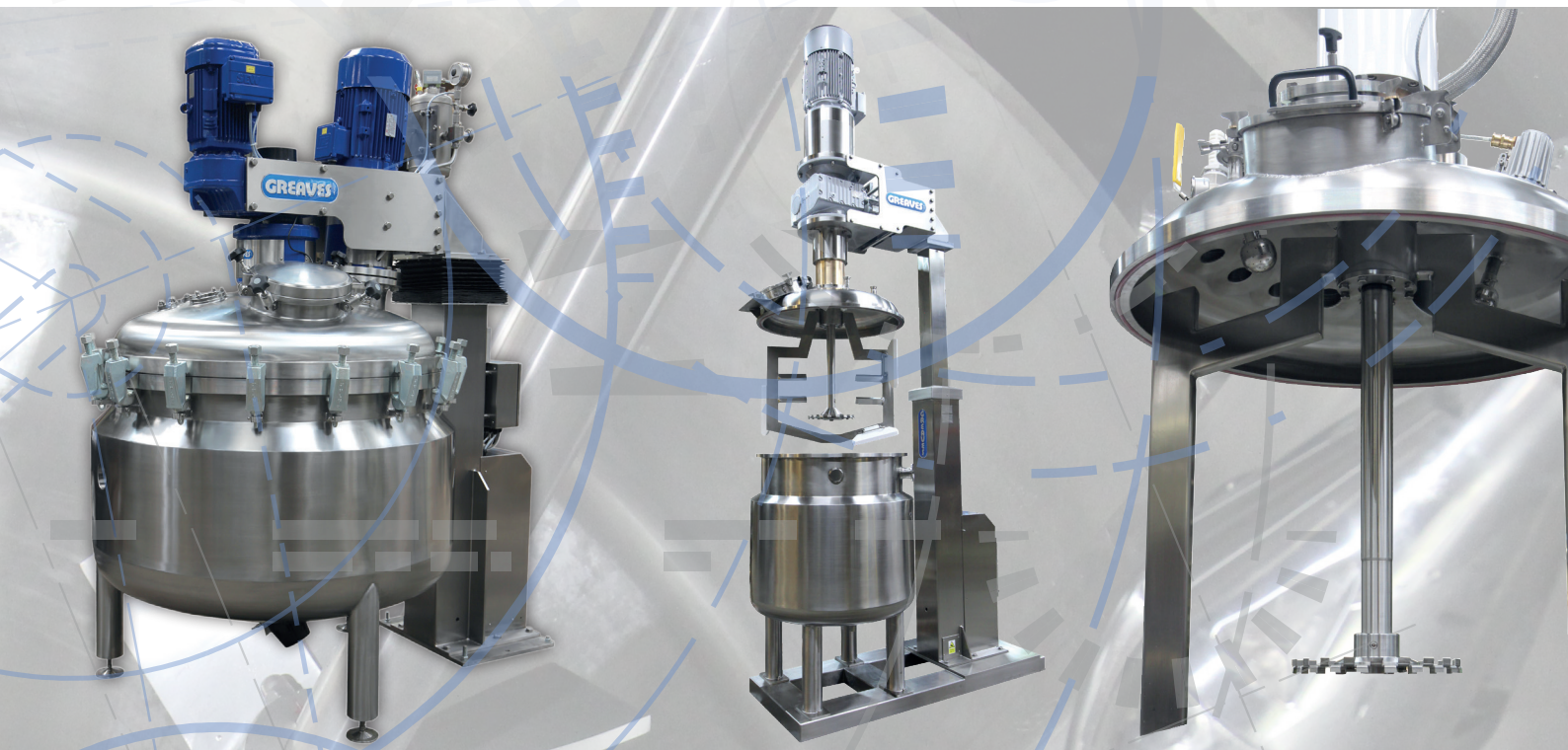


High Performance Mixing For Pharmaceutical, Healthcare & Food



HIGH SPECIFICATION SYSTEMS

Why High Performance Mixing?

Manufacturers with challenging products and processes require high performance mixing solutions designed to meet their specific requirements.

This typically involves high volume / high value products where process efficiency and product performance and consistency are key.

These products often have unique properties that require an equally unique manufacturing process.



Challenges

- Abrasive & Corrosive materials
- High Viscosity
- Harmful / Flammable fluids & powders
- Low Shelf Life/ Unstable components
- Product Specification & Consistency
- Critical Heating / Cooling / Pressure Cycles
- Cleaning / contamination
- Integration with existing processes

Why Greaves?

Greaves customers invariably know their products, processes and markets better than anyone. They will have set out their goals and objectives at the outset of a project, but may not be fully aware of opportunities offered by the latest mixing technologies.



