

These instructions contain fundamental information and precautionary notes. Please read the manual thoroughly before installing or operating the unit. These instructions must always be used in conjunction with the operating instructions of the mixer and any other supplementary operating instructions concerning the mixer itself or its components.



This instruction manual contains fundamental information about the installation and operation of the mixer accessories. The responsibility for ensuring the observation of all regulations in force at the place of installation - also by any temporary labour assisting with the installation work - lies with the user. Accessories must only be used in accordance with their designated purpose on the KSB mixer they are intended for. It is not permitted to use them on any other mixers, whether these be of KSB or any other make.



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1 Pre-conditions for Installation

1.1 General

- Safety

This operating manual contains basic instructions, which must be observed during installation, operation and servicing. Therefore it is imperative that this manual is read prior to assembly by the installer and relevant skilled staff/and operators, and it must always be kept within the locality of the machine/plant.

Do not only observe the general safety notes under this section, but as well any other notes regarding safety included in the manual.

- Marking of Instructions

All safety instructions included in this manual are preceded by the general hazard symbol, i.e.



The non-observance of this symbol may pose a health hazard to those attending the site.

Warnings against electrical danger are preceded by this symbol:



The non-observance of this symbol may pose a health hazard to those attending the site.

All safety instructions in this operation manual, the non-observance of which may endanger the mixer itself or its safe operation are preceded by the word

Attention

- Personnel Qualification and Training

All personnel involved in the operation, maintenance, inspection or installation of the mixer must be qualified for the work in question. The personnel's responsibilities, competence and supervision must be clearly defined by the user. To the extent that the personnel in question is not already in possession of the required skills and know-how, appropriate training and instructions must be provided for. If required, the manufacturer/supplier will provide such training at the user's request. In addition, the user is responsible for ensuring that the contents of the operation manual are fully understood by the personnel involved in the work.

- Dangers Resulting from Non-compliance with the Safety Instructions

Non-compliance with the safety instructions may endanger the safety of people, property, the environment and the mixer itself. Non-compliance with the safety instructions will also lead to the forfeiture of any and all rights to claims for damages.

More specifically, non-compliance may, for example, result in:

- Failure of essential mixer and/or plant functions;
- Health hazard due to electrical shock, mechanical impact, chemical contamination.
- Pollution of the environment by the leakage of hazardous substances.

- Safety Awareness

It is imperative to comply with the safety instructions contained in this operation manual, the relevant national accident prevention regulations and any of the user's own work, operation and safety regulations.

- Safety Instructions for the User / Operator

Take the necessary precautions to preclude all electrical hazards (for more information, consult the stipulations of the local power supply companies).

Safety Instructions for Maintenance, Inspection and Installation Work

The user is responsible for ensuring that all maintenance, inspection and installation work is carried out by duly authorized, adequately qualified, specialist personnel who are thoroughly familiar with the contents of this operation manual.

As a general rule, work on the mixer must only be performed during standstill. The shutdown procedure described in the manual for taking the machine out of service must be strictly adhered to.

Mixers used to handle hazardous substances have to be decontaminated.

Immediately following completion of the work, all safety-relevant and protective devices must be re-installed and/or re-activated.

Please follow all instructions set out in the chapter entitled "Commissioning" before returning the machine to service (included in the mixer operating instructions, 1592.87.1 - 14).

- Unauthorized Modification and Manufacture of Spare Parts

Neither the unit itself nor any installation hardware or accessory may be modified or altered in any way without the prior consent of the manufacturer. The use of genuine spare parts and accessories approved by the manufacturer helps ensure the operational safety and reliability of the equipment. Please note that the use of other than genuine parts and approved accessories can invalidate the manufacturer's liability for consequential damage.

1.2 Checking the Site before Installation

Check that the building dimensions are in accordance with the dimension sheet. To ensure that the carrying capacity of the foundation is sufficient for installation of the unit, the strength of the concrete must be at least 3,000 psi. Check that the concrete foundation has set before proceeding with the installation of the mixer.

Even if the reservoir floor is inclined, the surface must be leveled if the installation parts are to be mounted to it securely.

