SDx SERIES™

POWDER PROCESSING EXCHANGEABLE PLATFORM

Production-scale interchangeable powder milling and screening

FITZPATRICK®

QUADRO

SDx SERIES™
POWDER PROCESSING EXCHANGEABLE PLATFORM

The Fitzpatrick Company and Quadro Engineering Corp. are part of the IDEX Material Processing Technologies group, and have been trusted partners of the world's top pharmaceutical, chemical and food ingredient processing customers for a combined total of more than 120 years.

This unmatched experience is the fundamental reason why our products and people are recognized throughout the world for the highest standards of professionalism and performance.

SDx Series™ Powder Processing Exchangeable Platform

The SDx Series™ is the most advanced powder milling and screening platform that utilizes one common drive with a series of interchangeable heads. The unique SMARTdetect™ functionality ensures powder processing accuracy / repeatability while reducing capital investment and cost of ownership.

Learn more, page 4.

Choose and changeover the production head quickly and efficiently

The SDx Series™ includes three heads offering conical milling, hammer milling and security screening. Achieve the same validated results you know and trust with the new improved SDx platform with greaseless gearbox.

Learn more, page 6.

Unique SMARTdetect™ technology maximizes production efficiency

SDx SMARTdetect™ technology automatically recognizes the head being installed, and adjusts RPM to the appropriate level for optimum material processing.

Learn more, page 8.

Proprietary screen & impeller options for all powder milling and processing applications

Fitzpatrick and Quadro manufacture the industry's most extensive, and flexible line of conical and hammer milling equipment available. New customers quickly find that it is possible to directly match most applications with a unique screen and impeller combination that is best suited to their powder processing requirements.

Learn more, page 10.

Easily scale from R&D to production with the SLS – Scalable Lab System™

Fitzpatrick / Quadro's SLS – Scalable Lab System™ allows users to easily transfer results from small sample R&D tests to full-scale production. With fully transferable parameters, users can experiment in small scale product development with the reassurance that the same results will be easy to replicate on our SDx production-scale equipment.

Learn more, page 14.

OUR PRODUCTS AND PEOPLE ARE RECOGNIZED THROUGHOUT THE WORLD FOR THE HIGHEST STANDARDS OF PROFESSIONALISM AND PERFORMANCE

REDUCE INVESTMENT
WITH INTERCHANGEABLE POWDER PROCESSING AND PARTICLE SIZE REDUCTION

Introducing the world's most advanced production-scale, multipurpose powder milling and screening platform, utilizing three interchangeable heads on the same common drive. SMARTdetect™ allows for dramatic increases in powder processing efficiency along with reduced capital investment and lower ongoing cost of ownership.

The unique design and technology within the SDx Series™ allows the user to:

