

AMT - MAGNETIC MIXER

PRODUCT DESCRIPTION

Designed complying with FDA rules for pharmaceutical and biotechnology industries. The major advantage is that enables the total integrity of the tank. The transmission with magnetic torque avoids the occurrence of cross contamination between product and external environment, a typical problem of the use of devices with mechanical seals (shafts, seals and other equipment). Suitable for high viscosities, offers great flexibility. The bottom mounting allows to keep clear the tank from any other body, such as shafts from the top and baffles, thus easing vessel access, cleaning and maintenance.

PRINCIPLE OF OPERATION

A machined pad is welded into the bottom of the vessel (usually offset respect to the central axis). This design allows to dismount the drive unit and to sterilize the tank in an autoclave, meanwhile the same drive unit can be installed and operated in another vessel. The impeller head is running by a drive unit externally mounted. Inside the impeller head there is a ring of special magnets encapsulated in a 316L ss housing. The blades are welded to this housing, creating an integral impeller head.

PERFORMANCE

The geometry of the impeller allows an excellent axial pumping flow and very low shear rate for different applications (looking from the top, impeller always must rotate clockwise):

- Mixing, dilution, maintaining in suspension...
 - Speed range 80 to 380 rpm using an inverter (*). Depending on the size of vessel and impeller-head, levels of agitation can change from vigorous to gentle.
 - Small volumes can be achieved.
 - All product contact parts are made in 1.4435 or 1.4404.
 - The impeller head runs on a special grade tungsten carbide that has been manufactured under controlled conditions to achieve the correct size, grain structure and hardness.
 - The blade shape and profile has been designed to optimize agitation levels and to direct a proportion of the cleaning fluid through the head.
- (*) suggested range working speed can be achieved exceeding or decreasing 50Hz frequency.



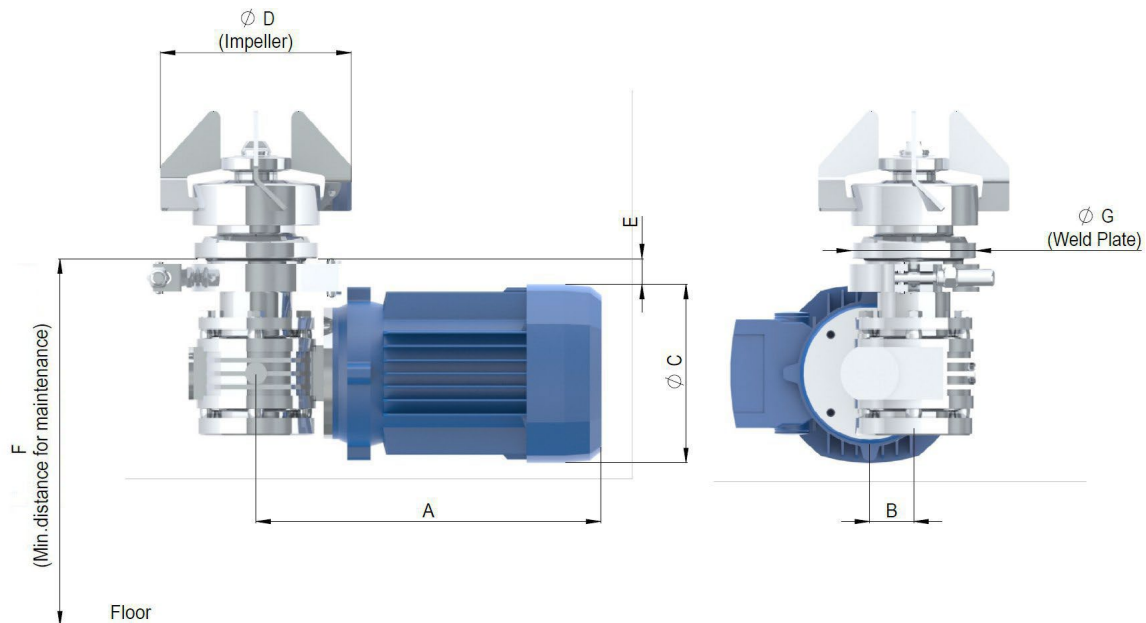
Type	Volume range Vigorous / Gentle	Motor Power rating	Weight	Impeller Diameter	Weld plate Diameter/Thickness
AMT-02-PBAM- # @ -1B	5 - 20 L	60 w - 0,08 hp	4 Kg	Ø 75 mm	Ø 60 x10 mm
AMT-04-PAAA- # @ -1B	10 - 50 L	120 w - 0,16 hp	7 Kg	Ø 105 mm	Ø 70 x10 mm
AMT-06-PAAS- # @ -1B	50 - 150 L	250 w - 0,34 hp	9 Kg	Ø 130 mm	Ø 85 x15 mm
AMT-08-PAAS- # @ -1B	150 - 500 L	0,55 kw - 0,74 hp	15 Kg	Ø 155 mm	Ø 125 x 23 mm
AMT-12-PAAS- # @ -1B	300 - 2.000 L	0,75 kw - 1,00 hp	20 Kg	Ø 175 mm	Ø 150 x 23 mm
AMT-20-PAAS- # @ -1A	1.000 - 3.000 L	1,50 kw - 2,01 hp	30 Kg	Ø 220 mm	Ø 185 x 23 mm
AMT-32-PAAS- # @ -1A	2.000 - 6.000 L	2,20 kw - 2,95 hp	45 Kg	Ø 280 mm	Ø 250 x 30 mm
AMT-64-PACW- # @ -1A	3.000 - 20.000 L	5,50 kw - 7,38 hp	114 Kg	Ø 290 mm	Ø 350 x 50 mm