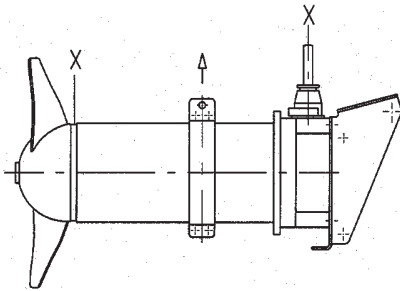
1.3 Checking the Parts Before Installation

Before starting the installation, check that the installation parts and accessories are complete and that they have not suffered any transportation damage.

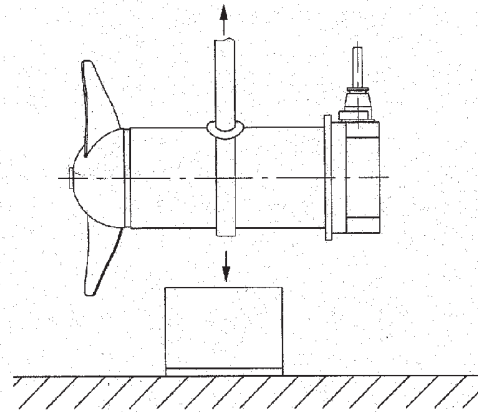
2 Preparations for Installation

2.1 Transporting the Mixer

Only use the suspension device (lifting clamp with shackle) for transporting the mixer. Do not damage the propeller blades or the electrical power cable during transport (support the weight of the cable in an adequate manner). Do not kink the cable or get it crushed by the weight of the mixer.



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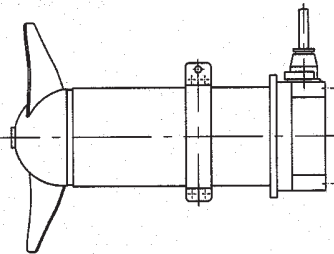


- Put on the mounting bracket and fasten the clamping bolts provisionally.
- While this is done, adjust the inlet incidence angle of the mixer relative to the support foot (direction of the jet), as required
- Tighten the clamping bolts and secure with lock nuts.

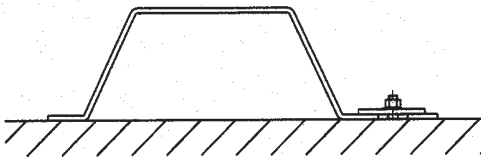
3 Installing the Mixer on the Support Foot

In most cases, the mixer is installed with the accessories of set no. 6 outside the reservoir as follows

- Remove the lifting clamp from the mixer



- Set up the support foot as indicated in the diagram. Secure it against falling over with some temporary fixing aids



- Place the mixer on top of the support foot, and secure it against rolling off.

3.1 Installing the Mixer on the Reservoir Floor

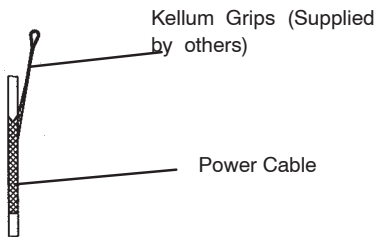
- Suspend the mixer from the load carrying point on the mounting bracket, and lower it into the reservoir.
- If the mixer has to be lowered through a hole in the ceiling, check that it fits through according to the dimensions in the dimension table (the dimensions apply to an incidence angle of 0°).
- Drill the holes in accordance with the dimension table.
- Fix the support foot to the bottom of the reservoir using composite anchor bolts.

Note:

When all installation parts are to be mounted inside the reservoir, begin by bolting the support foot to the floor of the reservoir using the composite anchor bolts, then continue mounting the mixer set on top of the support as described.

3.2 Fixing the Dead-ending the Electrical Power Cable

- Lead the power cable to the wall of the reservoir, to cross arms or similar, and pull it tight by means of a cable grip as follows: pull the cable grip over the cable end and pull the cable tight, fix the cable grip in a suitable place to the wall of the reservoir with the shackle included in the supply, making sure not to chafe the cable (if necessary, provide some type of cushioning).



Too loosely laid cables may be damaged by the turbulence of the flow or get caught in the rotating propeller blades!



