

Feed Frame Data Sheet



Expo Process Analytics developed the tablet press feed frame simulator specifically for pharmaceutical manufacturers to mimic tableting production processes without requiring full scale commercial equipment to be utilized.

Models can be developed in the lab setting for NIR or other spectroscopic measurements using small amounts of API in a safe controlled environment away from the manufacturing setting.

The tablet press feed frame simulator is now globally in constant use at multiple leading pharmaceutical facilities. The Feed Frame enables pharmaceutical development hubs to shorten time and cost to develop PAT applications by:

- ▶ Providing a material sparing approach to investigate best spectroscopic technique to use for a specific formulation.
- ▶ Provides a material sparing approach to optimize data acquisition parameters like sampling, acquisition rates and scan parameters for specific instruments.
- ▶ Reduces the use of expensive API by avoiding commercial scale experiments.
- ▶ Provides a safe environment to experiment with powder materials.
- ▶ Run tests without the use of cGMP equipment.



The Feed Frame is comprised of five main parts:

1. The measurement chamber.
2. The drive housing for the rotational Spider Wheel.
3. The Spider Wheel (various designs available).
4. Precise probe positioning interfaces for several common spectrophotometer types.
5. A bottom exit valve capable of precise control of the bottom exit cavity size enabling flow through work.

The Feed Frame simulator can be supplied with spider wheels that mirror the wheels in a range of tablet press types. The ability to swap out these wheels, aids the simulator to more accurately represent different brands of commercial press.

The system is fully compliant for industrial safety regulations. The optical probes and spectrometers are supplied separately by specialist manufacturers.

Technical Specifications

The Feed Frame comes in a Compact and Standard size. The systems structural frame allows safe, easy access and ergonomic operation.

Contact Materials	316L stainless steel	
Finish	Highly polished 0.4RA / 0.8RA	
Spider Wheel Design	5 design options see below.	
Usual Run Speed Range	15-50 RPM	
Expected Average Run Speed	25 RPM (Max 100RPM)	
Ambient Temperature Range	+10°C to +40° C	
Supply Voltage	100-240V AC	
Supply Frequency	50Hz	
Rated Power	300-500W	
Dimensions Standard (Compact)	Height	120cm (80cm)
	Width	75cm (75cm)
	Depth	60cm (60cm)

Probe Types and Sizes

Probe Diameters	12-32 mm / 0.5-1.5 inches
Minimum Probe Length	200mm
Probe Configuration	Allows up to 2 probes for synoptic measurement.
Supported Probe Types	NIR / RAMAN / LIF / UV

Common Probe Configurations

1. Single NIR probe housing.
2. Single RAMAN probe housing.
3. NIR and RAMAN probe two-probe housing.
4. Laser Induced Fluorescence probe housing.

Software and Analysis

The Feed Frame can be run in standalone mode or with integrated data collection, aggregation and analysis platform via software provided as an option at purchase.

Simulation parameters for the Feed Frame are:

- ▶ Wheel rotation speed and direction
- ▶ Wheel Finger size
- ▶ Wheel Finger shape

Spider Wheel Options

MSI-000-008



Notch Location:
Radius 48.75mm – 78.75mm (30mm)
Finger Base Height:
10mm
Notch Depth: 5mm
No. of Fingers: 8
Finger Thickness: 5mm

MSI-000-021



Notch Location: Radius 48.5mm – End (41.5mm)
Finger Base Height:
12mm
Notch Depth: 5mm
No. of Fingers: 12
Finger Thickness: 6mm

MSI-000-022



Notch Location:
Radius 48.75mm – End (41.25mm)
Finger Base Height:
12mm
Notch Depth: 3mm
No. of Fingers: 12
Finger Thickness: 5mm

MSI-000-023



Notch Location: Radius 55.15mm – 76.25mm (21.1mm)
Finger Base Height:
8mm
Notch Depth: 2mm
No. of Fingers: 8
Finger Thickness: 6mm

MSI-000-024



Notch Location: None
Finger Base Height:
N/A
Notch Depth: None
No. of Fingers: 8
Finger Diameter: 5mm



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ATEX CE cGMP