



Mühlenchemie

makes good flours even better

EMCEtec GLD 87

High Accuracy Feeder for Micro-Ingredients

The EMCEtec GLD 87 feeder can be installed in any existing milling or flour processing plant, as single unit or as battery, for the addition of micro-ingredients, e.g. flour improvers such as ascorbic acid, enzymes, or bleaching agent. For feeding of two or more additives, two feeders or a premix of all additives is required. Premixes can be prepared by Mühlenchemie.



EMCEtechnix GLD 87 with hopper and metering helix (intromitter hidden)



EMCEtechnix GLD 87 engines for metering helix and intromitter

The EMCEtechnix GLD 87 micro-feeder comprises

- a feeding trough with flange connection, a metering helix,
- a metering discharge tube (100 - 300 mm);
- a separately supported intromitter (for loosening of bulky powders);
- a drive shaft, sealed by means of stuffing box;
- a drive motor for the intromitter: three phase AC motor 0.06 KW, 14,9 nm, 230/400 V, 50 Hz, enclosure IP 54, 19,5 rpm, and
- a drive motor for metering helix: DC geared, 0.12 KW, enclosure IP54, without tachogenerator.

Material of construction: product contacted parts stainless steel, quality 1.4571;
surface treatment: feeder glass bead blasted, drive motors with manufacturer's standard finish

Mühlenchemie GmbH & Co. KG

Kurt-Fischer-Straße 55
D-22926 Ahrensburg
Telefon: + 49 (0) 41 02 / 202-001
Fax: + 49 (0) 41 02 / 202-010
E-Mail: info@muehlenchemie.de
www.muehlenchemie.de

Geschäftssitz Ahrensburg
Ust.-ID-Nr.: DE227412995
Amtsgericht Lübeck HRA 3348 AH
Komplementärin
Mühlenchemie Verwaltungsges. mbH
Amtsgericht Lübeck HRB 4648 AH
Geschäftsführer Volkmar Wywiol /
Stefan Schlessler / Lennart Kutschinski

HSH Nordbank AG, Hamburg
BLZ 210 500 00, Konto 737 536 000
BIC: HSHNDEHH
IBAN: DE41 2105 0000 0737 5360 00
Berenberg Bank, Hamburg
BLZ 201 200 00, Konto 526 130 07
BIC: BEGODEHH
IBAN: DE55 2012 0000 0052 6130 07



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Needed Equipment

Speed Controller, Type Frequency Converter

This control unit is linked to the mill and receives the signal there. Speed is set and adjusted through this control board. Brand is Danfoss or Hitachi or any comparable one.

Hopper

Volume 30 L, Material stainless steel, quality 1.4571, glass bead blasted

Cover with attached Agitator (to prevent any blocking of the product)

0.12 KW, 230/400 V, 50 Hz, IP 54, 4,3 – 5,2 rpm, 106 mm, cover with inlet and vent spigots. Material stainless steel, quality 1.4571

Low level sensor which indicates the presence of product inside the feeder (optional)

Capable of working in temperatures from –5 to +50°C

Internal mixing unit,

Capable working at 95% humidity,

Easy possibility to change the dosing range

Installation

The Micro-Feeder should be installed at the conveying screw with at least 400 cm remaining after the feeding point in order to get a homogenous mixture. Installation can be assisted by our technicians. For the calculation of the feeders helix, please note that most additives have a specific weight (bulk density) of 0.5 – 0.8 kg per litre. Vitamin premixes containing iron have a specific weight up to 1kg per liter. As this is depending on the product that should be added, the calculation for the right feeding tool should start with the products volume.

Feeding volume and mass		
Capacity range	Milling capacity ¹ (t/h)	Additive dosage (g/100 kg flour)
0	10	3 - 60
0	20	1.5 - 20
1	10	10 -200
1	20	5 - 100
2	10	40 – 800
2	20	20 - 400
3	10	130 -2600
4	10	250 - 5000

Recommended feeding tools		
Capacity range	Volume (L/h)	Mass ² (kg/h)
0	0.3 - 6	0.21 – 4.2
1	1.1 - 22	0.8 – 13
2	4 - 80	2.8 - 56
3	13.5 - 270	10 -200
4	27.5 - 550	20 - 400

¹Extraction rate 75 %

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HSH Nordbank AG, Hamburg
BLZ 210 500 00, Konto 737 536 000
BIC: HSHNDE33
IBAN: DE41 2105 0000 0737 5360 00
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Example 1: A 240 tons per day mill wants to install a feeder. In one hour, 20 tons of wheat are milled so that at 75% extraction around 15 tons of flour will pass the conveying screw. An additive with a dosage of 100 g per 1 ton of flour shall be added. For 15 tons per hour the total amount of additives is 1.5 kg which is equivalent to around 2.3 litres. In the above right table you can see that 2.3 litres would be possible in capacity range 0 and 1.