3.3 Commissioning

- Please refer to the instructions in the operation manual of the mixer 1592.82/3
- Check the direction of rotation of the mixer before flooding the reservoir.

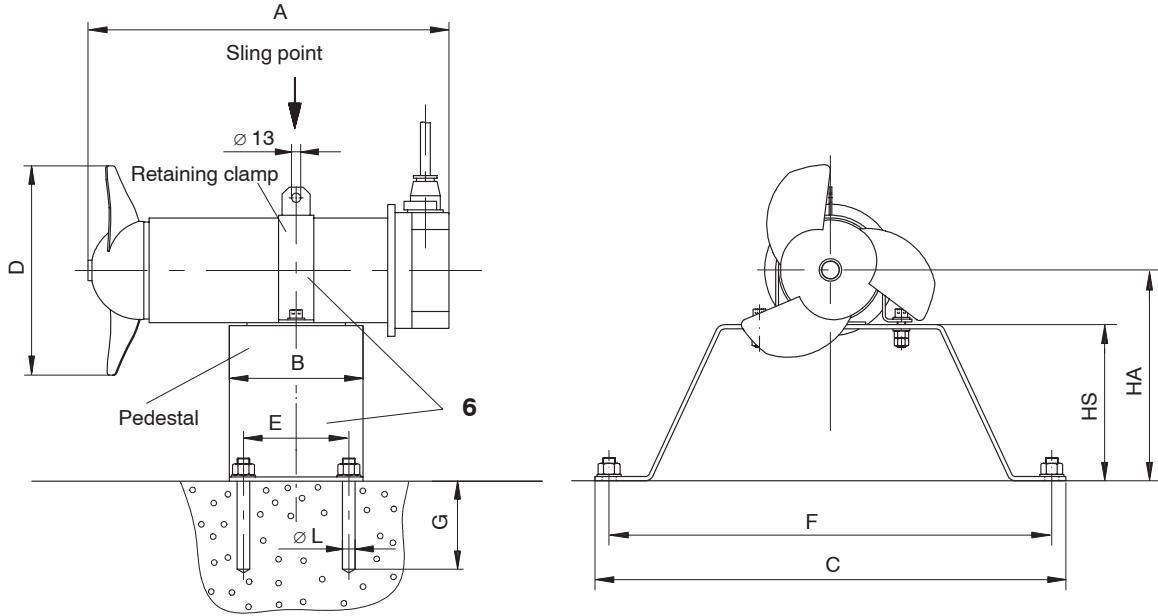


Before checking the direction of rotation of the mixer, check that there is no one near the mixer in the reservoir;
ATTENTION: rotating propeller blades

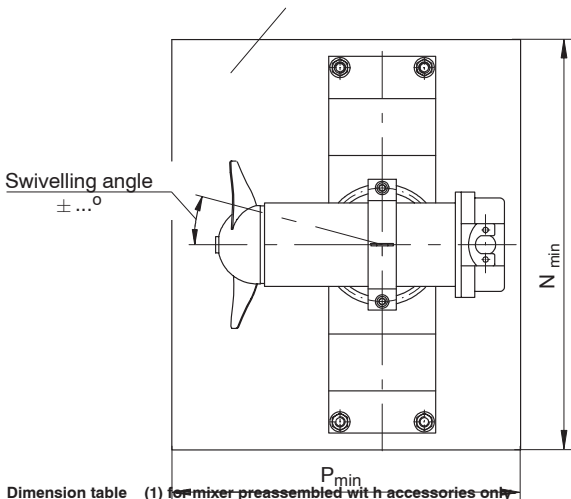


3.4 Standard Accessories - Set No. 6

For permanent mounting of the mixer on the tank floor (Amamix direct 215, 300, 400)



Min. dimensions for installation through tank cover opening (jet direction 0°)



Size	Swivelling angle
Amamix ...	± ...°
-215 G	30°
-215 C; 300 (with motor 1 6)	25°
-300 (with motor 2 6)	45°
-400	35°

