



Big Dutchman®



HydroMix

The computer-controlled liquid feeding system
for profitable pig production

HydroMix – the modern liquid feeding system

The Big Dutchman feeding system **HydroMix** is an extremely flexible modular system to provide sows, piglets and finishing pigs with liquid feed. Every HydroMix system is matched to the number of livestock to be supplied and to the building conditions on the farm. HydroMix is particularly recommended if low-cost feed ingredients such as whey,

by-products from the food industry, CCM or maize silage are to be fed. **HydroMix** stands for a clever and reliable technology for fully-automated feeding of sows, piglets and finishing pigs for any size of production. To be able to meet our customers' demands at any time, our engineers are constantly enhancing the system. We can

therefore offer several different system concepts under the name HydroMix. The best possible concept for YOUR requirements will be discussed and planned in a detailed consultation with BD experts.



ESF station CallMaticpro with HydroMix



Sensor feeding



View into a finishing compartment with cross trough and trough sensor for feeding time control

In the **sow house**, HydroMix can be used in combination with all kinds of housing systems:

- ✓ gilts reared in groups;
- ✓ empty and pregnant sows in individual stalls and free-access stalls;
- ✓ ESF station CallMaticpro for pregnant sows kept in groups;
- ✓ nursing sows in farrowing pens with individual feeding.

For the **nursery**, the use of a sensor-controlled liquid feeding system (ad libitum or with feeding time control) is recommended, especially for weaners. This allows the farm manager to supply the piglets with small amounts of fresh feed whenever needed. A feed pump uses compressed air to dispense the feed.

In the **finishing house**, the pigs can be supplied with liquid feed either from longitudinal or cross troughs (animal: feeding place ratio of 1:1) or from short troughs with a sensor (animal:feeding place ratio of up to 3:1). The filling level can be measured either by an electronic sensor or pneumatically (Liquid LevelCheck).

Advantages of the HydroMix liquid feeding system

- ✓ preparation of individual recipes from different ingredients → high daily weight gains at low feeding costs;
- ✓ computer-controlled farm and feeding management → saves time and operates very reliably;
- ✓ extensive hygiene package → minimal germ count, healthy animals;
- ✓ high metering precision at every feed valve;
- ✓ reliable feed transport even over long distances;
- ✓ modular and therefore extremely flexible system for small as well as large production units → cost-efficient expansion is possible;
- ✓ equally suited for individual and group feeding;
- ✓ low operating costs, long service life.

Computer control – high precision in all areas

The Big Dutchman control computer makes our HydroMix liquid feeding system a system of the future. The software is user-friendly and runs on virtually any PC. This allows you to operate your computer-controlled liquid feeding system for sows and/or piglets or finishing pigs with only one software solution. Of course, farm-related management analyses are part of

the software. You can also control individual valves with automatic correction, compare set and actual feed amounts or feed your animals based on specific feed curves. Different recipes can be prepared easily. All data is input and displayed in tables and additionally shown in the form of graphs. Remote control including data transfer, data backup or

alarm messages to your mobile phone can be realised by means of a PC or alarm device.



Control of the liquid feeding system for a nursery



Control of the CallMatic pro ESF station as liquid feeding system



Control of a liquid feeding system for a finishing house



View into a feed kitchen with a HydroMix liquid feeding system for piglet rearing based on compressed air and a 1-tank, residue-free system for sow feeding

Advantages of the Big Dutchman control

- ✓ flexible control suited to many different system types;
- ✓ easy, user-friendly software that runs on virtually any PC;
- ✓ balanced feeding thanks to specific feed curves;
- ✓ control of every process step;
- ✓ control of individual valves with automatic correction;
- ✓ comparison between set and actual feed quantities;
- ✓ remote control with data transfer and data backup from the PC;
- ✓ system can be controlled over any distance;
- ✓ management analysis of the farm data as well as easy administration.

Customised feeding systems

When planning to provide pigs with liquid feed, some issues must be discussed beforehand. These include:

- ✓ number and age of the animals
- ✓ feeding strategy (restricted or sensor feeding)
- ✓ length of the feed transport distances

- ✓ transport medium to be used (water or air)
- ✓ design as residue-free feeding system (ring lines or JET branch lines)

These are only some of the factors that need to be considered. Big Dutchman has developed many different system types

for various applications. You are therefore able to adjust the system ideally to the conditions of your production unit.

