

Mixers & Agitators for Industrial Applications

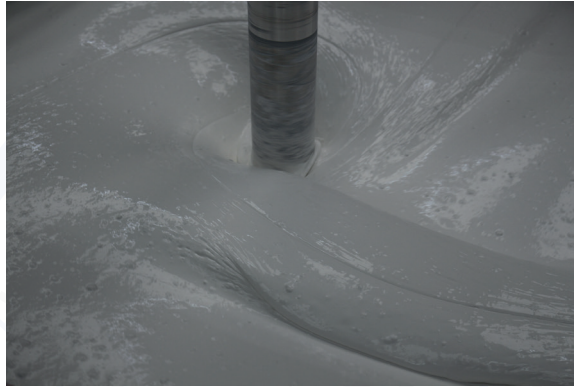


MIXER OR AGITATOR?

What is the difference between a mixer and an agitator?

The purpose of a mixer is to rapidly blend two or more components which may be liquid/solid or liquid/liquid and are often difficult to combine. Resultant mixtures may be dilutions, pastes, creams, emulsions or suspensions.

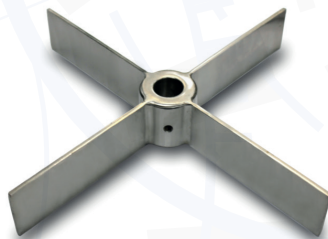
An agitator is generally designed to maintain equilibrium and homogeneity in an existing mixture, suspension or emulsion. A common application would be storage of bulk product prior to packaging or further processing.



Serrated Impeller Options



RADIAL FLOW RCI



RADIAL FLOW FBT



AXIAL FLOW MTP



AXIAL FLOW PBT

Key features and benefits:

- Suitable for a wide variety of applications
- Energy and cost efficient
- Easy to clean
- Low wear, low maintenance
- Highly reliable
- ATEX variants to Zone 0 & Zone 20
- Abrasive and corrosive resistant options
- High pressure & Vacuum shaft sealing options

MIXERS & AGITATORS

For low viscosity fluids up to 3000L, the most appropriate solution is commonly a fixed mounted direct drive mixer or agitator.

Direct drive delivers high tip speed to a small impeller which creates intense local mixing and mass flow throughout the vessel.

Successful mixing and agitation of large volumes at high viscosity requires the use of large diameter impellers at a reduced shaft speed.

For these applications Greaves offers a range of geared drive fixed mixers and agitators with multiple impeller geometries.

It is vital to select the correct impeller design and configurations to generate both mixing and mass flow in each process.

GFLH Type



FDM Type



FDM Type



Model Range	Typical kW	Drive type	Shaft seal options	Speed (RPM)	Capacity** (Litres)	Viscosity Range
SDD	0.12kW to 4kW	Direct	None	960-1500	10-3000	low
SGD	0.12kW to 11kW	Geared	None	5-350	10-2000	med-high
FDM	0.12kW to 4kW	Direct	Lip, Mech or Gas	960-1500	10-3000	low
FGM	0.12kW to 11kW	Geared	Lip, Mech or Gas	5-350	50-3000	med-high
GFLH	0.12kW to 75kW	Geared	Lip, Mech or Gas	5-350	50-20000	med-high
WGH	0.12kW to 75kW	Geared	Lip, Mech or Gas	5-350	50-20000	med-high
GKS	0.75kW to 75kW	Geared	Lip, Mech or Gas	5-350	500-300000	med-high
GST	0.75kW to 75kW	Geared	Lip, Mech or Gas	5-350	500-300000	med-high

**The Capacities shown indicate the maximum batch quantity at the maximum viscosity (30,000cps) and minimum viscosities.



GFLH Type

Benefits:

- Simultaneous mixing and agitation
- Easy cleaning, hygienic construction
- Low wear, low maintenance
- Energy efficient, low running costs

Options:

- Variable Speed with digital display
- Electric or pneumatic drive
- Additional impellers for increased surface mixing
- Side entry mounting
- In tank couplings to ease installation
- Vertical or right-angled drive
- Full Vacuum de-gassing / Pressure processing
- ATEX variants to Zone 0 & Zone 20 IIC T4