Dimension table (1) for mixer preassembled with accessories only

Size	Motor size	Dimensions [inches]											0W 384 401-00	
		D	A	B	C	E	F	G	Ø L	HA	HS	N _{min} ¹⁾	P _{min}	
-215 G	1 4, 2 4	~8 7/8	18 1/8	5 7/8	20 5/8	0	19 1/16	4 7/8	11/16	8 1/2	5 19/64	22 5/8	101 11/16	
-215 C	1 4, 2 4			7 1/2	23 13/16	5 7/8	22 1/4			11 13/16	8 11/16		25 3/4	19 11/16
-300	1 6	~12 3/8	17 11/16	8 5/8	29 7/8	7 1/16	28 5/10			15 11/16	307	31 1/2	25 9/16	
	2 6												20 1/2	21 3/4



4 Standard Installation Accessories

4.1 Installing Mixer Mast

It is very important that the mixer mast assembly be properly installed. Each assembly must be plumb in both directions and secured to the tank wall and floor with the supplied anchor bolts. Shimming of brackets may be required.

1. Place the base bracket on the tank floor close to where the unit will be located. Do not anchor the base bracket at this time.
2. Carefully lower the mast assembly into the tank, placing the lower mast socket over the base bracket pin. Take steps to insure that all personnel be kept at a safe distance from the mast assembly while it is being lowered into the tank.
3. With the mast assembly seated on the base bracket pin, insert the upper bracket pin all the way into the upper mast socket. While holding the upper bracket against the mounting surface, mark or line drill the four holes for the anchor bolts.

NOTE: To insure proper mast rotation, it is very important that the upper bracket is mounted straight and plumb.

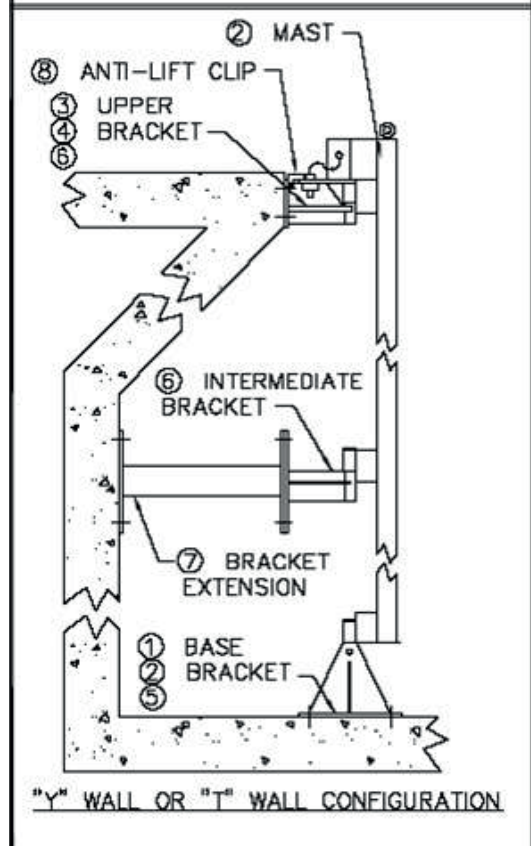
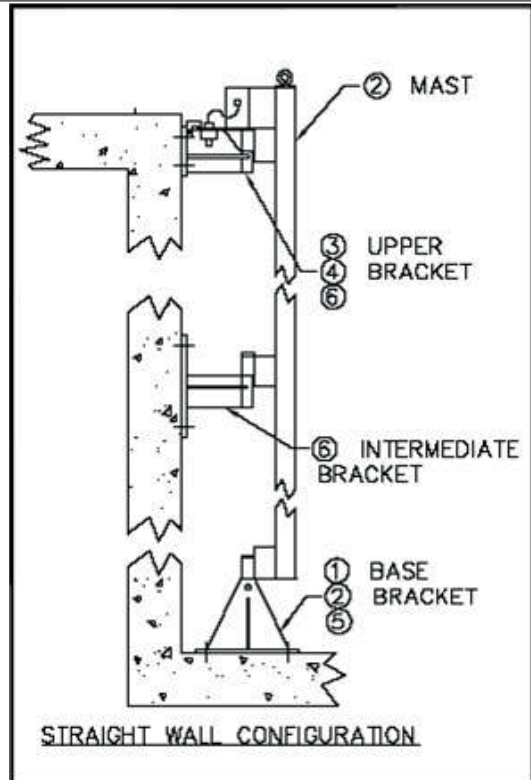
4. After drilling the anchor bolt holes, place the upper bracket on the wall, aligning the holes, and insert the four anchors. Snug up the anchors but do not tighten them.
5. Place a level on the mast tube. Move the mast and the inserted base bracket to the position on the tank floor that will insure that the unit is plumb in all directions. Line drill and install the anchor bolts in base bracket.
6. If the mast assembly is more than 10 feet in length intermediate wall brackets must be installed. Place the intermediate wall bracket pin all the way into the mast socket, with the mounting plate against the tank wall, line drill the four anchor bolts at the intermediate bracket as well as the upper bracket at this time.