Tried and tested system concepts

	Filled branch line	Filled branch line	JET branch line (empty)	Residue-free ring line	Empty line
1-tank system	X	X	X*		
1-tank system (residue-free) with rinse water tank	X	X	X	X	
2-tank system	X	X	X*		
2-tank system (residue-free) with rinse water tank	X	X	X	X	
1-tank system (residue-free) with compressed air**					X
2-tank system (residue-free) with compressed air**					X

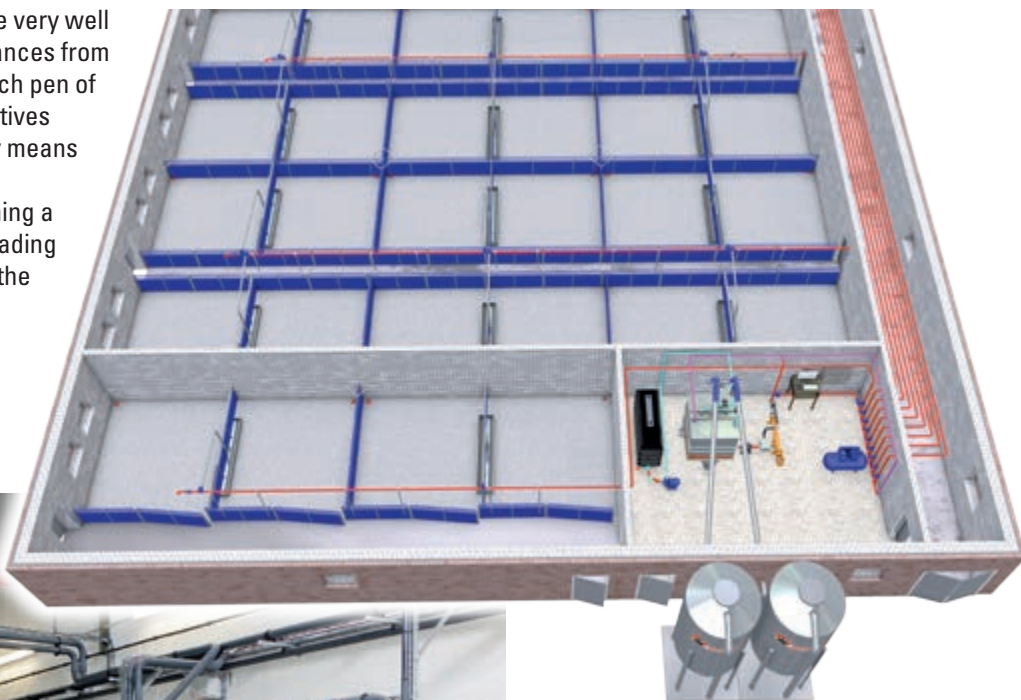
* only possible where the content of the JET branch line is smaller than the smallest mixing or water quantity

** piglet feeding system

1-tank system with filled branch lines

1-tank systems with filled branch lines are very well suited to compact houses with short distances from the feed kitchen. This allows to supply each pen of pigs over a single feed line (branch). Additives can simply be added to the branch line by means of MedilInject.

For larger houses we recommend combining a residue-free ring line with branch lines leading towards the pens to reduce the length of the lines and the runtime of the system.



Feed kitchen: 1-tank system with filled branch lines for a finishing house with 2000 pigs

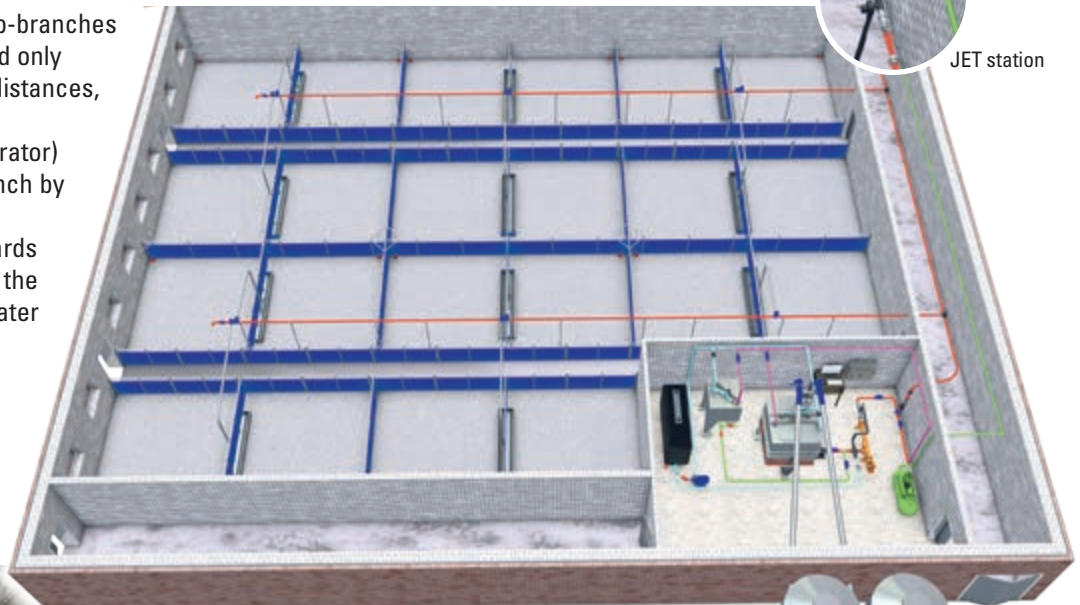
1-tank systems with filled branch lines are ideal for sensor feeding. They make it technically simple to provide many small quantities of feed.

1-tank system with rinse water tank and JET branch line

Combining JET branch lines with sub-branches is ideal for finishing houses. The feed only needs to be transported over short distances, i.e. only very few pipes are required.