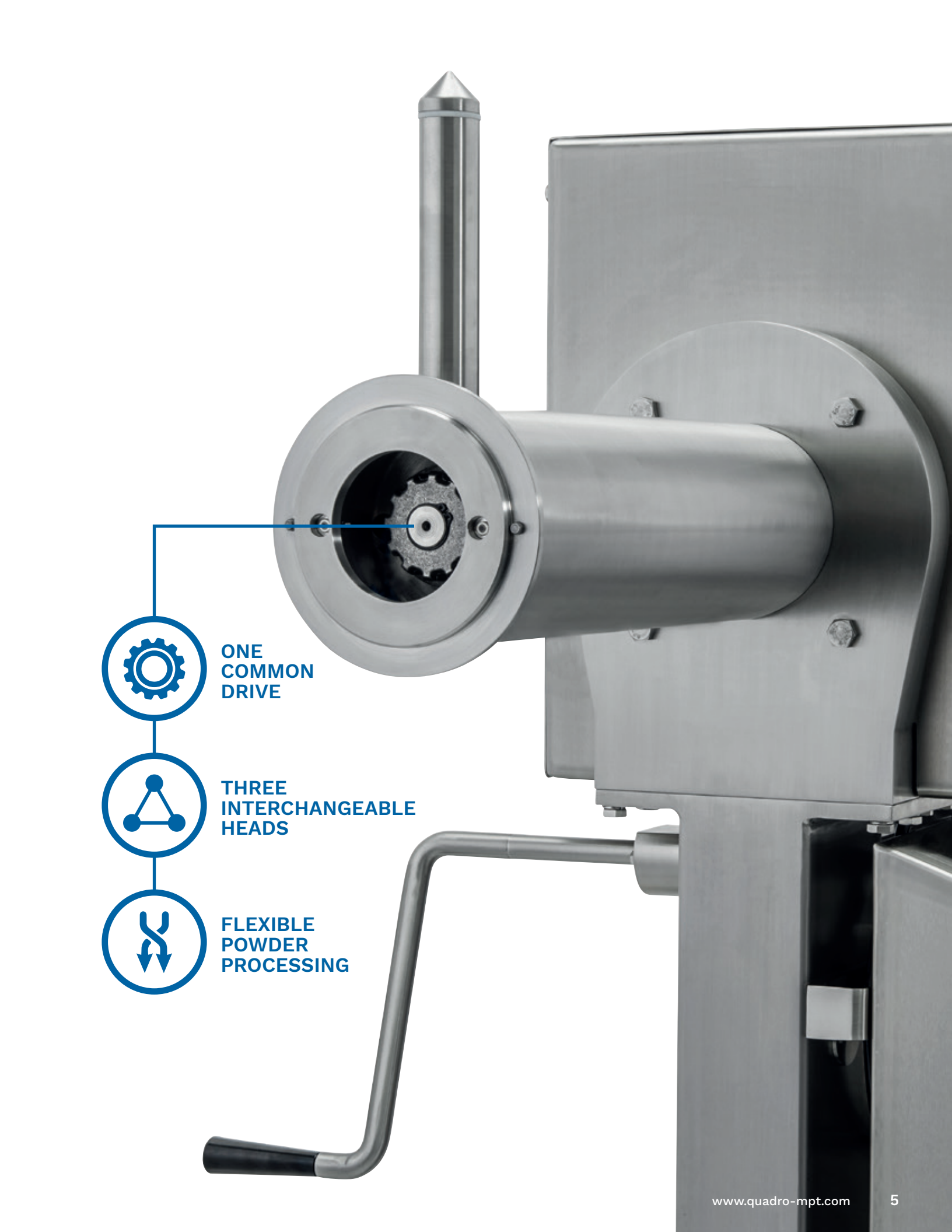
- Quickly change between three powder processes in seconds
- Improve on-target particle size distributions (PSDs) by up to 50%
- Reduce bottlenecks and increase production capacity
- Replace several machines with this single, flexible platform

Operating integrity and reliable results with the greaseless gearbox.

The SDx Series™ common drive platform features an innovative greaseless gearbox design within the U20x and S20x heads. Users gain peace of mind knowing that if there is an unlikely gearbox failure, product integrity is maintained with no possibility of leakage or contamination.

Plus, the greaseless gearbox operates at a far cooler temperature than a traditional constantly lubricated gearbox. This equates to a cooler working environment wherein more consistent results can be achieved with heat-sensitive products.

1. **Powder Processing / Milling Head**
2. **SMARTdetect™ Interface**
3. **Motor**
4. **Control Panel**
5. **Base**
6. **Height Adjustable Stand**


ONE
COMMON
DRIVE
THREE
INTERCHANGEABLE
HEADS
FLEXIBLE
POWDER
PROCESSING

CHOOSE AND CHANGEOVER
THE PRODUCTION HEAD QUICKLY AND EFFICIENTLY

The SDx Series™ features conical milling, hammer milling and security screening heads. Simply choose the head that fulfills your specific application requirements. You'll see immediate improvements in production efficiency with reduced bottlenecks and fast changeovers.