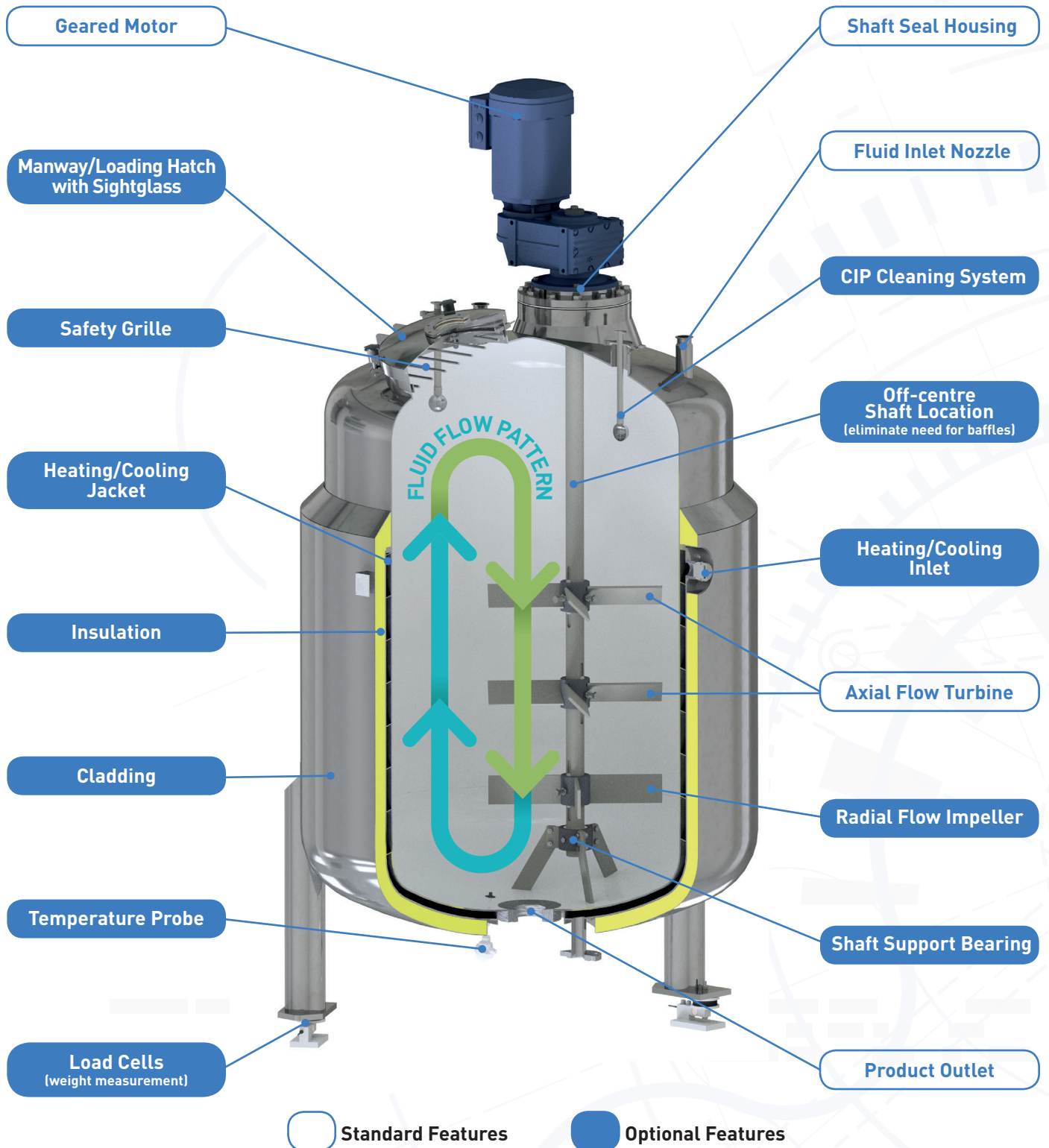
Joshua Greaves & Sons Ltd.

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

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FEATURES & OPTIONS



"CHANGE-PAN" BATCH MIXERS

Where batch sizes are small ($\leq 1500\text{L}$) or recipes vary widely, a "Change-Pan" station may be the best mixing solution. This system comprises of a fixed mixing station with multiple mixing vessels.

Greaves offers a comprehensive range of "Change-Pan" solutions for processes ranging from ambient temperature blending to complex ATEX pressurised reaction processes.