This concept includes a JET (a separator) that is pushed through the main branch by compressed air.

After mixing, the JET is pushed towards the end of the branch, together with the feed. The feed is then dispensed. Water is pushed in until the entire pipe is completely empty of feed. This process simultaneously rinses the pipe.

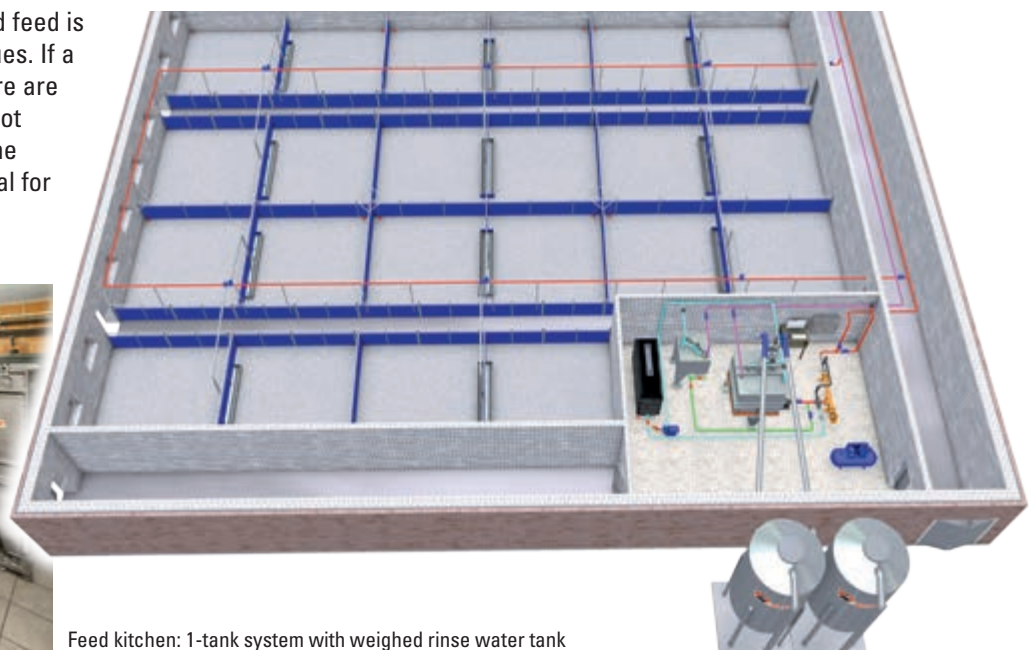


Feed kitchen: 1-tank system with rinse water tank and four JET branch lines

After feeding has been completed, compressed air and the JET push the water back into the weighed rinse water tank. From there, it is then available to mix another recipe. This means that the main branch is empty and clean until the next feeding starts. The shorter sub-branches, however, remain filled with feed.

1-tank system with weighed rinse water tank and residue-free ring line

When using this concept, the entire mixed feed is dispensed at each feeding, without residues. If a weighed rinse water tank is installed, there are no breaks in the feeding process as it is not necessary to pump any used water into the mixing tank. This concept is therefore ideal for sow feeding.



Feed kitchen: 1-tank system with weighed rinse water tank



Feed kitchen: 1-tank system with weighed rinse water tank

Pipe rinsing: When the feeding process is completed, the entire system, including all valves, drop pipes, piping, as well as the mixing and rinse water tanks, are rinsed with fresh water. Between feeding times, only clean water remains in the lines. It is transferred into the mixing tank and used to mix the next batch of feed.

2-tank system with two mixing tanks and one rinse water tank

For this concept, two tanks are used as both mixing and feeding tanks. The entire required feed quantity is split into several portions for this purpose. While feed is being prepared in one of the two tanks, feed is dispensed from the second tank. This means that with this system you are able to **mix and feed at the same time**. It can be designed as residue-free feeding system (ring line or JET branch line).



Feed kitchen: 2-tank system with rinse water tank

The advantage of such a system: large numbers of animals can be supplied with many different recipes very rapidly. There is **no waiting time** between distribution of different recipes.

1-tank system with rinse water tank for residue-free feeding: SwapTank system

With this concept, we have further developed the 2-tank system with rinse water tank. The SwapTank system does not require an additional rinse water tank. Instead, both tanks are used as either mixing tank or rinse water tank, depending on the required amount of feed. Very small as well as very large feed

quantities can be mixed and dispensed precisely, always based on the required amount of feed, thanks to the different sizes of the tanks. The control computer checks all troughs via sensor and then selects which tank to use for which purpose. It is therefore easy to meet different requirements as these are

common especially in closed or combined production systems.