NOTE: When installing the intermediate wall bracket be sure that the mast assembly remains plumb in all directions.

7. If the mast assembly is being mounted on a "Y" or "T" wall, and is more than 10 feet in length, intermediate extension brackets are required. Attach the extension bracket to the intermediate bracket, using the supplied hex head bolts with nuts and washers. Insert the intermediate bracket pin all the way into the mast socket. With the mounting plate of this assembly against the tank wall, mark or line drill for the anchor bolts. Install and tighten the anchor bolts.
8. Install "L" shaped anti-lift clip as shown using the 1/4 dia X 3/4 inch hex. head bolt w/lock washer.

4.2 Installing the Guide Rail Stop Bracket

With the aid of U-bolts and lock nuts, mount the retaining bracket on the guide rail such that the unit's prescribed centerline height results.



4.3 Installing the Guide Rail Retaining Bracket

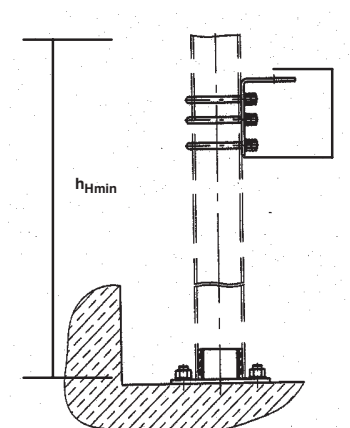
Using u bolts and lock nuts, mount the retaining brackets to the guide pipe in such a way that the mixer axis is at the specified height.



Observe the minimum distance from the floor and the minimum liquid level above the propeller blades specified in the mixer operation manual.

If the propeller is only partly covered by the liquid, the bearings will be unevenly loaded, the mixer will be subject to increased vibrations and the shaft bearings and mechanical seals will be subject to premature wear.

