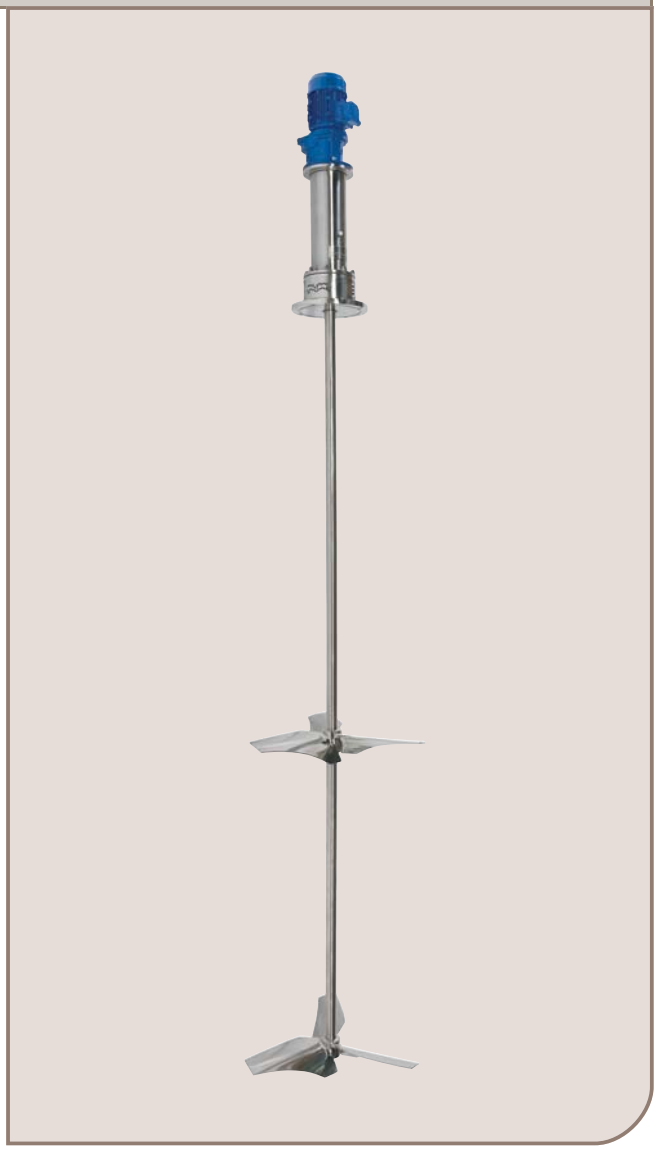
Gillain & Co
HYGIENIC EQUIPMENT FOR FOOD & LIFE SCIENCES

Efficient Mixing and Agitation

Top mounted agitators, type ALT



Applications

The Alfa Laval top mounted agitator offers mixing solutions to meet any requirements in food, dairy, beverage, pharmaceutical, biotechnology or cosmetic applications.
Type ALT agitators can be dimensioned for several applications for both atmospheric and pressurized tanks and furthermore for use in sterile/aseptic applications. The correct sizing of the agitators ensures an optimised solution offering low energy consumption and configuration to meet specific design requirements. Examples are listed below:

Application	Typical examples
Maintain Media Homogeneous	Milk storage tanks, cream tanks, mixed product tanks, UHT product storage tanks, etc.
Mixing and Solutions (dissolve)	Fluid and fluid mixing, i.e. drinking yoghurt and fruit mix tanks, flavoured milk mix tanks, syrup mix tanks, etc.
Solid Dispersion	Powder protein + oil mix tanks, micro salt + milk product mix tanks, etc.
Suspension	Fluids with particles, i.e. juice tanks, crystallising tanks etc.
Heat transmission	Circulation of media in tanks with dimple jacket (cooling or heating)
Dairy Fermentation (break coagula + mixing)	Yoghurt tanks, cheese culture tanks, crème fraîche, etc.

Standard design

The Alfa Laval range of top mounted propeller agitators is designed to meet almost every customer requirement. Type ALT agitators are characterized by their free hanging shaft without bottom support. Due to their modular build, the agitators can be designed for every kind of application in sanitary industries. The modular construction is designed with the aim to meet both European and American standards and regulations, such as EHEDG, USDA, FDA, 3A etc. Please note that Alfa Laval also offer other agitator solutions:

- Type ALTB, top mounted agitators with bottom steady bearing
- Type ALS, side mounted agitators
- Type ALB, bottom mounted agitators

To read more about these agitator solutions please see separate Product Data Sheets.