ONE COMMON DRIVE

THREE INTERCHANGEABLE HEADS

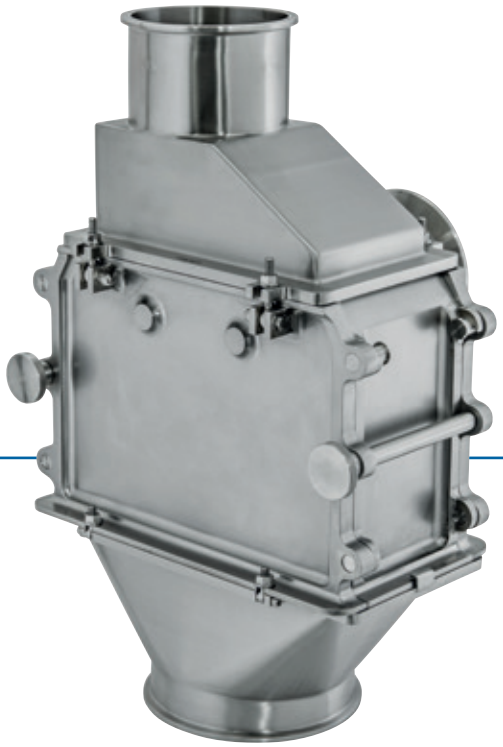
FLEXIBLE POWDER PROCESSING

COMIL® U20x

Conical Milling

- Improves particle size distributions (PSDs) with 20-40% more on-target vs similar technologies.
- Classic U20 screens and impellers are compatible with the new U20x and vice versa, saving on tooling costs.
- Impellers and screens suitable for both standard and clean-in-place (CIP) applications.
- Available with high-efficiency screens (patent pending) for increased capacity and reduced milling heat.

For smaller scale requirements, we also offer the SLS – Scalable Lab System™ which allows users to transfer results from small sample R&D testing to full-scale production.
Learn more, pages 14 and 15.



FITZMILL™ D6Ax

Hammer Milling

- Guarantees full cleanability with very simple disassembly assuring 100% cleaning verification.
- An unmatched selection of screens available (from 50µm) making it possible to process APIs and more difficult products.
- Cooling infeed chamber available for heat-sensitive products.
- Available with variable feed screw for optimized containment and predictability.

FLEXSIFT S20x

Security Screening

- Optimizes security screening: single head can replace up to 7 traditional vibratory sifters.
- Best-in-class performance offering up to 50% capacity over competition.
- Largest capacity range of any centrifugal security screener available.
- Capable of doubling as a gentle delumper without inducing particle size reduction.

UNIQUE SMARTdetect™ TECHNOLOGY MAXIMIZES PRODUCTION EFFICIENCY

The SMARTdetect™ technology built into the SDx Series™ platform allows users to instantly switch heads without the need to manually reset control parameters.

The unique SMARTdetect™ technology automatically detects which type of processing head is attached, and adjusts the platform's RPM range accordingly for the required operating range.

Plus, with the SMARTdetect™ technology and the simple clamp connectivity working together, users can change heads – and production / processing methods – within seconds.

The heads mounted on this versatile SDx Series™ platform give you an unparalleled number of integration possibilities including hammer milling, gentler conical milling, high-efficiency conical milling and security screening. For more information on the heads available, **see pages 6 and 7**.

SMART detect™

SMARTdetect™

Our SMARTdetect™ technology gives you failsafe reassurance that the correct processing method is selected automatically. With SMARTdetect™, milling and screening operations can't go wrong.

- **Unique hardware / software technology**
- **Automatically detects which processing head is selected**
- **Sets RPM for repeatable and reliable material processing requirements**

FITZPATRICK AND QUADRO'S COMBINED EXPERTISE HAS RESULTED IN BUILDING INNOVATIVE FEATURES INTO THIS REVOLUTIONARY PROCESSING PLATFORM

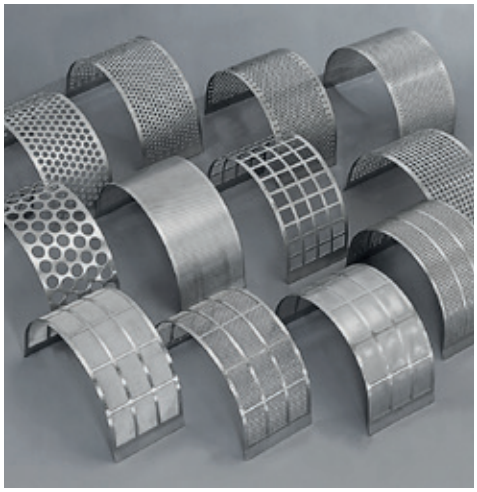
SMART
detect™

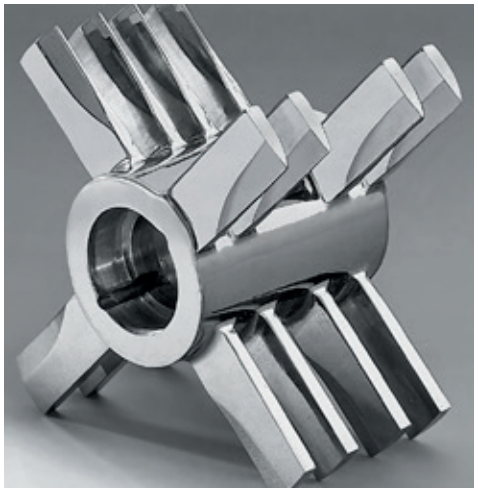
SCREEN & IMPELLER / ROTOR
OPTIONS FOR ALL POWDER MILLING AND PROCESSING APPLICATIONS

Fitzpatrick and Quadro manufacture the industry's most extensive, and flexible line of conical and hammer milling equipment available.

