

# Coperion K-Tron K3 Pharma Feeder

Highly accurate feeding solutions for the growing demands of continuous as well as batch pharmaceutical processing

The new Coperion K-Tron K3-PH line of feeders has been specifically designed to meet the growing needs of the pharmaceutical industry. The new feeder design features a modular concept complete with a drastically reduced overall footprint thanks to a new, smaller D4 platform scale incorporating the patented and highly accurate Smart Force Transducer (SFT) weighing technology. The modular quick change design allows the easy exchange of feeder types and sizes as well as hoppers or agitators using the same scale & drive for fast adaptation to new processes and formulations while also ensuring easy cleaning and maintenance. The new design is ideal for multi feeder clustering in a variety of continuous processes, including direct compression (CDC), continuous extrusion, wet and dry granulation, and continuous coating, as well as traditional batch processes.

## Features

Key features of the new modular pharmaceutical feeder design are custom engineered for easier handling, cleaning and product changeover. Highlights of these features include:

- › Quick change modular feeder bowl, agitator and screw combinations which can be quickly decoupled from the feeder drive for ease in changeover and cleaning
- › New compact and robust scale design, ideal for multi feeder arrangements
- › Improved sealing at the feeder bowl and hopper for ideal product containment



- › Interchangeable QT20 and QT35 modules, dependent upon required feed rates and scale resolution
- › New IP65 servo drive with turndown range of 1:1267 for all feed modules and screw speed ranges, eliminating multiple gearbox changes
- › Integral 2 degree pitch to allow for WIP drainage during cleaning
- › Cluster arrangements of 6+ feeders can be easily accommodated, dependent upon the continuous process below
- › Reliable SFT digital weighing with true 1:8,000,000 in 20 ms resolution for accurate feeding even at low feed rates
- › Options include total containment designs and versions for hazardous locations (ATEX and NEC)

## Models & Feed Rates

Volumetric feed rates as noted below, depending on the material (screw speed range 1 - 550 RPM).

- |                          |                                |                                 |
|--------------------------|--------------------------------|---------------------------------|
| › QT20 twin screw feeder | 0.13 - 243 dm <sup>3</sup> /h  | 0.005 - 8.58 ft <sup>3</sup> /h |
| › QT35 twin screw feeder | 1.63 - 2012 dm <sup>3</sup> /h | 0.06 - 71.1 ft <sup>3</sup> /h  |

*Note: Ranges shown include all screw configurations - concave and auger, fine and coarse pitch*

Like other Coperion K-Tron modular feeder lines, the new K3 line of pharma feeders includes a variety of hopper sizes, inlet/outlet configurations and other options such as ActiFlow™ flow aid and Electronic Pressure Compensation to offer a wide range of solutions, tailored to the specific requirements of each application.

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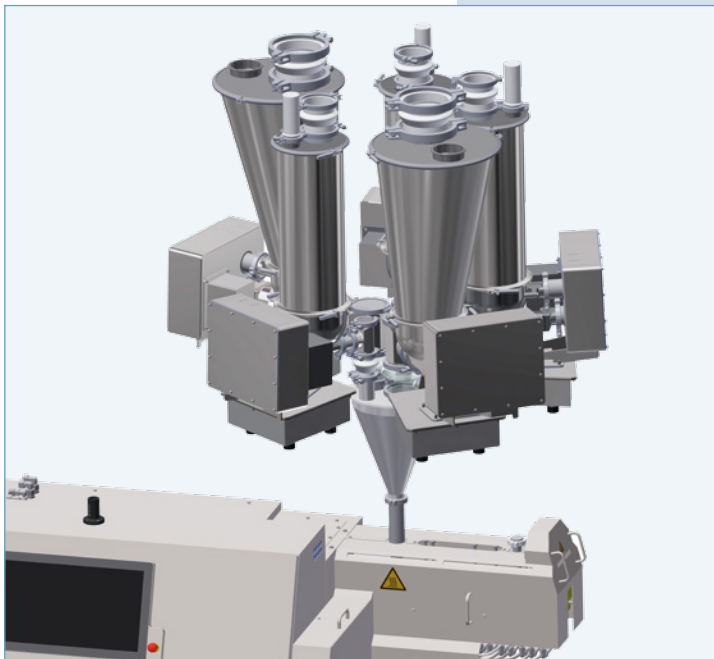
## Process Experience