Example 2: A flour mill wants to add a vitamin premix containing iron and folic acid. Dosage of that product is 10g per 100 kg flour. Litre weight is 1 kg.

Basic calculation:

1. How much flour is passing the conveying screw per hour? → 7.000 kg
2. How much premix should be added in one hour? → 100g per ton = 700g per 7.000 kg
3. How many litres are 700g? → 700g x bulk density (1) = 0,7 litres / hour
4. Which is the right feeding tool? → Table previous page. 0.7 litres is only possible within capacity range 0
5. Which other dosages are possible within that range? → 0.3 – 6 litres = 300 – 6.000g of vitamin mix

In any case, please be assured that we will recommend the right feeding tool before delivery.

Modification of the feeding capacity range

To alter the capacity range, the metering helix, the front plate with dosage pipe and the intromitter have to be changed. This could be done within 5 minutes. Before beginning disassembly the power supply should be switched off.

- Loosen the 5 hexagonal cap nuts (M8) on the front plate with spanner (13 mm A/F). The front plate can now be removed.
- The metering helix can be unscrewed by turning to the *right*.
- The intromitter can be removed by loosen the hexagonal screw with fork spanner SW 13
- Install the new intromitter, the new metering helix and the new front plate.



Different dosing pipes and metering helices available

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Reference installations in wheat flour mills

2 x	SC Vital, Romania, 400t/d
5 x	Upper Egypt Flour Mill, Egypt, 1300 t/d
1 x	Misr Italy Flour Mill, Egypt, 150 t/d
2 x	El Safa Flour Mill, Egypt, 500 t/d
2 x	Delta Bakeries, Egypt. 500 t/d
1 x	Modern Flour Mills, Jordan, 250 t/d
1 x	Grand Flour Mills of Zerca, Jordan, 400 t/d
1 x	Standard Flour Mills, Nigeria
1 x	Wadi el Nile Flour Mill, Egypt, 350 t/d
1 x	Yemen Company for Flour Mills & Silos, Yemen, 2000 t/d
1 x	Abu Dhabi Flour Mills, Egypt
1 x	World Health Organisation, Switzerland
2 x	Ogo, Russia, 700 t/d
1 x	Ural, Russia, 150 t/d
1 x	Tver, Russia, 700 t/d
1 x	Sotiru, Ruanda, 25t/d
2 x	La Pasta, Cameroun 100t/d
1 x	Eastern Grain Milling, Uganda
4 x	Yemen Company for Flour Mills and Silos, 3750 t/d
3 x	FGI Marokko
1 x	Babolab, Iran
1 x	Les Moulin du Segou, Mali
1 x	LBC Minoterie, Algerie
1 x	Sosemie, Algeria
1 x	Al Musharaf Flour Mill, Sudan
1 x	Chemitec Egypt
1 x	Crown Mills, Lebanon
1 x	National Milling Company of Guyana, Guyana, 250 t/d
1 x	Carribbean Flour Mills, Trinidad, 150 t/d
1 x	Molinos Venezolanos, 240 t/d
1 x	Molinos Hidalgo, Venezuela 400 t/d
6 x	NGO ACTS, Georgia
76 x	WFP, Egypt
1 x	Sitrabcam, Cameroun, 150 t/d
1 x	Jofran, Greece, 400t/d
78 x	Ministry of Social Solidarity – Egypt
1 x	Sitrabcam, Cameroun
2 x	Irani Brothers, Ghana
1 x	Vitachem, Nigeria
1 x	Jofran, Greece
3 x	Republic Grain Investments, Trinidad and Tobago
1 x	Seaboard Corp., National Milling Co. of Guyana, Guyana
1 x	Procure Zambia Ltd., Zambia
22 x	Ministry of Social Solidarity – Egypt
11 x	WFP Cairo

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