bearing combination @ bearing sealing

- The mixing capacities above are based on aqueous like products with a density of 1.000 Kg/m³ and a viscosity of 1cp.
- Typical applications for "Gentle mixing" are where solid are held in suspension or where powders easily dissolve into the liquid.
- Typical applications for "Vigorous mixing" are where a vortex is required for blending of powders into a liquid.



Nominal Dimensions in mm



Type	A mm	B mm	Ø C motor	Ø D impeller	E mm	F mm	Ø G weld plate
AMT-02-AC Complete	195	28	Ø 92 mm	Ø 75 mm	15	180	Ø 60 mm
AMT-04-AC Complete	230	30	Ø 110 mm	Ø 105 mm	12	200	Ø 70 mm
AMT-06-AC Complete	235	30	Ø 120 mm	Ø 130 mm	5	200	Ø 85 mm
AMT-08-AC Complete	290	50	Ø 140 mm	Ø 155 mm	33	250	Ø 125 mm
AMT-12-AC Complete	330	63	Ø 160 mm	Ø 175 mm	37	280	Ø 150 mm
AMT-20-AC Complete	400	75	Ø 175 mm	Ø 220 mm	31	290	Ø 185 mm
AMT-32-AC Complete	400	75	Ø 180 mm	Ø 280 mm	71	350	Ø 250 mm
AMT-64-AC Complete	590	31	Ø 220 mm	Ø 290 mm	97	500	Ø 350 mm

General information

MATERIAL WETTED PARTS

Welding plate	stainless steel AISI 316L- 1.4404 or 1.4435
Impeller	stainless steel AISI 316L- 1.4404 or 1.4435
Static bearing	tungsten Carbide
Dinamic bearing	tungsten Carbide
Disks / o-rings	FDA and USP Class VI

MOTOR DATA

Voltage	230/400V AC– 50Hz and 460/480V AC– 60Hz
Number of poles	2 except Atex execution which have 4 poles
Protection index	IP 55
Certified	CE/cCSAus, IEC, CEI/UNEL
Thermistor	1 (PTC, 150°C)

WELDING PLATE

Surface roughness	Ra<0,5 micron or better, or + electropolishing
Design pressure	-1 to +10 bar(g)
Design temperature	-80 to +200°C
In compliance with	the welding plate is in compliance to PED Directive 2014/68/EU Category IV
Labelling	for full traceability purposes each welding plate is individually marked with item and heat No

OPTIONAL ACCESSORIES

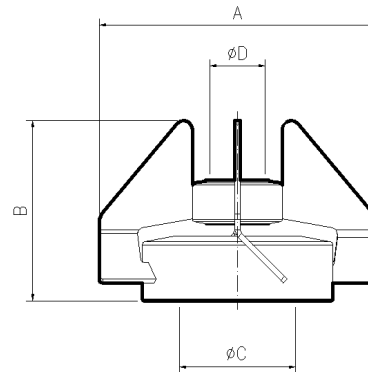
Speed sensor	a magnetic proximity sensor can be fitted onto weld plate to measure the rotation of the impeller
Sensor type	PNP, Voltage 24V DC, degree of protection IP67
Tempereure range	-10 to +125°C
Bearings	Silicon Carbide, Zirconium Oxide
Extension	different lengths extensions available on request
ATEX Execution	in compliance with the European Directive 2014/34/EU ATEX available on request

Warning : the assembled Mixer may have different design temperature and / or pressure limits. The weakest component in the assembled product determines the maximum design temperature and pressure limits.