Configurable design

Type ALT agitators are a fully configurable design and the configuration can be divided into the following elements:

- Drives (drive + shaft support + shaft diameter)
- Seal arrangements (oil trap + shaft seal type)
- Shaft (length)
- Energy Saving Foils (propeller type + surface finish)
- Options

Each element has a broad range of different characteristics which make it possible to size the agitator for all applications and requirements.

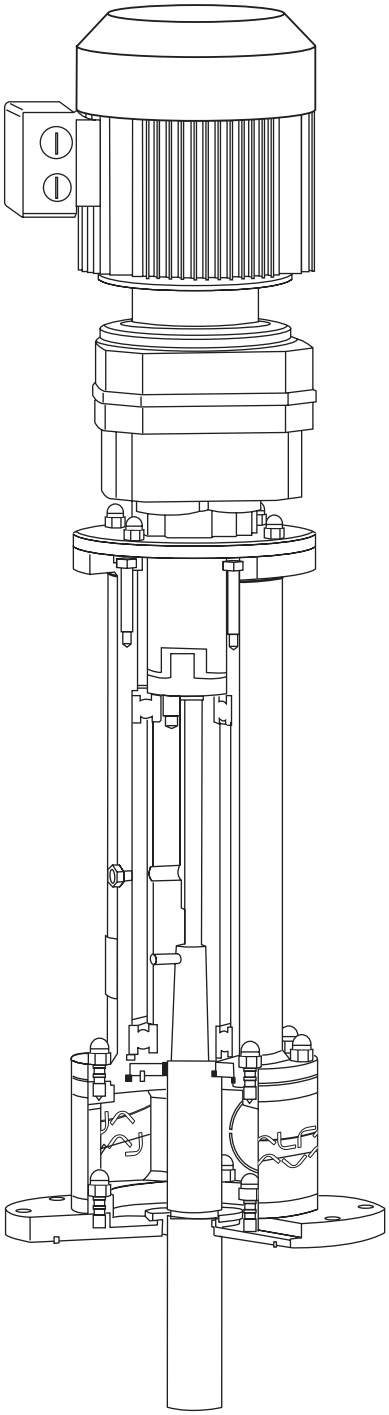
Advantageous and profitable design

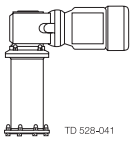
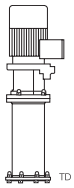
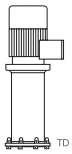
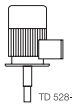
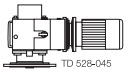
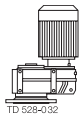
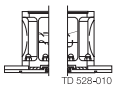
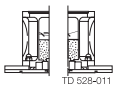
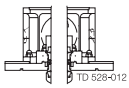
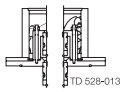
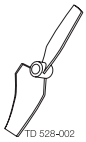
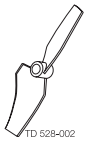
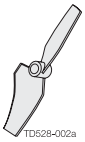
Each configuration offers a number of advantages, which are shown in the examples below:

Operation features	Due to
Low energy consumption	the wide range of high efficiency propellers and drive units makes it possible to design for low operational costs
Gentle product treatment	the wide range of high efficiency propellers makes it possible to design for low shear operation

Sanitary features	Due to
Easy external cleaning	stainless steel bearing frame design with seal O-rings (for wash down)
Connections inside the tank (risk zones) can be avoided	bearing frame drives with drive shaft and special internal shaft connection without having a flange coupling inside the tank
Good drip off properties	no plane surfaces or grooves on internal parts
Easy cleaning	no interior shadow sides between the blades and smooth surfaces

Maintenance features	Due to
All service (replacement of wearing parts such as shaft seals, bearings etc.) can be done from out side	bearing frame drives with detachable shaft which can be dismounted from outside the tank
Easy dismantling	use of spider type coupling and stainless steel parts (no corrosion)



