

# AMT Magnetic Mixers



Designed complying with the rules for pharmaceutical and biotechnology industries, our AMT aseptic magnetic mixer contributes to maximize product yield in a wide volume ranges of the tanks. Thanks to its technology, it enables to the total integrity of the tank.

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.

Suitable for wide range of viscosities, it provides efficient mixing at low speeds, which ensures gentle product treatment, as well as at high speeds for high-intensity mixing.

## WORKING PRINCIPLE

The impeller installed inside the tank rotates due to the torque from the magnetic coupling given by the external drive unit.

This magnetic transmission 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].

## APPLICATION:

Designed for meeting the requirements of the plants in the Pharmaceutical, Food & Beverage, Cosmetics, Dairy, Fine Chemicals industries.

The geometry of the impeller allows an excellent axial pumping flow and very low shear rate for different applications: mixing, dilution, maintaining in suspension...

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

- The mixing capacities above are based on aqueous like products, with a density of 1.000 Kg/m<sup>3</sup> and a viscosity of 1 cp.
- 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.

## Advantages :

- Maximum process efficiency, minimal product loss
- Optimal flow with higher efficiency and less energy consumption
- Great flexibility in volume, viscosity, speed
- Optimized sanitification due to fully drainability and open design of the impeller
- Minimized downtime due to ease of maintenance

## DATASHEETS



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## Technical Information:

### Material wetted parts:

|                          |                                                                      |
|--------------------------|----------------------------------------------------------------------|
| Welding plate            | stainless steel AISI 316L 1.4435 (from 02 to 12) - 1.4404 (20-32-64) |
| Impeller                 | stainless steel AISI 316L 1.4435 (from 02 to 12) - 1.4404 (20-32-64) |
| Static bearing           | tungsten Carbide (standard), Silicon Carbide, Zirconium Oxide        |
| Dinamic bearing          | tungsten Carbide (standard), Silicon Carbide, Zirconium Oxide        |
| Seals for static bearing | Modified PTFE                                                        |
| Fixing screw             | stainless steel AISI 316L 1.4435 (from 02 to 12) - 1.4404 (20-32-64) |

### Surface Finish

Ra ≤ 0,5µm (OPTIONAL: electropolishing, other on request)

### Welding plate:

|                                             |                |
|---------------------------------------------|----------------|
| Design pressure                             | + 10 bar(g)    |
| Design temperature                          | - 80 to +200°C |
| In compliance with PED Directive 2014/68/EU |                |

**Mixer working temperature** 0°C ÷ 150°C (Only for sterilization or short time)

### Motor data:

|                                            |                                           |
|--------------------------------------------|-------------------------------------------|
| Motor type                                 | Three-phase asynchronous motor            |
| Voltage                                    | 230/400 V AC                              |
| Frequency                                  | 10-50Hz (operated with VFD, not supplied) |
| Number of poles                            | 2                                         |
| Protection type                            | IP 55                                     |
| PTC temperature probe included             |                                           |
| Painting RAL 9010 (not available for ATEX) |                                           |

### Speed range

80÷380rpm (AMT-02 90 ÷ 400rpm) **other on request**

### Certification

3.1 material certificates (in contact) according to UNI EN 10204  
FDA  
USP Class VI  
Optional ATEX version  
**other certificates on request**

### Labelling

for full traceability purposes each welding plate and complete mixer are individually marked with part number and batch

**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.

## STANDARD

| Mixer size | Motor power rating | Poles | Gear box ratio | Min/max rpm for mixer |
|------------|--------------------|-------|----------------|-----------------------|
| AMT-02     | 0.06kw/0.08 hp     | 2     | 1/7            | 90÷400rpm             |
| AMT-04     | 0.12kw/0.16 hp     | 2     | 1/7.5          | 80÷380rpm             |
| AMT-06     | 0.25kw/0.34 hp     | 2     | 1/7.5          | 80÷380rpm             |
| AMT-08     | 0.55 kw/0.74 hp    | 2     | 1/7.5          | 80÷380rpm             |
| AMT-12     | 0.75 kw/ 1.00 hp   | 2     | 1/7.5          | 80÷380rpm             |
| AMT-20     | 1.50 kw/2.01 hp    | 2     | 1/7.5          | 80÷380rpm             |
| AMT-32     | 2.20 kw/2.95 hp    | 2     | 1/7.5          | 80÷380rpm             |
| AMT-64     | 5.50 kw/7.38 hp    | 2     | 1/7.24         | 80÷380rpm             |