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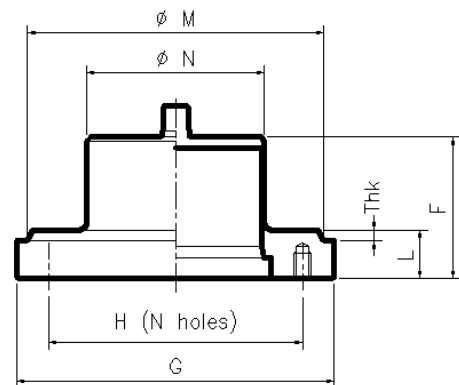
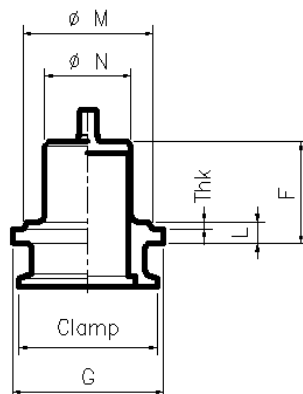
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Impeller dimensions



Item code	A mm	B mm	Ø C weld plate	Ø D static bearing	Weight kg	compatible mixer type
TM2/4-T	75	58,5	33	22	0,490	AMT-02-AC
TM4/4-T	105	76	43	22	0,850	AMT-04-AC
TM6/4-T	130	81,5	57	22	1,050	AMT-06-AC
TM8/4-T	155	103	67	28	1,800	AMT-08-AC
TM12/4-T	175	105	87	28	2,200	AMT-12-AC
TM20/4-T	220	119	127	40	3,200	AMT-20-AC
TM32/4-T	280	126,5	169	40	4,750	AMT-32-AC
TM64/4-T	290	168,5	169	40	7,050	AMT-64-AC

Welding plate dimensions



Thk : to be defined on purchase order phase

Item No	F mm	G mm	L mm	H holes C/L	holes qty x dia	Clamp	Ø M Tank hole	Ø N	Weight kg
MM2/9/1-T	45	60	10	-	-	1"1/2	55	31	0,400
MM4/9/1-T	47	70	10	-	-	2"	60	40	0,500
MM6/9/1-T	52	85	15	-	-	2"1/2	75	54	0,800
MM8/9/1-T	67	125	23	95	8 x M8	-	115	64	1,900
MM12/9/1-T	67	150	23	120	8 x M8	-	140	84	2,500
MM20/9/1-T	70	185	23	160	9 x M8	-	175	124	3,550
MM32/9/1-T	81	250	30	200	8 x M12	-	240	166	8,700
MM64/9/1-T	137	350	50	250	8 x M12	-	340	166	11,200



Optional available on request

Available options in order to accommodate specific customer requests

- Welding plate with bigger different thickness
- Shaft extension for vessel with jacket or thermal insulation
- Proximity speed sensor
- Dismounting system for magnetic coupling
- Drive unit ATEX execution
- Pneumatic drive unit
- Axial gear box for RPM increase
- Stainless steel drive unit
- Impeller electropolished
- Silicon carbide or Zirconium oxide bearings


Dismounting system for magnetic coupling to take off the impeller without any magnetic attraction and without remove the motor.
Dedicated for heavy, biggest size from TM20 to TM64



Ordering information

To specify the part completely, start with the product description and select the additional options as shown below:

AMT A -20 P AAS -A T 050 -E -1A

ATEX execution 
in compliance with the European
Directive 2014/34/EU ATEX
can be supplied upon request

Size 02, 04, 06, 08, 12, 20, 32, 64

Welding Flange
S standard included
P standard NOT included
I for insulation tank included
L for insulation tank NOT included

Engine + Gear Box
It depends on size and type (i.e. AAS)

Optional
A proximity speed counter
B dismounting system
C predisposition for proximity
D encoder
E predisposition for dismounting system

Extension
mm of shaft length over than standard execution

Seal
T Modified PTFE
other material on request

Bearings
A tungsten carbide
E silicone carbide
I zirconium oxide

General information

- Welding plate and impeller in stainless steel AISI 316L -1.4435 as standard for size AMT 02, 04, 06, 08, 12 other sizes in 1.4404.
- Temperature probe PTC as standard.

Get the information you need and more at: info@aerreinox.it

In the interests of development and improvement of the product, we reserve the right to change the specifications without prior notice.

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