**Parallel Motion Lift
(PML)**



**VLS-5 Pressurised
Electro-Hydraulic Lift
(EHL)**

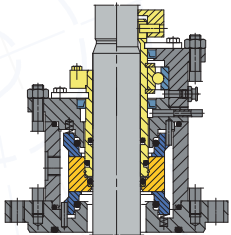


**VLS-30
Electro-Hydraulic Lift
(EHL)**

SHAFT SEALING OPTIONS

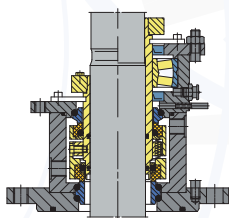
Shaft seal selection is a critical factor in specifying any mixing system. Greaves offers a comprehensive range of high performing seal options to meet the most demanding process requirements.

NON CONTACTING GAS SEAL



- Variant for sterile applications available
- Fully Contactless
- Liquid Lubricant Free
- High Shaft Speed
- Pressure: Full Vacuum 6 bar
- Temperature -20°C to +150°C

HT LIQUID LUBRICATED SEAL



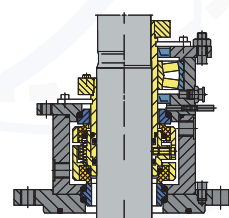
- Food & Beverage, Chemical
- Liquid Matched to Process
- High Temp Option
- Pressure: 16 bar rating for double seal
- Temperature -40°C to +350°C (possible with cooling flange)

DRY RUNNING COMPACT SEAL



- Pharma, Food & Beverage, Chemical
- Light to Moderate Duty Mixing
- Dry Running, Liquid Lubricant Free
- Pressure: Full Vacuum 6 bar
- Temperature -20°C to +150°C

DRY RUNNING HD SEAL



- Pharma, Food & Beverage, Chemical
- Heavy Duty Mixing
- Dry Running, Liquid Lubricant Free
- Pressure: Full Vacuum 6 bar
- Temperature -20°C to +150°C

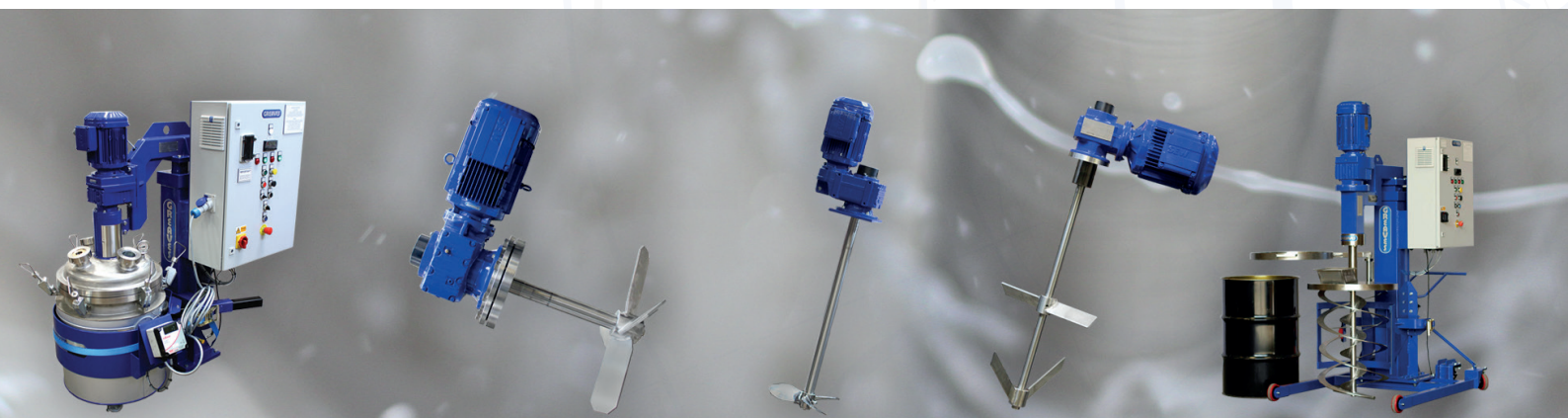
HIGH PRESSURE LIP SEAL



- Pharma, Food & Beverage, Chemical
- High Pressure Processes
- Dry Running, Liquid Lubricant Free
- Pressure: Full Vacuum 8 bar
- Temperature -20°C to +180°C



FLUID PROCESSING SOLUTIONS



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