

LIGHTNING[®] Plenty

SPX Process Equipment

Side Entry Mixers



The Total Solution for Side Entry Mixing

Lightnin is the world leader in fluid mixing technology. Plenty is the market leader for side entry mixers. Lightnin and Plenty have combined their capabilities to offer the most comprehensive range of products and solutions for side entry fluid mixing applications. This unique combination of application experience, sales and service support, means that there can only be one choice for your next side entry installation.

Application Experience

Lightnin and Plenty have long been active in the key side entry markets of oil, edible oils and paperstock. With a combined experience of over 130 years, it is unlikely that a solution to a mixing problem has not already been found, for these markets or any other process area where use of a side entry mixer is needed.

Lightnin Plenty Side Entry Mixers for the Oil Industry

An efficient and reliable solution for all oil refinery and tank farm mixing and cleaning requirements.

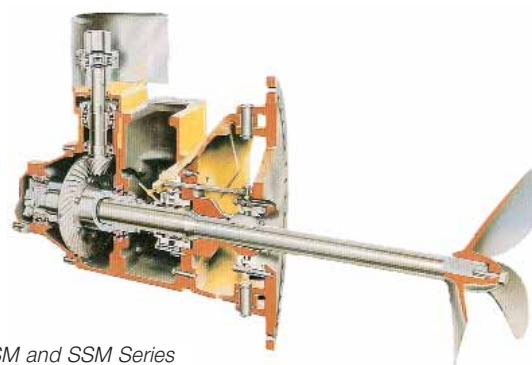
Gear Drive Mixers

■ Fixed Angle

For blending, homogenising and temperature uniformity duties

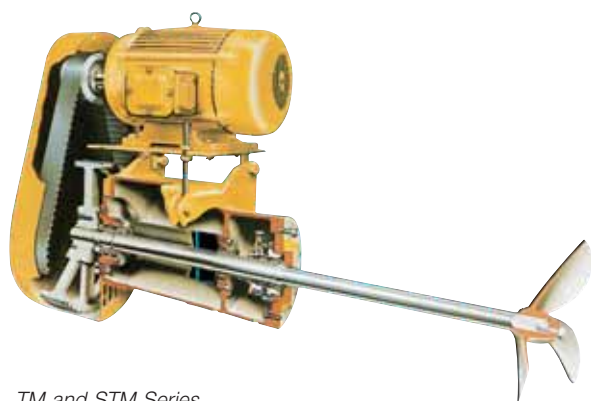
■ Swivel Angle

For tank cleaning operations and the prevention of harmful sludge build-up.



SM and SSM Series

Belt Drive Mixers

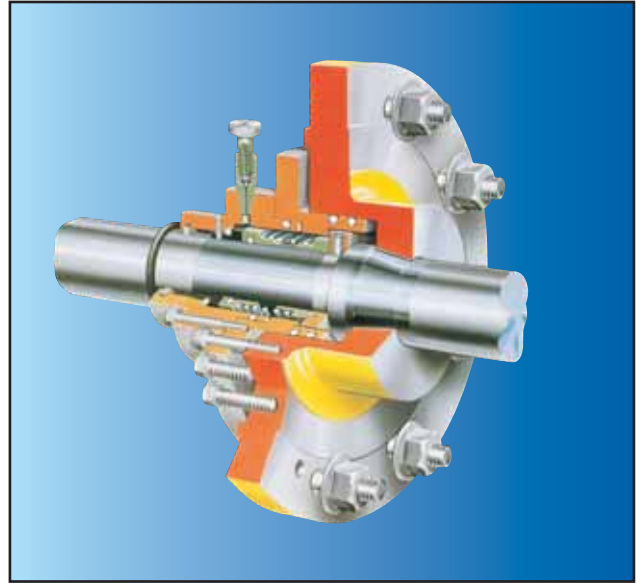


TM and STM Series

- Over 40 years operational experience
- Rugged heavy duty design for extended service life
- Minimum maintenance requirements
- Positive tank shut off device
- High efficiency cast impeller
- Gear or belt drive options
- Automatic swivel options



*Fixed Angle Mixers
Installed in a refinery for a blending application.*



Side Entry Mixer "fail safe" tank shut off device



*Swivel Angle Mixer
...with automatic actuator for continuous sweep of the tank floor in BS&W control applications. The version shown has a separate electric motor drive and castor wheel support. Also available with power take off drive and sling support from the wall tank.*

