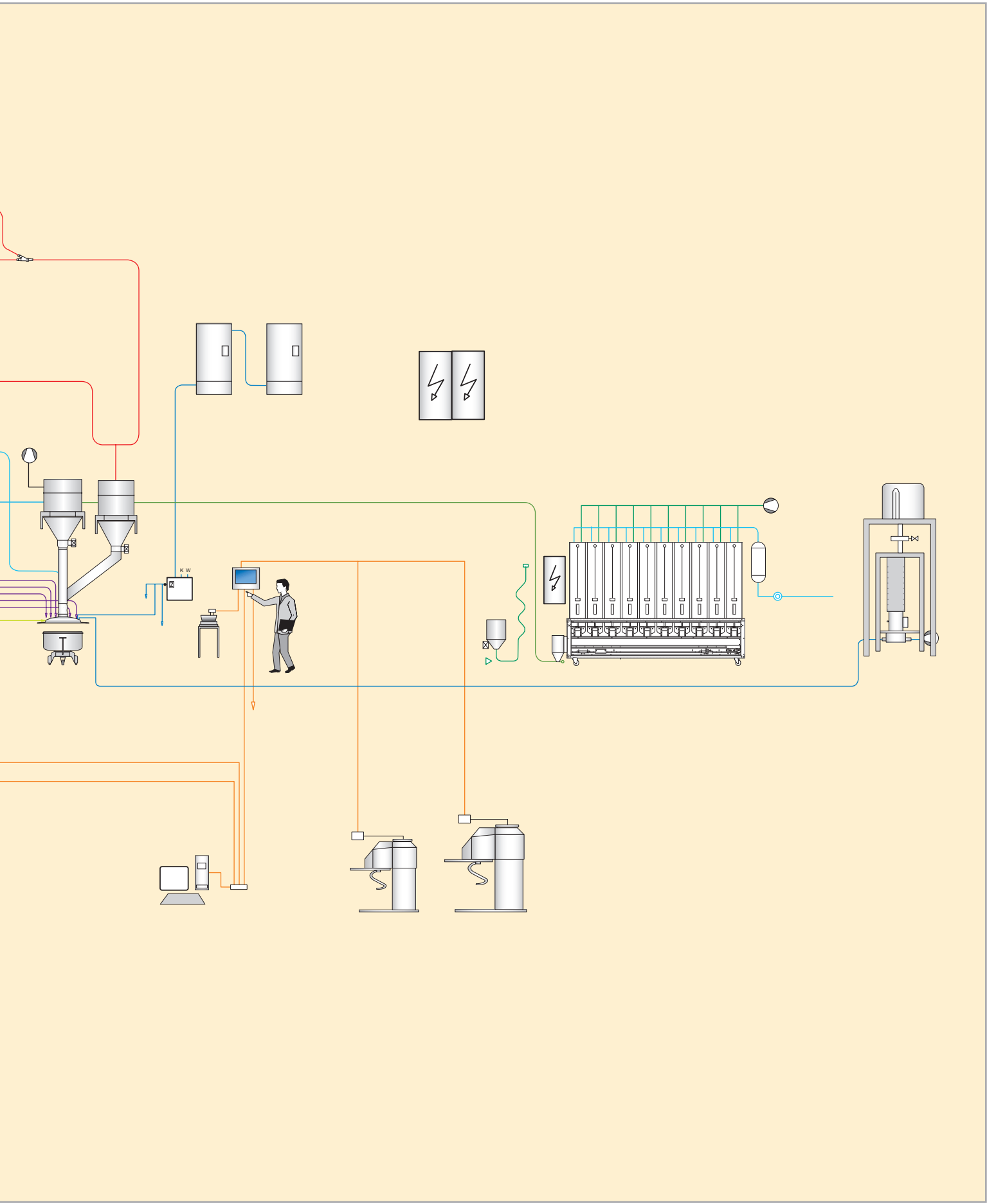
crushed ice dosing, Compo 800



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## Overview of installations:

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Item	Description	Units
A	Flour silo	2
B	Silo filling with joint pipeline	1
C	Pneum. bulking f. fluidised silo bed	1
D	Pneumatic flour feeder line 1 to flour weighing machine	1
E	Pneumatic flour feeder line 2 to predough machine	1
F	Sack dump station as surface silo	4
G	Pneumatic medium components feeder line 1	1
H	Compo 800, filling by suction bag dump	1
I	Pneumatic Compo feeder line 1	1
J	Central filter station f Compo, medium components, kneader hood	2
K	Flour weighing	1
L	Medium components weighing and Compo	1
M	Workbench dust exhaust	2
N	Production and storage of crushed ice	1
O	Crushed ice feeder and metering facility	1
P	Sourdough facility for rye sour	1
Q	Liquid feeder line for rye sour	1
R	Sourdough facility for wheat predough	1
S	Liquid feeder line for wheat predough	1
T	Aroma sour facility	1
U	Liquid feeder line for aroma sour	1
V	Liquid egg tank	1
W	Liquid feeder line for Liquid egg tank	1
X	Milk tank	1
Y	Liquid feeder line for milk tank	1
Z	Yeast facility	1
ZA	Liquid feeder line for yeast solution	1
ZB	Oil tank	1
ZC	Liquid feeder line for oil metering	1
ZD	Water metering	3
ZE	Hand-add ingredient scale	2
ZF	Recipe computer	3
ZG	Switch cabinet	12