LIGHTNIN
TOP ENTRY MIXERS
Series 10

THE LEADERS IN
mixing technology
LIGHTNIN'S field-proven Series 10 is no ordinary mixer. In thousands of installations and hundreds of applications worldwide, Series 10 mixers provide a superior combination of value and performance.

**Durable, Versatile, Cost Effective.**

- **Dry-well construction.** Elimination of submerged seals and split lines prevents oil leakage.
- **High strength safety cover.** Oil can be checked or replaced without removing the cover.
- **Case hardened helical gears** for high efficiency, long life and low noise levels.
- **Wide range of output speeds** for maximum process flexibility.
- **Open and closed-tank** models are available.
- **Comprehensive choice of shaft sealing options,** including mechanical seals, stuffing boxes and lip seals - to match the widest range of applications.
- **Choice of DIN or ANSI mounting flanges,** to fit most vessel connections.
- **Integral motor** - no shims, no alignment problems.
- **Compact design.** Fewer parts than comparable units simplifying installation and maintenance.
- **Long shaft design capability** without the need for in-tank steady bearings.
- **Uses the world’s most efficient and versatile range of mixing impellers.**
- **Guaranteed process results.**

In accordance with European Community legislation, all Lightnin mixers carry the CE mark.

**THE LEADERS IN mixing technology**

Illustrated is a 17 size open tank unit with double reduction gearbox.
MIXING - GUARANTEED

OTHER SERIES 10 STANDARD FEATURES INCLUDE:

UNMATCHED DURABILITY

- Large taper roller bearings and an L10 life in excess of 100,000 hours ensure maximum durability.
- High quality carburised and ground gears and an AGMA Service Factor in excess of 1.5 ensure long life.
- Unique output shaft connection gives greater stiffness, reduces deflection at the seal and prolongs seal life.
- High strength ductile iron motor pedestal gives a rigid stable mounting and allows single point safe lifting of the drive assembly.

EXCELLENT VERSATILITY

- Wide range of output speeds provides a variety of torque options to meet all mixing requirements.
- Wide choice of motors. All metric frame motors in the power range can be fitted, including multiple speed options.
- Choice of tank sealing option is extensive. From lip seals to double mechanical seals, from dry running to lubricated, Series 10 does not restrict the best choice for the duty.
- Longer shaft lengths. The Series 10 unique design allows a wide variety of tank configurations to be considered.

MATERIALS OF CONSTRUCTION

Carbon steel and 316 stainless steel are the Series 10 standard for in-tank parts. Alloy and composite shafts are also available. Coverings such as rubber and special surface finishes can also be supplied.

PAINT

All LIGHTNIN drive heads are finished in a hard-wearing two pack acrylic paint designed for long lasting protection in a wide range of process environments.

SEALING & MOUNTING OPTIONS

The Series 10 offers a comprehensive range of tank sealing options. From simple lip seals to double mechanical seals, there is a selection to suit all process conditions.

The LIGHTNIN Series 10 model options are:-

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All C, P & S models are equipped with flanges designed and manufactured to DIN and ASME code standards.

Q UNITS

Open tank mixers are designed for direct beam mounting without the need for additional flanges or plates. An optional angle riser is available to position the mixer correctly on the tank to eliminate the need for in-tank baffles and reduce tank costs by up to 15%.

L UNITS

The lip seal assembly prevents dust and similar foreign matter entering unpressurised vessels. The sealing element is suitable for operation up to 100°C.

C UNITS

The standard stuffing box is designed for pressures up to 10 bar. Five rings of packing and a split gland follower provide the required packing compression.
**S units**

The inclusion of the seal within the unit housing on the S model provides one of the lowest headroom seal units available. A single seal suitable for pressures up to 7 bar and 100°C is the standard supply. Double and low pressure single seals are also available.

**P units**

Series 10 “P” units use a wide variety of package seals, including dry running and lubricated single and double seal options. The pedestal mounting increases the temperature and pressure capabilities of the unit to 150°C and 15 bar for dry running seals, and up to 200°C and 20 bar for lubricated seals.

**Minimum shaft deflection and long seal life**

The distance between the seal face and the rigid support (L) is shorter on the Series 10 design compared to conventional designs. This minimises shaft deflections at the seal face, improving seal life.

**Easy seal replacement**

Seal changes can be performed quickly and easily without the need to remove the mixer from the tank. The change can be made in less than 30 minutes. No stub shafts, jacking plates or bolts are required and costly downtime is reduced to a minimum.

- Simply loosen hardware and lower the shaft support collar onto the hub shoulder.
- Remove split coupling.
- Lift off the seal assembly and replace with a new seal.
The Lightnin Guarantee

LIGHTNIN guarantees that in the case of a failure of any mixer in this brochure which our customer feels is our responsibility, it will be repaired or replaced, or we will refund the purchase price. This guarantee applies to the first full year of operation, or for 18 months after shipment, whichever comes first.

LIGHTNIN mixers are found regularly operating after twenty years or more. But that’s how they are built - for years of continuous service.

Other Lightnin impellers supplied with Series 10 range include:-

- A315 - For gas liquid applications.
- A320 - For higher viscosity applications.
- R100 - For higher shear applications.
- ....... and many more.

For further details about Lightnin’s impeller spectrum please request brochure E120.

LIGHTNIN TECHNOLOGY

For over 70 years LIGHTNIN has designed and manufactured agitators exclusively for the arduous requirements of fluid mixing. LIGHTNIN are the acknowledged world leaders in fluid mixing technology. Key elements are:-

- **LIGHTNIN** research and development employ the advanced computerised analytical techniques of Computational Fluid Mixing (CFM) and Finite Element Analysis (FEA) to generate cost effective guaranteed solutions to mixing problems.

- **CFM** has significantly reduced the cost of pilot and full scale trials because predictions can be made of mixing dynamics in specific vessels. FEA can help to ensure that mixer design loads and forcing frequencies can be accommodated successfully by the vessel design.

- **LIGHTNIN’s** advanced mixing laboratory incorporates the Laser Doppler Velocimeter (LDV) - vital in developing a complete spectrum of process specific impellers. The LDV also provides the basic data for the CFM ensuring maximum accuracy and validity to the analysis.

**LIGHTNIN IMPELLER TECHNOLOGY**

**LIGHTNIN’s** commitment to research and development has created a unique, modern spectrum of impellers, which give efficient guaranteed solutions to process needs.

The standard impeller for the Series 10 is the A305 high efficiency axial flow impeller. The A305 can produce the same flow and process result at a lower power than other axial flow impellers, reducing operating and capital costs.

**WORLDWIDE SUPPORT**

**LIGHTNIN** is the world’s largest manufacturer of fluid mixers. There are manufacturing, service and sales support facilities located throughout the world.

When purchasing a **LIGHTNIN** Series 10 mixer you can be confident that spare parts and technical support are available wherever you may be located.

For more information about the **LIGHTNIN** Organisation please ask for brochure **E111**.

A305 high efficiency impeller - supplied as standard with Series 10.

A320 high efficiency impeller for high viscosity applications.

CFM plots graphically display full scale mixer performance.
The most comprehensive, versatile range of fluid mixing equipment on the market today.

FOR LOCAL SERVICE CONTACT-

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Members of the Lightnin group are also located in:-
Rochester N.Y., U.S.A.; Wytheville, Virginia, U.S.A.; Toronto, Canada; Jurong, Singapore; Sydney, Australia; Rio de Janeiro, Brazil; Shanghai, China; Milan, Italy; Johannesburg, South Africa; Pune, India.

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