## ATEX

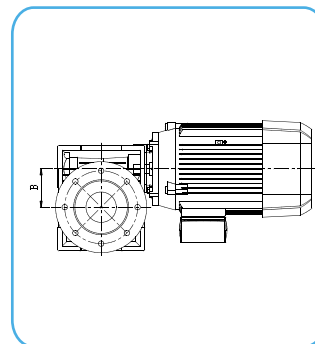
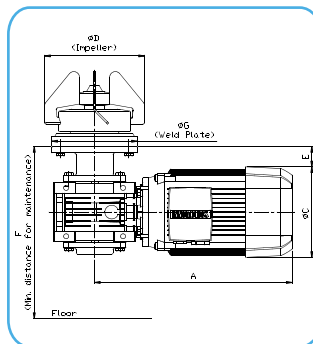
| Mixer size | Motor power rating | Poles | Gear box ratio | Min/max rpm for mixer |
|------------|--------------------|-------|----------------|-----------------------|
| AMTA02     | 0.12kw/0.16hp      | 2     | 1/7            | 80÷400rpm             |
| AMTA04     | 0.12kw/0.16hp      | 2     | 1/7            | 80÷400rpm             |
| AMTA06     | 0.25kw/0.34hp      | 2     | 1/7            | 80÷400rpm             |
| AMTA08     | 0.55kw/0.74hp      | 2     | 1/7            | 80÷400rpm             |
| AMTA12     | 0.75kw/1.00hp      | 2     | 1/7            | 80÷400rpm             |
| AMTA20     | 1.50kw/2.01hp      | 2     | 1/7            | 80÷400rpm             |
| AMTA32     | 2.20kw/2.95hp      | 2     | 1/7            | 80÷400rpm             |
| AMTA64     | 5.50kw/7.38hp      | 2     | 1/7            | 80÷400rpm             |

## DATASHEETS

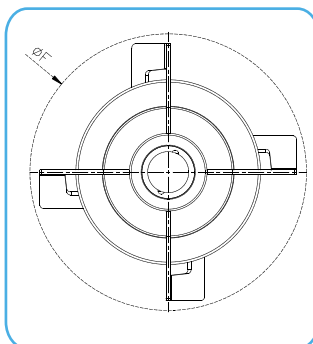
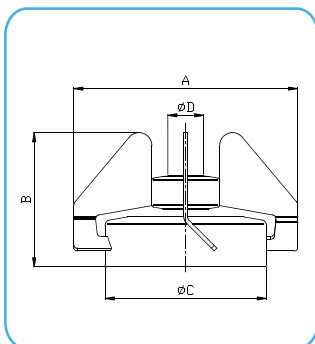


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# Nominal dimensions



| CODE             | A<br>mm | B<br>mm | ØC<br>motor | ØD<br>impeller | E<br>mm | F<br>mm | ØG<br>weld plate |
|------------------|---------|---------|-------------|----------------|---------|---------|------------------|
| AMT-02PBAM-AT-1B | 195     | 28      | Ø92 mm      | Ø82 mm         | 15      | 180     | Ø60 mm           |
| AMT-04PAAA-AT-1B | 220     | 30      | Ø110 mm     | Ø105 mm        | 12      | 200     | Ø70 mm           |
| AMT-06PAAS-AT-1B | 235     | 30      | Ø120 mm     | Ø130 mm        | 5       | 200     | Ø85 mm           |
| AMT-08PAAS-AT-1B | 290     | 50      | Ø140 mm     | Ø155 mm        | 33      | 250     | Ø125 mm          |
| AMT-12PAAS-AT-1B | 350     | 63      | Ø160 mm     | Ø175 mm        | 37      | 280     | Ø150 mm          |
| AMT-20PAAS-AT-1A | 410     | 75      | Ø175 mm     | Ø220 mm        | 31      | 290     | Ø185 mm          |
| AMT-32PAAS-AT-1A | 450     | 75      | Ø180 mm     | Ø280 mm        | 71      | 350     | Ø250 mm          |
| AMT-64PACW-AT-1A | 590     | 31      | Ø220 mm     | Ø290 mm        | 97      | 500     | Ø350 mm          |