Advantages of the SwapTank system

- ✓ small as well as large amounts of feed are mixed and dispensed very exactly and uniformly → very flexible system;
- ✓ no additional rinse water tank required → investment costs can be saved;
- ✓ each tank is used for the correct mixing quantity → improved hygiene

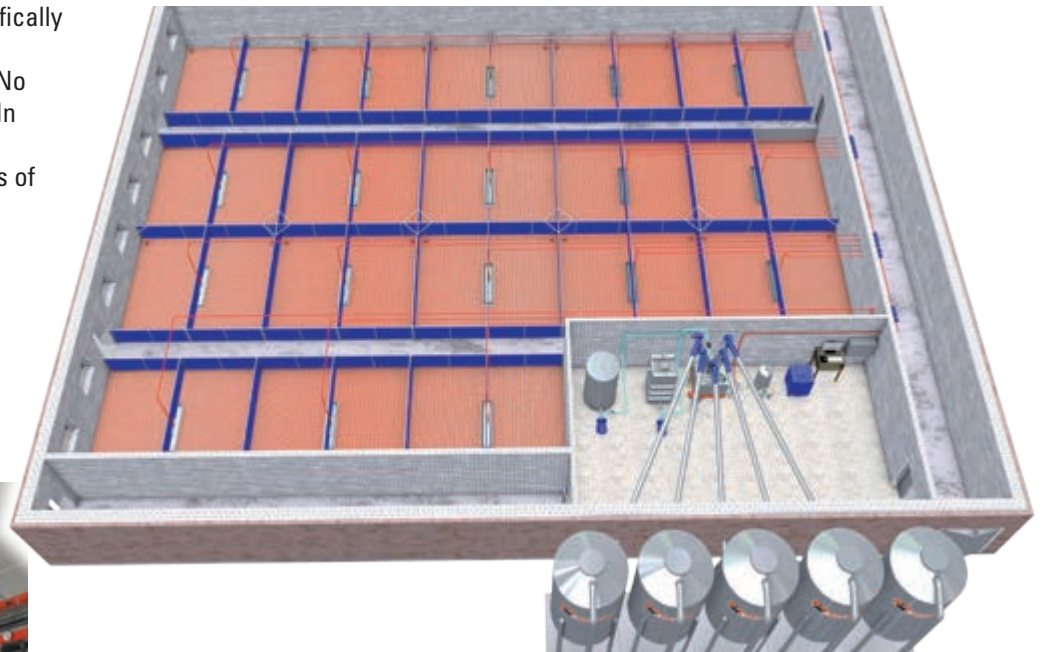


Feed kitchen: 2-tank system with rinse water tank

1- or 2-tank system for residue-free feeding via compressed air

This concept has been developed specifically to feed weaners from a weight of 6 kg. Compressed air keeps the pipes clean. No water is required to transport the feed. In summary, this means:

- ✓ small and thus always fresh amounts of feed can be supplied several times during the day → high daily weight gains;
- ✓ recipes with very high dry matter (DM) contents can be dispensed;
- ✓ no used water inside the system;



Feed kitchen: 1-tank system (residue-free) with compressed air

- ✓ any amount of warm water can be used to mix the recipe;
- ✓ feed is dispensed without residues as no feed remains in the lines;
- ✓ no carry-over of vitamins and minerals in the feed lines;
- ✓ recipes can be mixed from up to 48 ingredients → cost-efficient feedstuffs can be bought very flexibly;
- ✓ feed composition meets the requirements of the piglets ideally → phase or multi-phase feeding ensures that

- feed changes are smooth and cause no stress;
- ✓ ideal conditions for optimum feed hygiene and therefore healthy piglets;
- ✓ valves can be installed outside the compartment, i.e. there are no electric components inside the compartment.

Efficient feeding strategies for pig production

Restricted feeding with feeding time control

For restricted feeding from a longitudinal trough, feed is supplied two to four times per day. The animal:feeding place ratio is 1:1. Since all pigs are standing at the trough during feeding times, the farm manager can inspect his stock during this time. Pigs which are not standing at the trough can easily be marked and then monitored more intensely or treated, if necessary.

It is also possible to install a sensor that registers the length of the feeding time and transmits these data to the control unit. If the pigs empty the trough very quickly, the next feeding ration is automatically larger. Should the feed remain longer in the trough, the next ration will be reduced.

