Efficient Mixing and Agitation

Alfa Laval Top mounted agitators, type ALT

Applications

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.

TECHNICAL DATA

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.

ATEX - option
Agitators can be delivered approved for use in an ATEX environment with declaration of conformity.

Ordering
The following information is required to ensure correct sizing and configuration for ordering:
- Tank geometry
- Product properties
- Task of agitator
- Enquiry forms are available

PHYSICAL DATA

Materials
Available materials

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

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

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.

Top mounted agitators, type ALT

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 hygienic 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

For more information please see separate Product Data Sheets.

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

Hygienic 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

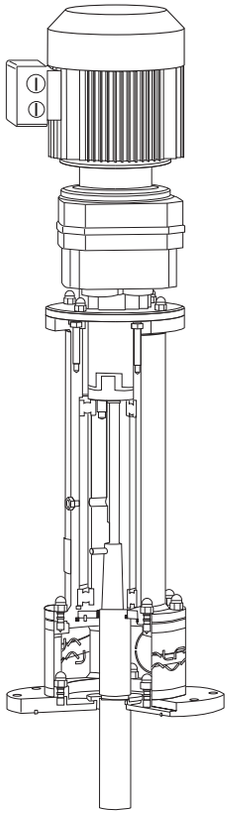
Maintenance features	Due to
All service (replacement of wearing parts such as shaft seals, bearings etc.) can be done from out side the tank	bearing frame drives with detachable shaft which can be dismounted from outside the tank
Easy dismantling	use of spider type coupling and stainless steel parts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

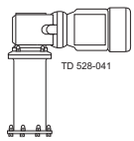
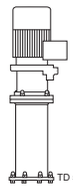
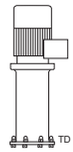
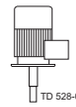
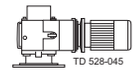
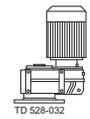
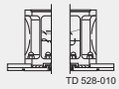
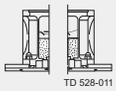
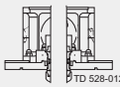
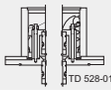
Configurable design

Type ALT agitator design is fully configurable divided in 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.



Type ALT	Configuration					Top mounted agitators
Drives						
Bearing frame size = xx Shaft diameter = yy (not used if xx = yy)	 TD 528-041	 TD 528-042	 TD 528-043	 TD 528-044	 TD 528-045	 TD 528-032
	-ME-GR-Bxx(/yy)	**-ME-GC-Bxx(/yy)**	**-ME-Bxx(/yy)**	**-ME-yy**	**-ME-GR-yy -ME-GW-yy**	**-ME-GP-yy**
Description (power, speed and shaft diameter depending on application)	Stainless steel bearing frame and right angle gearbox (for low head room applications)	Stainless steel bearing frame and coaxial gearbox	Stainless steel bearing frame and direct motor drive	Direct motor drive, shaft connected directly to motor	Right angle (GR) or worm (GW) gear drive, shaft mounted in hollow shaft of gearbox (for very low head room applications)	Parallel shaft gearbox, shaft mounted in hollow shaft of gearbox
Seal arrangements	 TD 528-009	 TD 528-010	 TD 528-011	 TD 528-012	 TD 528-013	
	F-R-	**LF-R-**	**LF-S-**	**LF-D-**	**LF-DT-**	
Description (lower flange and seal material depending on application)	Seal flange with O-ring seal against tank flange, drain, oil trap (only geared versions) and shaft seal: radial seal for atmospheric tanks	Lantern (spacer), seal flange with O-ring seal against tank flange, drain, oil trap and shaft seal: radial seal for atmospheric tanks	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	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	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 = lll	**-Sllll-**					
Description (material depending on application)	SS shaft, length according to application					
Energy Saving Foils						
Number =n Diameter = vvv (125 mm to 1900 mm)	 TD 528-001	 TD 528-001	 TD 528-001a	 TD 528-002	 TD 528-002	 TD 528-002a
	-nPvvvD3P	**-nPvvvD3PE**	**-nPvvvD3G**	**-nPvvvD2P**	**-nPvvvD2PE**	**-nPvvvD2G**
Description (material depending on application)	3 - bladed propeller, finish: polished Standard: Ra < 0.8 µm	3 - bladed propeller, finish: polished and electro polished Standard: Ra < 0.8 µm	3 - bladed propeller, finish: shot peened	2 - bladed propeller, finish: polished Standard: Ra < 0.8 µm	2 - bladed propeller, finish: polished and electro polished Standard: Ra < 0.8 µm	2 - bladed propeller, finish: glass shot peened
Optional	 TD 528-005	 TD 528-006	 TD 528-007	**S**		
	Welding flange	**Blind flange**	**Cover for Motor / gear motor**	**Spare part kit**		
Description	Incl. mounting pin nuts and bolts	Incl. seal O-ring	Stainless steel cover - comes in different shapes according to drive type	Standard spare part kit		