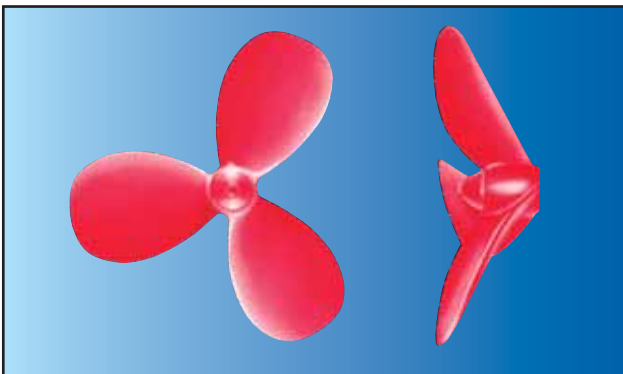
- Permits bearings and mechanical seals to be changed under full tank conditions.
- Tapered metal seal faces which are wear and corrosion resistant.
- Fail safe check valve - ensures full sealing and isolation of tank contents prior to maintenance and strip down.
- Materials which deform or perish with time (such as flexible 'O' rings) are not used in the Lightning Plenty design.
- 100% reliability for safe 'live' seal and bearing changes.

Advanced Impeller Design

Specifically designed for oil industry applications

- High pumping
- High thrust
- Minimum power draw
- No cavitation
- Solid reliability

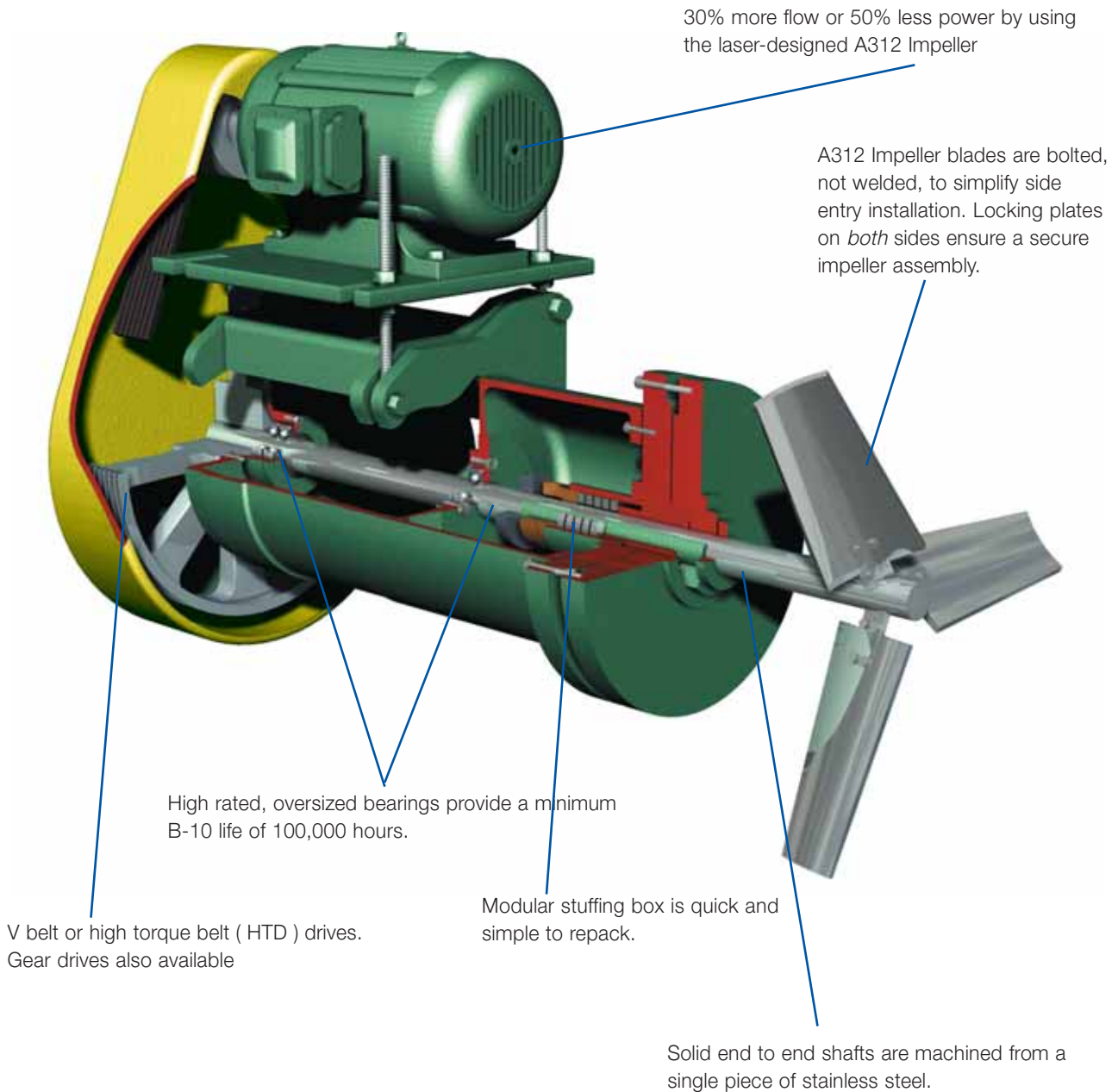
The forward rake variable pitch design was developed to provide a concentrated flow stream with full reach across large oil industry blending and storage tanks.