Type ALT	Configuration					Top mounted agitators
Drives Bearing frame size = xx Shaft diameter = yy (not used if xx = yy) Description (power, speed and shaft diameter depending on application)	 TD 528-041 **-ME-GR-Bxx(/yy)** Stainless steel bearing frame and right angle gearbox (for low head room applications)	 TD 528-042 **-ME-GC-Bxx(/yy)** Stainless steel bearing frame and coaxial gearbox	 TD 528-043 **-ME-Bxx(/yy)** Stainless steel bearing frame and direct motor drive	 TD 528-044 **-ME-yy** Direct motor drive, shaft connected directly to motor	 TD 528-045 **-ME-GR-yy -ME-GW-yy** Right angle (GR) or worm (GW) gear drive, shaft mounted in hollow shaft of gearbox (for very low head room applications)	 TD 528-032 **-ME-GP-yy** Parallel shaft gearbox, shaft mounted in hollow shaft of gearbox
Seal arrangements Description (lower flange and seal material depending on application)	 TD 528-009 **F-R-** Seal flange with O-ring seal against tank flange, drain, oil trap (only geared versions) and shaft seal: radial seal for atmospheric tanks	 TD 528-010 **LF-R-** Lantern (spacer), seal flange with O-ring seal against tank flange, drain, oil trap and shaft seal: radial seal for atmospheric tanks	 TD 528-011 **LF-S-** Lantern (spacer), seal flange with O-ring seal against tank flange, drain, oil trap and shaft seal: single mechanical dry running seal for high/low pressure applications	 TD 528-012 **LF-D-** Lantern (spacer), seal flange with O-ring seal against tank flange, drain, oil trap and shaft seal: double mechanical seal for high pressure applications and aseptic use	 TD 528-013 **LF-DT-** Lantern (spacer), seal flange with O-ring seal against tank flange, drain, oil trap and shaft seal: double mechanical seal (tandem) for low pressure applications	
Shaft Length = llll Description (material depending on application)	 **-Sllll-** SS shaft, length according to application					
Energy Saving Foils Number =n Diameter =vvv (125 mm to 1900 mm) Description (material depending on application)	 TD 528-001 **-nPvvvD3P** 3-bladed propeller, finish: polished Standard: Ra < 0.8 µm	 TD 528-001 **-nPvvvD3PE** 3-bladed propeller, finish: polished and electro polished Standard: Ra < 0.8 µm	 TD 528-001a **-nPvvvD3G** 3-bladed propeller, finish: shot peened	 TD 528-002 **-nPvvvD2P** 2-bladed propeller, finish: polished Standard: Ra < 0.8 µm	 TD 528-002 **-nPvvvD2PE** 2-bladed propeller, finish: polished and electro polished Standard: Ra < 0.8 µm	 TD528-002a **-nPvvvD2G** 2-bladed propeller, finish: glass shot peened
Optional Description	 TD 528-006 **Welding flange** Incl. mounting pin nuts and bolts	 TD 528-006 **Blind flange** Incl. seal O-ring	 TD 528-007 **Cover for Motor / gear motor** Stainless steel cover - comes in different shapes according to drive type	S **Spare part kit** Standard spare part kit		

Motor
Motor size and speed as required for duty.
As standard with IEC motor IP55, other types on request.
As standard painted RAL5010.

Voltage and frequency
As standard for 3x380 to 420V, 50Hz - 3x440V to 480V, 60Hz.
All motor voltages and frequencies are available.

Gears
Different gear types available according to configuration.
As standard filled with normal synthetic or mineral oil, optional: Food approved oil.
As standard painted RAL5010.

Materials
List the range of materials available for wetted parts

Steel parts:	AISI 316L (standard) AISI 304 AISI 904L SAF 2205 Other materials on request.
Seal rubber parts (O-rings or bellows):	EPDM FPM/FEP (only for stationary o-rings) FPM Other materials on request.
Mechanical seal parts:	Carbon Carbon (FDA) Silicon carbide

Specific selection of materials will depend on the actual configuration selected.

Material Certificate - option
3.1 Material certificates/FDA conformity statement according to 21 CFR177 on steel/elastomer parts in contact with the media

ATEX - option
Agitators can be delivered approved for use in an ATEX environment with declaration of conformity according to directive 94/9/EC, approved according to ATEX categories:

In tank:	II1GDcTX, II2GDcTX or II3GDcTX
Outside tank:	II2GDcTX or II3GDcTX

NOTE: Not all configurations can be delivered according to ATEX directive 94/9/EC.

Dimensions
Standard propeller diameter range: Ø125 mm to 1900 mm.
Specific dimensions on the drive unit and propeller(s) will depend on the actual configuration selected.

Enquiries
The following information is required to ensure correct sizing and configuration for ordering:
For budget pricing use the following inquiry handling form from Alfa Laval (electronic version): "Simple enquiry, agitator".
For a detailed quotation use the following inquiry handling form from Alfa Laval (electronic version): "Advanced enquiry, agitator".

ESE00216EN 1001

The information contained herein is correct at the time of issue, but may be subject to change without prior notice.

How to contact Alfa Laval
Contact details for all countries
are continually updated on our website.
Please visit www.alfalaval.com to
access the information direct.