Tightening torque	M 10	7.5 lbf-ft
	M 12	45 lbf-ft

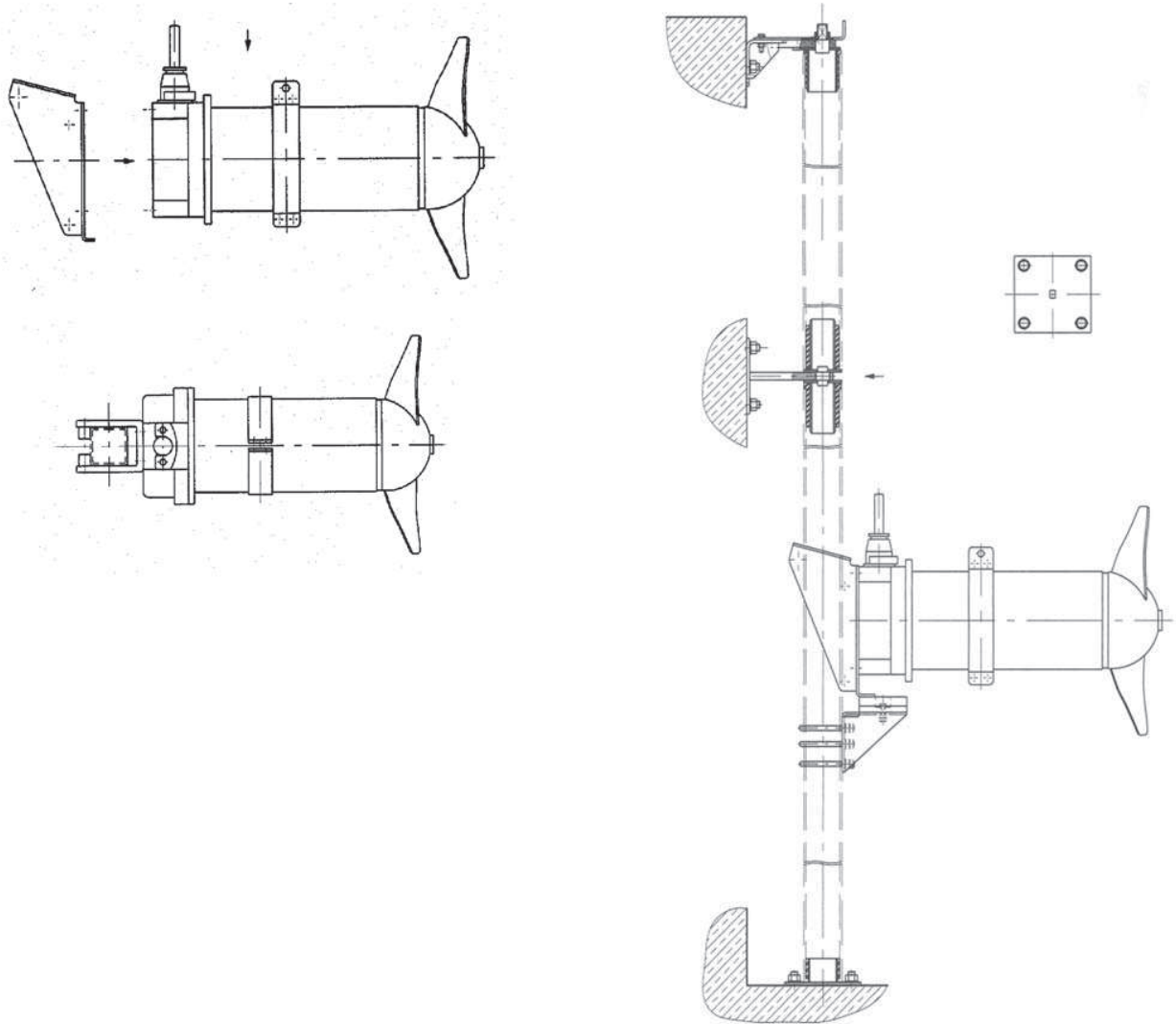


4.4 Mounting the Claw to the Mixer

Screw the claw to the motor casing cover of the mixer using four hexagon head bolts.

Tightening torques:

Amamix 215/300:	M8	13 lbf-ft
Amamix 400/500/600:	M12	45 lbf-ft



NOTE: The h_{Hmin} dimension is from the bottom of the sump to the center line of the propeller.

Center support of guide pipe

Size	h_{Hmin} (inches)	
Amamix	215	4 15/16
	300	5 15/16
	400	9
	500	12 5/8
	600	16 9/16

4.5 Lifting the Mixer out of the Reservoir (e.g. for maintenance)

Unscrew the connecting bolts M 10 between the adjustment strap and the bearing part and turn the direction of the jet back to its centre position (90° - position, symmetry of the adjustment strap relative to the bearing part) by means of square M 27 or the mounting lever.

Enter a bolt M 10x40 through the two holes (Ø 11) in bearing part and spherical plain bearing to stop the parts turning around the guide pipe axis horizontally.

Note: For this purpose, the adjustment strap has a Ø 30 hole to accommodate the head of the bolt.

Remove the adjustment strap from the square of the spherical plain bearing and lift the mixer out of the reservoir by the chain / rope and the crane / hoist.

Lower the mixer again in reverse order. Re-adjust the direction of the jet and, once this is done, re-mount the connecting bolts M 10x40 between the adjustment strap and the bearing part, and re-tighten them with a 35 Nm tightening torque.