Customers quickly find that it is possible to directly match every application with a unique combination of screen and impeller / rotor to solve their powder processing requirements.

Our extensive knowledge of setting the optimum parameters for both milling and screening means we can handle just about any application requirement.





Range of screens

An extensive selection of screen types and sizes accommodates most particle size requirements. Screens are available with openings as small as 0.150mm (0.006”), and as large as 38mm (1.5”). Screen choices are extended further with options for round or square perforations, wire mesh or for grater or Conidur holes.

Types of Comil® impellers

Dozens of different profiled impellers can be used to suit the specific application requirements. Basic options include round arm, square arm, or beveled arm impellers. More aggressive profiles are also available. Impellers can be further enhanced with available special finishes and add-ons.

Configurable FitzMill™ rotor options

Our wide range of rotor configurations enable us to achieve the desired particle size distribution for your specific process. These uniquely configurable options can solve most powder processing requirements and achieve the tightest PSDs of any hammer mill manufacturer.

DELIVERING THE INDUSTRY’S MOST EXTENSIVE LINE OF API MILLING, ORAL SOLID DOSAGE AND POWDER PROCESSING EQUIPMENT

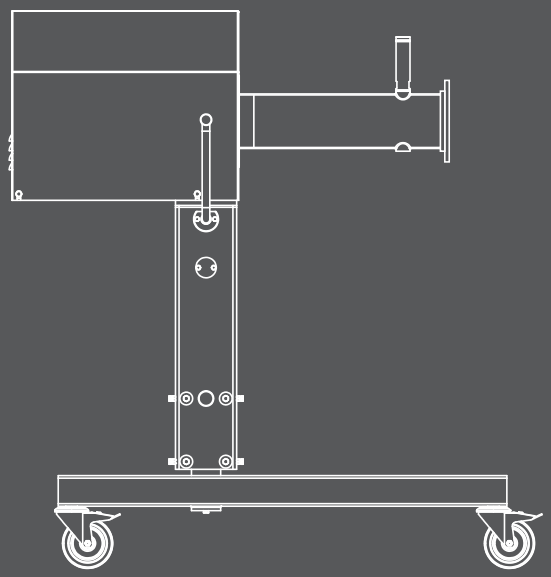
TECHNICAL OVERVIEW
FOR THE SDx PLATFORM

The SDx Series™ has been designed with the user in mind. Simple to maintain, with fewer parts to remove during cleaning cycles, it maximizes uptime and reduces your total cost of ownership (TCO).

COMMON DRIVE PLATFORM

Size dependent upon customer application needs.

General Capacities
Power
Noise
Height to Discharge (H)
Height to Inlet (H2)



* Capacity is dependent upon product characteristics, final PSD target and equipment set-up. For some products, capacities have been known to exceed 7000 kg/hr for milling, and 25,000 kg/hr for FlexSift applications.

The innovative greaseless gearbox

Our greaseless gearbox on the U20x and S20x maintains product integrity with no possibility of leakage or contamination. The gearbox operates at cooler temperatures than a traditional lubricated gearbox, meaning heat-sensitive products can now be processed with more consistent results.

Unmatched screen and impeller combinations

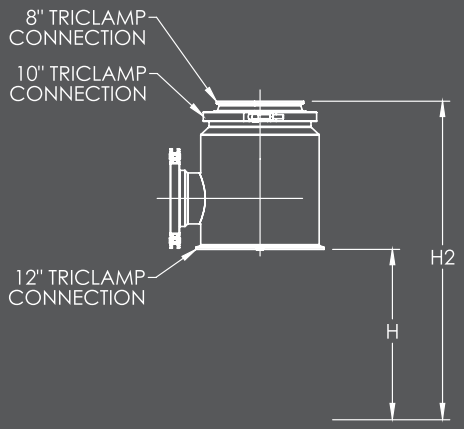
With over 200 screen types and dozens of different impellers and rotors available, the SDx Series™ allows users to process virtually any type of product with ease and peace of mind. This unmatched range of customizable options reflects our market-leading position.