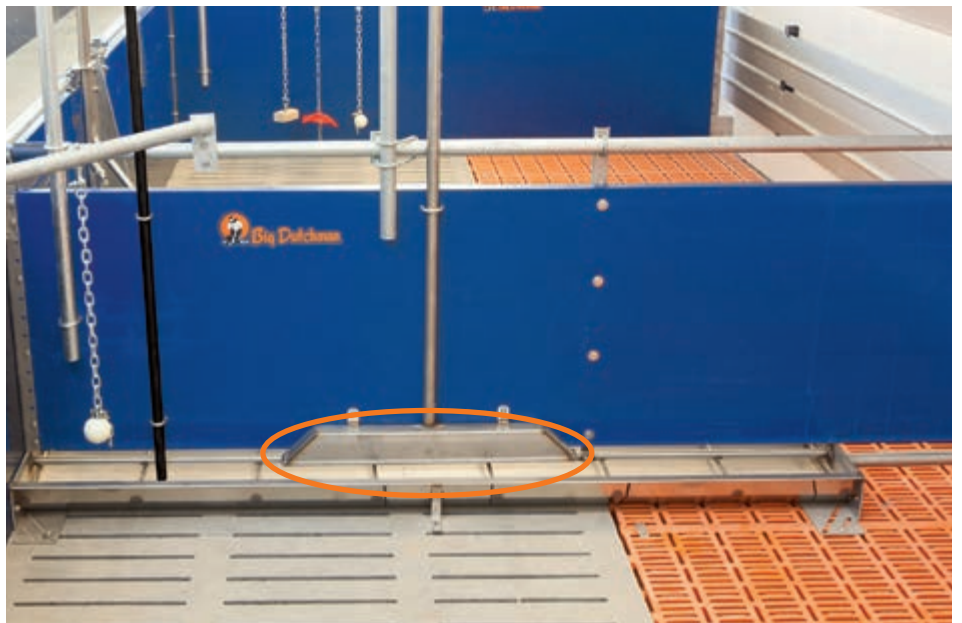


Restricted feeding from the longitudinal trough with feeding time monitoring by means of a sensor

Sensor feeding

For sensor feeding from the short trough, a sensor determines whether the pigs have emptied the trough or not. This system allows an animal:feeding place ratio of up to 3:1, which is very beneficial in terms of housing space utilisation. Trough sensors help achieve optimum feeding results.

A stainless steel sensor rod is installed above the bottom of the trough. Up to a trough length of 3.50 metres, a sensor is used. This sensor measures whether the feed connects with the sensor rod and the trough electrically. If there is no connection, the sensor indicates that the trough is empty. This connection is checked at freely adjustable intervals. The feeding time control is also a sensible solution for sensor feeding from the short trough.



Drop pipe with patented distributor for feeding piglets via compressed air

Advantages

- ✓ animal:feeding place ratio of maximum 3:1 → improved utilisation of housing space;
- ✓ needs-adapted feeding based on a feed curve;
- ✓ the sensor indicates whether the trough is full or empty;
- ✓ frequent supply of small, fresh quantities of feed;
- ✓ accommodates flexible pen shapes, especially important in refurbished buildings;
- ✓ control of the feeding times → automatic adjustment of the feed quantity depending on how much the pigs eat.



HYGIENE – basic condition for healthy animals

The extensive but easy-to-use and economic Big Dutchman hygiene package ensures that your pigs stay healthy and can achieve high daily weight gains. Our **hygiene package** includes:

- ✓ a pneumatic inlet funnel;
- ✓ efficient tank cleaning by means of motorised spray nozzles;
- ✓ a fogging nozzle.

Advantages of the BD hygiene package

- ✓ concerted hygiene measures reduce the germ count of the entire feeding system;
- ✓ high cleaning performance, manageable costs;
- ✓ fully-automatic cleaning;
- ✓ reduced use of water and acid;
- ✓ freely selectable cleaning intervals;
- ✓ low maintenance requirements.

Pneumatic inlet funnel for feed components

The pneumatic inlet funnel ensures that the feed intake is only open until all dry feed components are in the mixing tank. This means the inlet funnel remains closed when the rotating cleaning heads and the fogging nozzle clean the mixing tank after the feed has been discharged. At the same time, the pneumatic funnel ensures that the dry ingredients do not get into contact with humidity.

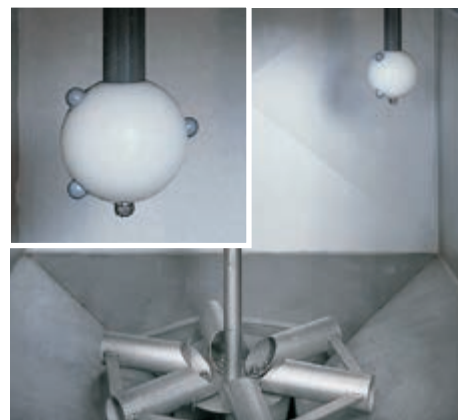
Thanks to the central position of the funnel, the ingredients mix extremely well.



Tank cleaning

Motorised spray nozzles ensure a thorough, fully-automatic cleaning of mixing and rinse water tanks. The rotating cleaning heads with specially-designed variable nozzles adapt to the required amount of water and the pressure. Consequently, a very small quantity of water can still obtain optimum cleaning results throughout the tank. A separate water line with fresh water

pump supplies the cleaning heads with water. The tank cleaning system can be retrofitted to any existing liquid feeding system as well.

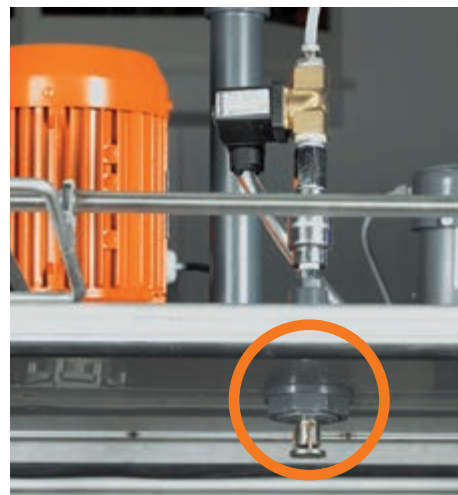


Fogging nozzle

The fogging nozzle is ideally suited to disinfect the mixing and rinse water tanks. Several times a day, this system distributes very small quantities of feed disinfection solution into the tank. In this way, any dirt film forming on the inside of the tank after longer operation is removed without residues. The fog reaches every part of the tank and ensures optimum disinfection.