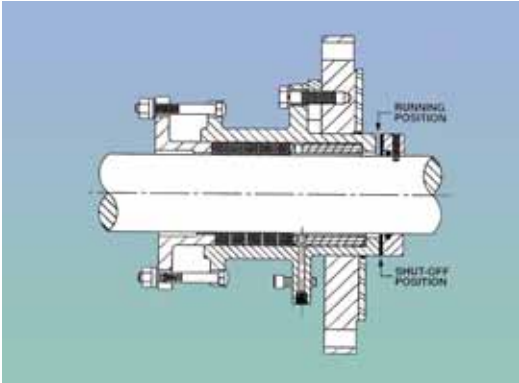
Rugged and Efficient Paperstock Agitators

Lightnin Plenty have long been involved in introducing innovative products and ideas that have benefited users in the paper industry over the last 70+ years in the business.

VS and TM Series for flange mounting



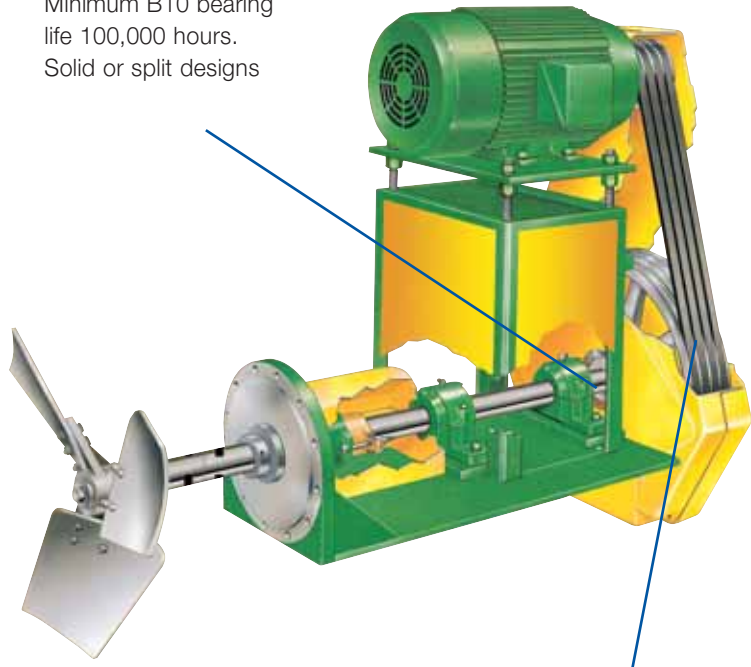
VSA Series pillowblock design



Stuffing box removable from mounting flange

- Custom Wall Inserts
- Quick and easy shut off

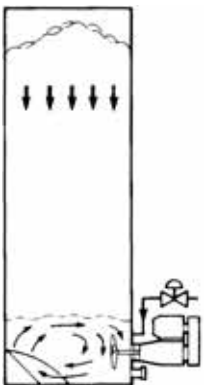
Minimum B10 bearing life 100,000 hours.
Solid or split designs



A312 Impeller

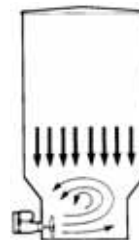
V belt drive

Typical Applications



High density downflow bleach towers

- Eliminates circular inserts, centre cone and dilution nozzles associated with other bleach tower designs.
- Efficient, economical, energy saving.
- Uniform stock consistency
- No clogged pump suction lines
- Capable of operating on tower sizes up to 7 m