Requirements

- 100% conformance to product specification
- Consistent High Productivity
- Batch traceability
- Hygiene & Biosecurity
- Operator & Product Safety
- Automation for Minimal Operator input
- Integration with other processes



This is where Greaves engineers can make an impact with their up-to-the-minute knowledge and application insight. We know what works elsewhere and what doesn't.

With your team and ours working effectively together, we create designs that deliver maximum flexibility and productivity.

HIGH VOLUME HEALTHCARE - COSMIX®

CosMix® is a versatile system designed to manufacture a wide range of healthcare and cosmetic products.

Specific Challenges include:

- Oil in Cold Water Emulsions
- Fine Powders in water eg Carbopol, Xanthan Gum, Starch, Sorbitol
- High Viscosity Range 1-250,000 mPas
- Frequent changes between widely varying product types



Technical Features & Capabilities:

- Direct injection of powders and liquid additions into high shear dispersion rotor
- Up to 4 independent Mixing tools
- High Shear Bottom Entry Rotor Stator with recirculation
- High Speed Disperser
- Incorporator turbine
- Helical Anchor
- Vacuum de-gassing & Positive Pressure Reactor
- Fully isolated heating and cooling jacket
- Multi-jet high intensity cleaning system
- 0.5Ra polished 316L stainless steel free of residue traps
- Touch screen programme controller
- Weighing and Batch Recipe System



Joshua Greaves & Sons Ltd.

Atlas Engineering Works, Garden Street, Ramsbottom, BL0 9BG

Tel: 01706 82 4191 | Fax: 01706 82 3000 | Email: info@greaves.co.uk | Web: www.greaves.co.uk

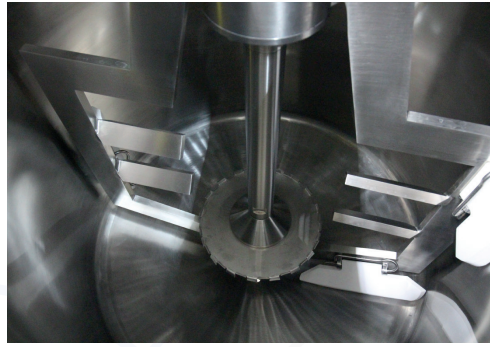
Version-V-601-HPM-090519

MULTI-BATCH PHARMACEUTICAL - VISCOSHEAR®

ViscoShear® is designed to manufacture small and medium sized batches of high viscosity pharmaceutical pastes and gels.

Specific Challenges include:

- Quick Batch change
- Short cycle time - rapid heating and cooling
- Fine Powders in water eg Carbopol, Xanthan Gum, Starch, Sorbitol
- High Viscosity Pastes and Gels → 100,000 mPas
- Diverse product range



Technical Features & Capabilities:

- Electro-hydraulic lift for complete removal of mixing tools
- Vacuum/Pressure rated Mobile tanks with heating/cooling jackets
- Twin independent Mixing tools
- High Shear Top Entry Rotor Stator
- Helical Anchor
- Fully isolated heating and cooling jacket
- Multi-jet high intensity cleaning system
- 0.5Ra polished 316L stainless steel free of residue traps
- Touch screen programme controller
- Weighing and Batch Recipe System

FLEXIBLE BATCH BLENDING - FLEXIBLEND

Across a number of product categories manufacturers employ processes that use stock blends of high viscosity components. FlexiBlend is designed to rapidly blend and maintain these components at optimum working temperature and viscosity.

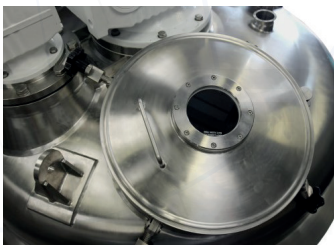
Specific Challenges include:

- Rapid increases and decrease in temperature
- Robust design, resilient to thermal stress
- Easy clean
- Diverse product mix

Technical Features & Capabilities:

Fully isolated steam heating and water cooling-jacket

- Twin independent Mixing tools
- Incorporator turbine
- Helical Anchor
- Spray ball cleaning system
- 0.5Ra polished 316L stainless steel free of residue traps
- Touch screen programme controller
- Weighing and Batch Recipe System





FLUID PROCESSING SOLUTIONS



Joshua Greaves & Sons Ltd.

Atlas Engineering Works, Garden Street, Ramsbottom, BL0 9BG
Tel: 01706 82 4191 | Fax: 01706 82 3000 | Email: info@greaves.co.uk | Web: www.greaves.co.uk

Version-V-601-HPM-090519