

suurDOS[®] QUADRUPLE viscous additive dosing system

When premium pet food producer IAMS needed an accurate continuous dosing system for small quantities of viscous sugar syrup additive, Suurmond developed a custom dosing unit: the suurDOS[®] QUADRUPLE. Based on MAAG gear pumps, this new unit enables IAMS to produce its range of cat and dog foods faster, more hygienically, and with precise adherence to the recipe.

Depending on the animal and its needs, cat and dog food is produced according to many different recipes. A wide range of additives is available to give each individual product the attributes that benefit the pet and its owner, such as a longer shelf life, extra nutrition for young or sick animals, or mineral and vitamin supplements for older animals.



suurDOS[®] with 4 MAAG pumps type CINOX for continuously dosing small quantities of viscous sugar syrup

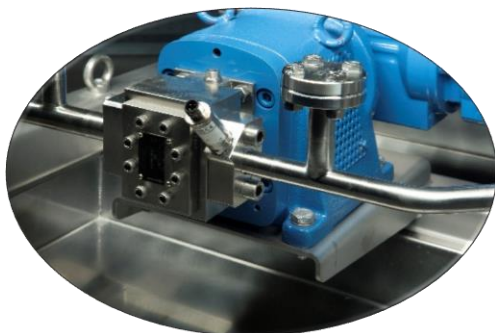
Sugar syrup

One of the additives used by IAMS is sugar syrup. Until now, the company itself produced this syrup by dissolving a powder concentrate in water. This labour-intensive process is costly, and it was decided to switch over to ready-made syrup. The syrup now arrives at the plant in large, heated road tankers, and is then pumped into heated silos.

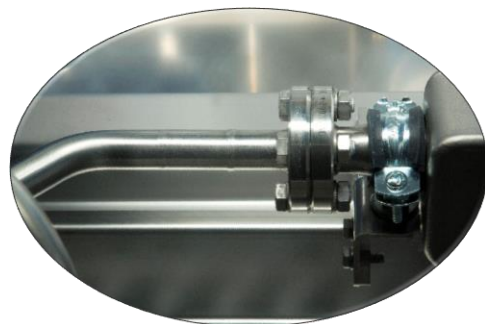
From these silos, the sugar syrup is fed to the pet food production process, where it is precisely dosed in a continuous process. To provide IAMS with a dosing unit of the required reliability, hygiene and dosing precision across four production lines, Suurmond developed the suurDOS[®] QUADRUPLE system. suurDOS[®] stands for the 'Suurmond dosing system', and QUADRUPLE refers directly to the unit's capacity to supply four production lines simultaneously.

Arrangement

The suurDOS[®] QUADRUPLE is built around four individually-controlled MAAG gear pumps. The required syrup dose is determined by the main controller, which issues commands to the pumps based on the recipe (set point) plus feedback from the mass flow meters. In this way, the speed of each pump is regulated to achieve the necessary volume flow rates.



The connection of the pressure transducer is integrated in the for this purpose modified product flange.



Hygienic flange connection in accordance with DIN 11864-2.

Apart from precision dosing control, maximum attention has also been given to the hygiene requirements. One of the many measures is the use of special DIN flanges with a fully seamless seal to the pipework, creating an extremely smooth flow path. This means the unit can be thoroughly cleaned as per CIP guidelines.

In addition, special measures have been taken to prevent unintended opening of the dosing unit by personnel: a key safety concern, given the system's operating pressure of 10 bar.

TECHNICAL SPECIFICATIONS

Flow rate	0.17 to 1.23 l/min
Required accuracy	1%
Viscosity at 20 °C	4280 mPas
Density at 20°C	1.32 g/ml
Operating temperature	20 – 30 °C

Because the installation height of the unit was not decided at the moment of delivery, the suurDOS® QUADRUPLE has been mounted on a pedestal with adjustable height.



Each dosing has its own, removable dripping pan.