Flexibility and compatibility with older products

Screens & impellers for the current U20 and S20 are also compatible with the new SDx heads and vice versa, so tooling requirements are simplified.

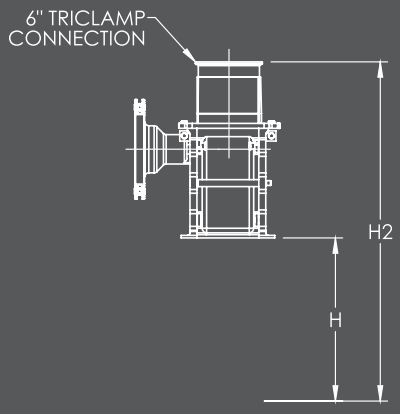
U20x

kg/hr	up to 3000*
kW	5.6
dB	<75
mm	990
mm	1360



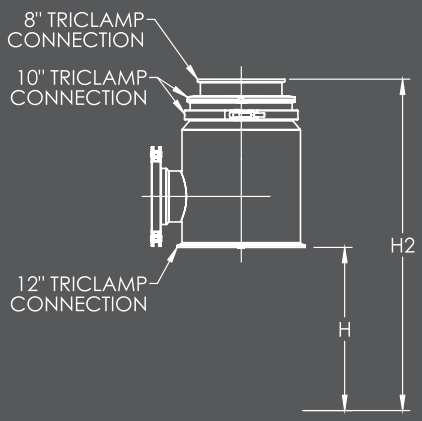
D6Ax

kg/hr	up to 3000*
kW	5.6
dB	<80
mm	896
mm	1391



S20x

kg/hr	up to 10,000*
kW	5.6
dB	<75
mm	990
mm	1409



Accreditations

SCALABLE SOLUTIONS
FROM R&D TO PRODUCTION WITH THE SLS – SCALABLE LAB SYSTEM™

With the ability to alternate between five powder processing solutions in seconds, the SLS – Scalable Lab System™ allows users to make a fast, simple transition between different technologies and be able to select the most suitable platform.

Customers that are developing new product lines need to guarantee the easiest path from product research and development through to final production. The SLS – Scalable Lab System™ now makes the new product development path as simple as possible.

The four heads offer five different powder processing solutions that all directly scale between testing and R&D size samples to full-scale production without the need for changes in parameters.

Material processing technologies and primary size reduction capabilities are all incorporated into the SLS, making it the ideal material processing technology for security screeners, hammer mills and conical mills.

SMART detect™

SMARTdetect™

Our SMARTdetect™ technology provides users with failsafe reassurance that the correct processing method is selected automatically. With SMARTdetect™, milling and screening operations can't go wrong.

- **Unique hardware / software technology**
- **Automatically detects which processing head is selected**
- **Sets RPM for repeatable and reliable material processing requirements**

Main benefits of Fitzpatrick / Quadro's SLS – Scalable Lab System™

Unparalleled scalability:

PSD and capacity scalable with simple operating parameters transfer from small-scale R&D tests to full-scale production.

Widest range of sample sizes:

Process samples as small as 5 grams or more than 100 kg/hr (Note: Results are product dependent and achieved with specific head attachments only).

Fast application conversion:

Easily switch between five powder processing solutions in seconds using SMARTdetect™ and standard simple clamp fittings.

Highest flexibility with minimal capital investment:

Single platform with exchangeable heads permits selection between a range of optimal powder processing technologies on one platform.

Improved cleaning requirements:

The single SLS platform with exchangeable heads replaces the need for several, dedicated machines. The removal of the head facilitates cleaning only the product contact components, whilst leaving the drive enclosure in-situ.

INNOVATIVE PRODUCTS
BACKED BY WORLD-LEADING EXPERTISE AND SUPPORT

The Fitzpatrick Company and Quadro Engineering Corp. have earned the respect of customers for a combined period of over 120 years.

With over 40,000 equipment installations worldwide, discover what underscores our reputation for supplying high quality powder processing equipment solutions. Trust us to fulfill your specific application requirements.

Discover and experience the Fitzpatrick / Quadro difference!

- **Headquarters**
- IDEX MPT Centers of Excellence

Representation in over 80 countries worldwide

IDEX Material Processing Technologies

FITZPATRICK	QUADRO	MATCON	Microfluidics
Dry Granulation Hammer Milling	Conical Milling High-Shear Mixing	Lean Powder Handling Batching, Mixing & Packing	High-Pressure Fluid Processing

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