The fogging nozzle operates with compressed air. The negative pressure thus created is used to extract the acid

directly from the can without the need for an extra pump. If the required safety measures are observed, the fogging nozzle can be installed into any existing liquid feeding system. This requires a safety switch with automatic locking at the tank.



Important parts of a HydroMix liquid feeding system

Mixing tank

Big Dutchman offers a wide range of mixing tanks:

Square-shaped, made of high-quality stainless steel in sizes from 300 L (minimum mixing amount 30 kg) up to 8000 L (minimum mixing amount 150 kg). Larger tanks are available upon request.

Round, made of high-quality stainless steel in sizes of 160 L and 250 L (minimum mixing amount 8 kg).

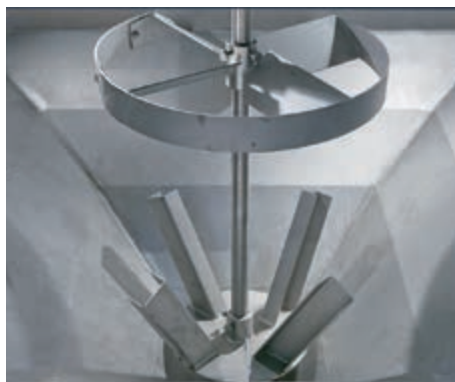
Round or square-shaped, made of acid-resistant glass-fibre reinforced plastic (GRP) in segmental design in sizes from 1500 L (minimum mixing amount 150 kg) to 10000 L (minimum mixing amount 250 kg). Larger tanks are available upon request.



Agitator

Based on the size of the mixing tank, we have a number of different agitators available.

All Big Dutchman agitators are made of stainless steel and ensure that all feed ingredients are mixed optimally for a uniform feed mix.



Agitator type M



Agitator type L

Level-controlled agitator

This agitator, newly developed by Big Dutchman, constantly adjusts its position in the mixing tank for liquid feeding relative to the filling level.

Optimum mixing of all ingredients used in a recipe is the decisive prerequisite for supplying all pigs with a performance-

adapted nutrition. This applies to both large and small feed quantities.





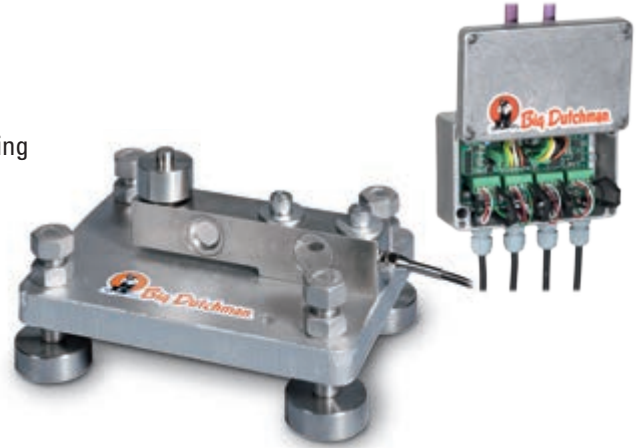
How the level-controlled agitator works (schematic view)

The level-controlled agitator ensures complete mixing of all components. A further advantage is the improved hygiene inside the tank due to very little liquid hitting the walls. The agitator can be retrofitted into existing HydroMix systems.

Electronic weighing

Based on their design, the mixing and rinse water tank are equipped with a very precise, electronic 3- or 4-point weighing system. The rugged weigh bars are installed beneath the tanks. They record any change in weight while the feed components are added as well as during the dispensation of the ready-mixed feed,

and transmit the corresponding information to the control computer with high precision.



Foreign matter separator

For a smooth feed transport and to avoid damage to the liquid feeding system, it is recommended to install a foreign matter separator. The separator is made of stainless steel and has a central inlet and outlet. The feed mix hits a deflector which slows down the flow speed and causes foreign matter, such as stones for

example, to drop away. Metal pieces are separated by the installed magnet. The foreign matter separator can be emptied and cleaned through a hinged lid which can easily be opened; no tools required.



Compressor

The high-quality electronic compressors used by Big Dutchman supply the quantity of compressed air required for the actuation of all connected valves. Four different models are available as standard; other models are available upon request.



Reciprocating compressor

Screw compressor

Voltage	V	400	400	400	400
Power	kW	1.5	4	4.0	7.5
Aspiration flowrate	L/min	350	900	-	-
Tank volume	litres	50	100	-	-
Pressure	bar	10	10	10	10
Number of cylinders		1	2	-	-
Discharge flowrate	L/min	-	-	450	930
Separate tank	litres	-	-	500	500

Feed pump

The efficient Big Dutchman pumps ensure that feed is reliably transported from the mixing tank to the trough. Depending on the feeding method, the length of the lines and the type of feed, either centrifugal pumps or positive displacement pumps are used. Both types are usually frequency-controlled today.