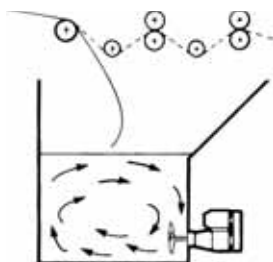


Reduced bottom storage towers and blow tanks

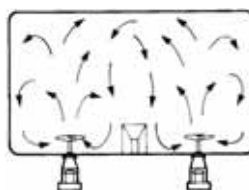
- Developed by Lightning Plenty to maximize agitator performance.
- Reduces energy and capital costs.
- Design successfully applied to towers containing over 1000 tonnes of stock.

Propeller type couch and press pit pulpers

- Capital and maintenance cost saving compared to horizontal cross shaft arrangement.
- More reliable pulpin.
- Eliminates blocked stock.
- Can operate up to 45% consistency, press broke.



Stock chest agitation without midfeather walls



- Complete chest agitation, improved uniformity.
- Improved quality and increased productivity.
- No costly midfeather walls.
- Lower capital cost.
- Operates successfully at over 150 tonnes of stock at 5% bd consistency
- Retrofit capability for existing midfeather systems.

The Optimal Solution for Edible Oils, Chemical Processing and Waste Treatment



TM Series Mixer. Inclined installation - edible oil blending

All side entry mixer applications require high flow efficiency in order to meet one or more of the following criteria:

- Homogenizing (prevention of stratification)
- Blending (within specific time frames)
- Prevention of solids build-up
- Promotion of heat transfer

In addition to oil and paperstock applications other key areas for side entry mixers include:

Edible Oils

Agitation is needed to maintain "foots" (seeds or husks) in suspension.

A uniform product draw-off for efficient down stream operations is required.

Mixers are also required to prevent stratification and to aid heat transfer.

Lightnin Plenty have a range of belt and gear driven side-entry mixers from 0.18 kW to 40 kW which will suit all required permutations.



LREs Series Mixer with Lightnin A510 impeller: rugged, reliable, flexible





Lightnin Plenty LRES side entry mixer with independent mounting on glassed steel sludge tank.

Waste Treatment

Side entry mixer applications in waste treatment include sludge holding tanks.

Lightnin Plenty offer a range of belt and gear driven units to suit the specific needs of this process.

Mixers equipped with the high efficiency Lightnin A312 impeller designed to operate at sludge viscosities up to 3,000 cp.(up to 7% dry weight sludges), with:

- Independent mounting arrangements to allow operation with glassed-steel tanks
- Mechanical seal options with hard faces to operate with high grit concentrations in the sludge
- Easy to operate shut-off devices
- Continuous duty low maintenance designs

Chemical Processing

Side entry mixers are used to combine additives and achieve uniformity. This routinely includes handling fluids with moderate viscosities, requires shorter blend times in smaller tanks compared to crude oil applications.

This makes the Lightnin Plenty range of EVS, LSS and TM/SM units equipped with the specifically designed A312 and A510 side entry impellers, the ideal choice for all general chemical applications

Lightnin Plenty's extensive experience in supply of fluid mixers to the chemical processing industries, ensures that side-entry mixer users will benefit from the knowledge and understanding of quality, performance, and on time delivery issues.



LRES-Series Mixer with Lightnin A510 impeller, rugged, reliable, flexible

Industry and application selection guide

		Belt Drive	Gear Drive
Oil:	Crude Storage, Bottom Sludge and Water Control, Crude Oil / Petroleum Product Blending Maintaining temperature Uniformity / Homogeneity	STM TM TM	SSM SM SM
Edible Oil:	Tank Bottom Sludge Control Maintain "Foots" (Seeds / Husks) in Suspension Blending / Temperature Uniformity / Stratification Prevention	STM TM / TMH TM / TMH	SSM LSS / SSM / SMH LSS / SSM / SMH
Pulp & Paper	Reduced Bottom Storage Towers and Blow Tanks Couch and Press Pit Pulpers High Density Downflow Bleach Towers	VSA / VS / TM VSA / VS / TM VSA / VS / TM	VSA / VS / SM VSA / VS / SM VSA / VS / SM
Chemical:	Combine Additives and Achieve Uniformity	EVS / TM / TMH	LRES / LSS / SM
Waste Treatment	Sludge Holding Tanks	EVS / TM / TMH	LRES / LSS / SM

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