Coperion and Coperion K-Tron can provide single source solutions for all of your extrusion, feeding and conveying needs in the pharmaceutical and nutraceutical industries. Our complete line of equipment is engineered to meet the rigid requirements of the industry, including strict adherence to cGMP guidelines and standards as well as the use of FDA approved materials of construction. Our expertise in processing even the most difficult to handle excipients and active ingredients has resulted in global recognition of our equipment and engineered services, with a particular strength in providing continuous processing solutions. Our partnerships with pharmaceutical and nutraceutical companies of all sizes continues to grow, resulting in specialized technical solutions such as the new design pharmaceutical feeder, with an emphasis on product and process quality.

Coperion K-Tron's experienced technical engineers are available to discuss your process requirements in detail and recommend specific design options to optimize your process, both in feed accuracy as well as product quality. Design solutions with an emphasis on continuous processing expertise include specialized ergonomic and optimal performance support platforms as well as integration with both upstream and downstream equipment. In addition, Coperion K-Tron's line of customized and integrated pneumatic conveying systems offer optimal refill and consistent mass flow, ideal for continuous operations.

## Validation

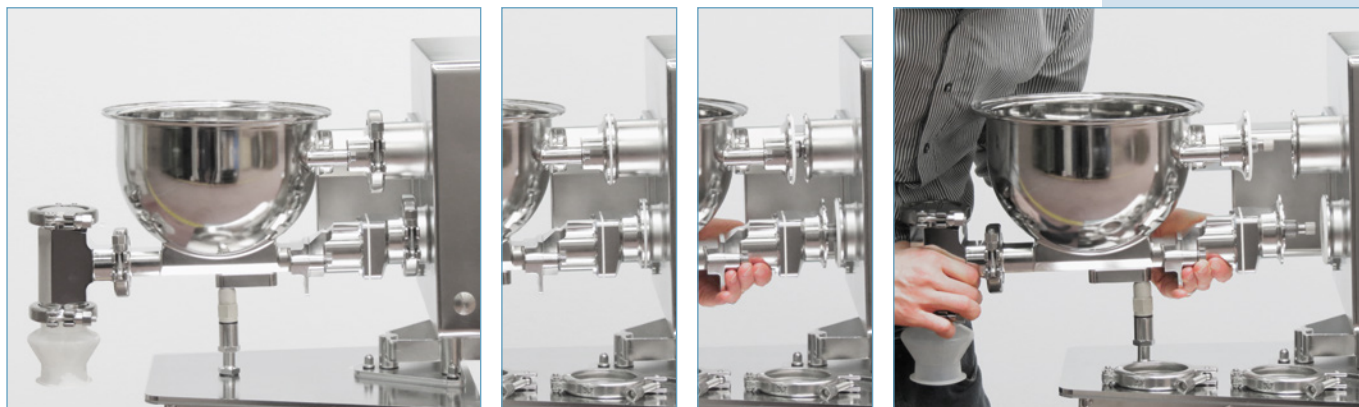
Coperion K-Tron can also provide an extensive array of validation documentation in accordance with the lifecycle approach. These documents include FDS, FAT and SAT-IQ and SAT-OQ. Controls options are available to meet 21 CFR Part 11 compliance and integration with a variety of communications platforms including Modbus, A/B, Device Net, Profibus and others are available.



Five K3-PH feeders clustered over a ZSK extruder inlet.



Five K3-PH feeders on special slide mounts clustered over a continuous mixer inlet.



The new Quick Change design makes decoupling of the feeding unit for changeover or cleaning quick and easy.