		Centrifugal pump			Positive displacement pump				
Capacity	kW	4.0	5.5	7.5	3	3	3	4	7.5
Conveying capacity during feeding	L/min	120	135	160	60	130	200	300	400
Max. delivery pressure	bar	3.6	3.8	4.8	8	6	4	4	4
Typical areas of application		finishing, waiting, transfer			piglets, sows, transfer				

Feed valve

All Big Dutchman feed valves are equipped with a flow-optimised valve body and are very rugged, showing reduced wear and a high functional reliability. The feed valve is selected depending on the system concept.

Feed valve with solenoid valve

This feed valve has been proving its worth for many years. Hundreds of thousands of this valve are being used all over the world. The valve is actuated electro-pneumatically and can be installed very flexibly in many positions as it is mounted on a T-piece within the feed line.

Feed valve without solenoid valve

If no solenoid valves are to be installed in the compartments, our feed valve without solenoid valve is the ideal option. The valves and trough sensors are actuated purely pneumatically by means of a valve cluster in the central aisle.

3-way T ball valve

Ball valves are characterised by their cavity filler (optimum combination of valve body and ball). This is especially important for the feeding of baby piglets, which must meet very high hygiene standards. Ball valves also easily adjust to higher conveying pressures caused by the system.

Feed valve for JET lines

Systems with JET branch lines require a special feed valve where the inside diameter of pipe and valve are identical. This valve is available for two diameters: 50 and 63 mm.



Feed valve with solenoid valve



Feed valve without solenoid valve



Valve cluster for pneumatically actuated feed valves



3-way T ball valve made of stainless steel



Feed valve for JET lines

TwinSpin – the tube system system for a homogeneous feed mix all the way to the trough

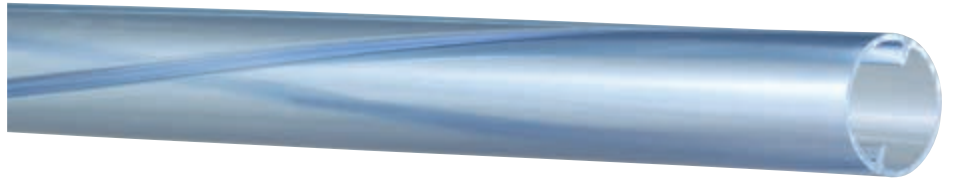
The feed is transported from the mixing tank to the feed valve via acid-resistant plastic tubes (available in different diameters).

The TwinSpin tube system, newly developed by Big Dutchman, transports the feed mixture all the way to the trough – without separation of the components. TwinSpin can be used in branch lines just as well as in ring lines and features an integrated double spiral. Scientific tests have proved that the feed arrives at the feed trough in a quality as of yet unknown, ideally mixed for the pig.

Using TwinSpin is recommended especially if:

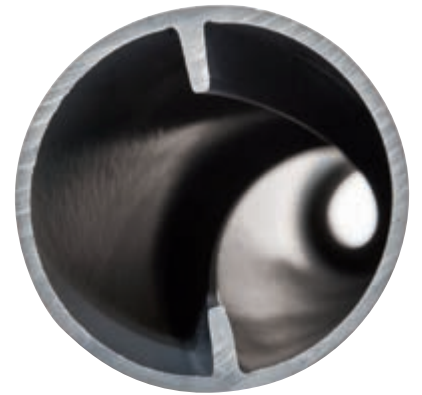
- ✓ the conveying distance is very long;
- ✓ the recipes have a very low DM content;
- ✓ the feed has a high solids to liquid ratio;

- ✓ the ingredients have low water absorptive properties;
- ✓ the metering rates and flow velocities are especially low, e.g. in farrowing houses.



Advantages

- ✓ feed components remain mixed from the mixing tank all the way to the feed valve → stable dry matter content at every valve;
- ✓ improved metering precision thanks to a constantly uniform feed mixture;
- ✓ no deposits caused by sedimentation → no clogging;
- ✓ deliberate turbulences inside the tube significantly improve hygiene;
- ✓ very little pressure loss;
- ✓ available in dark grey and as transparent versions and in two diameters: 50 and 63 mm;
- ✓ TwinSpin can be retrofitted into existing liquid feeding systems.



Inside of a TwinSpin tube

Fresh water tank

The fresh water tanks available from Big Dutchman are made of plastic and can be supplied in different sizes (1000 L, 2000 L, 3000 L, 5000 L and 10 000 L). Multiple tanks can be combined to form a fresh water

unit. All tanks used by Big Dutchman are lightproof, thus preventing the formation of algae.

The fresh water pump has a working pressure of 5 bars, which is the required

pressure for thorough cleaning of the tank.



10 000 L fresh water tank



Feed kitchen with 2-tank residue-free feeding system and two 2000 L fresh water tanks

Liquid LevelCheck – the pneumatic filling level measurement in the trough

Liquid LevelCheck determines the filling level in the trough with millimetre precision. If additional feed is required, small amounts can be mixed and dispensed reliably and very exactly. With this new principle of pneumatic filling level measurement, a so-called »air bubbler system«, slightly pressurised air with a low volume is introduced through the sensor pipe to determine whether any, and if so how much, feed is left in the trough. For this purpose, the sensor pipe is installed directly above the trough bottom at the lowest point of the trough. Depending on the filling level, the pressure in the sensor pipe changes. The Liquid LevelCheck control unit is responsible for measurement. It checks at regular intervals whether the trough is empty or how high the filling level is in the trough. This allows the farm manager to react to the actual quantity in the trough

and to make sure the correct amount of fresh feed is dispensed. The pigs thus always receive fresh feed in small quantities. This improves feed intake as well as the trough hygiene.



Control unit for Liquid LevelCheck – simple installation in the aisle



The sensor determines if and how much feed is in the trough

MediInject – the ideal medication system

With MediInject from Big Dutchman, you can administer water-soluble additives, vitamins or other substances, fully automatically and very reliably. Dosing can be done in three different locations:

- ✓ injection per valve directly into the feed discharge to the trough → the added substance will not get into the feed line. There is no unwanted carry-over of the substances;
- ✓ injection into the branch line or the sub-branches;
- ✓ injection directly into the mixing tank.

MediInject is equipped with a mobile pumping and mixing station which can be used for multiple houses. A variant for fixed installation is also available. As the substance mix is pumped in at intervals, it is also possible to use substances that are poorly soluble in water. After completing the administration of medication, the Medi ring line should be rinsed with water to ensure that no residues remain in the lines.

MediInject can easily be retrofitted in all computer-controlled liquid feeding systems.



MediInject mobile with 100 L tank volume
Code no. 21-00-2558



MediInject fixed with 300 L tank volume
Code no. 83-08-2253

PEF system – making maize silage digestible for pigs!

The new **PEF system** developed by Big Dutchman allows farm managers to feed their pigs maize silage! Because of its dietary effects, crude fibre is an important ingredient of the feed pigs receive. Crude fibre levels of 3.5 to 4.5 percent in the feed for finishing pigs

(approximate value) at a DM content of 88 percent improve animal health and well-being. This is not a new finding. However, it often proves difficult to provide cost-efficient feed which has the required protein content and energy density but also the optimum crude fibre content.

With the PEF system, Big Dutchman now offers customers the possibility to feed finishing pigs recipes with a silage maize level of up to 15 percent when using a liquid feeding system. Let our experts advise you on how to find the best solution for your individual requirements.

How the PEF system works



PEF stands for **Pulsed Electric Fields**. High-voltage pulses are applied to a chopped maize plant, thus opening the cells and making the entire plant digestible for pigs. The chopped maize is first mixed with

water in a pre-mixer **1**. The entire mix is then put through a special chopper **2**. The gruel created in this manner is now available as a component for liquid feeding. As soon as the feeding computer demands this component, it is guided

through the PEF system **3**. The cells are opened and the gruel is immediately transported to the mixing tank **4**. The recipe is then ready to be fed to the pigs.

Advantages

- ✓ feed with high crude fibre contents strengthens the gastrointestinal tract → healthy intestinal flora, calmer animals;
- ✓ reduced development of E. coli bacteria;
- ✓ less antibiotics required;
- ✓ maize silage is a very cost-efficient feed with a better land use than grain maize or CCM;
- ✓ the PEF system can be retrofitted (for any liquid feeding system);
- ✓ low maintenance requirements.



Freshly chopped maize silage



Maize silage and water inside the pre-mixer



Maize silage gruel (minced) inside the pre-mixer

CCM metering – directly into the mixing tank

CCM (corn cob mix) and other by-products of the food industry are high-quality feed components. They are easily processed when using a liquid feeding system and help to reduce feed costs. Big Dutchman

can satisfy nearly any customer wish due to an extensive product range. Available products include metering systems for CCM and high-moisture grain as well as bread choppers, in many different sizes

and versions. Our CCM metering system can also be supplied with an additional seal for safe storage and dispensing of wet components.



Characteristics

- ✓ depending on the metering system and the hopper extension, capacities range from 2.3 to 14 m³;
- ✓ a maintenance-free motor with an output of 4 or 5.5 kW is used as drive;
- ✓ the discharging auger has its own drive;
- ✓ the hopper extension can be rotated in 10° steps, thus allowing flexible installation;
- ✓ optionally available with two outlets and a rain-proof cover;
- ✓ all parts of the metering system which come into contact with feed and the tube augers are entirely made of stainless steel.

The CCM metering systems offered by Big Dutchman are well suited to store and supply CCM, high-moisture grain, draff and other feedstuffs to the liquid feeding system.

The storage hopper is made of stainless steel and is available in different sizes. Its circular bottom is equipped with a Z-shaped blade which is powered by a gear motor. This blade effectively

prevents feed in the hopper from bridging. Discharging and slope augers transport the feed directly into the mixing tank. The CCM metering system can be

installed either in the feed kitchen or outside, in which case it has to be equipped with a lid.



Hopper bottom with Z-shaped blade and discharging auger



The Big Dutchman CCM metering system is available in different sizes



Big Dutchman

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