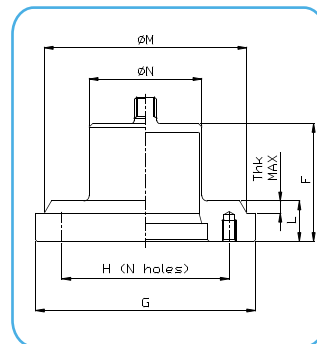
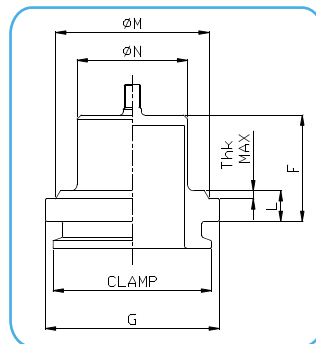
| CODE        | A<br>mm | B<br>mm | ØC<br>mm | ØD<br>mm | ØF<br>mm | Weight<br>Kg | Compatible<br>mixer type |
|-------------|---------|---------|----------|----------|----------|--------------|--------------------------|
| TM2/4-T-AR  | 82      | 58.5    | Ø63      | 22       | 95       | 0,49         | AMT-02                   |
| TM4/4-T-AR  | 105     | 76      | Ø74      | 22       | 120      | 0,85         | AMT-04                   |
| TM6/4-T-AR  | 130     | 81.5    | Ø88      | 22       | 145      | 1,05         | AMT-06                   |
| TM8/4-T-AR  | 155     | 103     | Ø109     | 28       | 175      | 1,80         | AMT-08                   |
| TM12/4-T-AR | 175     | 105     | Ø126     | 28       | 190      | 2,20         | AMT-12                   |
| TM20/4-T-AR | 220     | 119     | Ø164     | 40       | 235      | 3,20         | AMT-20                   |
| TM32/4-T-AR | 280     | 126.5   | Ø209     | 40       | 295      | 4,75         | AMT-32                   |
| TM64/4-T-AR | 290     | 168.5   | Ø209     | 40       | 310      | 7,05         | AMT-64                   |

DATASHEETS



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| CODE       | F<br>mm | G<br>mm | L<br>mm | Thk max<br>mm | Ø H<br>mm | Holes<br>qty x thread | Clamp  | Ø M<br>tank hole | Ø N | Weight<br>Kg |
|------------|---------|---------|---------|---------------|-----------|-----------------------|--------|------------------|-----|--------------|
| MM2/9/1-T  | 45      | 60      | 10      | 3             | -         | -                     | 1" 1/2 | 55               | 31  | 0,40         |
| MM4/9/1-T  | 47      | 70      | 10      | 4             | -         | -                     | 2"     | 60               | 40  | 0,50         |
| MM6/9/1-T  | 52      | 85      | 15      | 4             | -         | -                     | 2" 1/2 | 75               | 54  | 0,80         |
| MM8/9/1-T  | 67      | 125     | 23      | 7             | 95        | 8 x M8                | -      | 115              | 64  | 1,90         |
| MM12/9/1-T | 67      | 150     | 23      | 7             | 120       | 8 x M8                | -      | 140              | 84  | 2,50         |
| MM20/9/1-T | 70      | 185     | 23      | 7             | 160       | 9 x M8                | -      | 175              | 124 | 3,55         |
| MM32/9/1-T | 81      | 250     | 30      | 9             | 200       | 8 x M12               | -      | 240              | 166 | 8,70         |
| MM64/9/1-T | 137     | 350     | 50      | 15            | 250       | 8 x M12               | -      | 340              | 166 | 32,15        |

**Thk :** to be defined on purchase order phase  
higher thickness on request

DATASHEETS

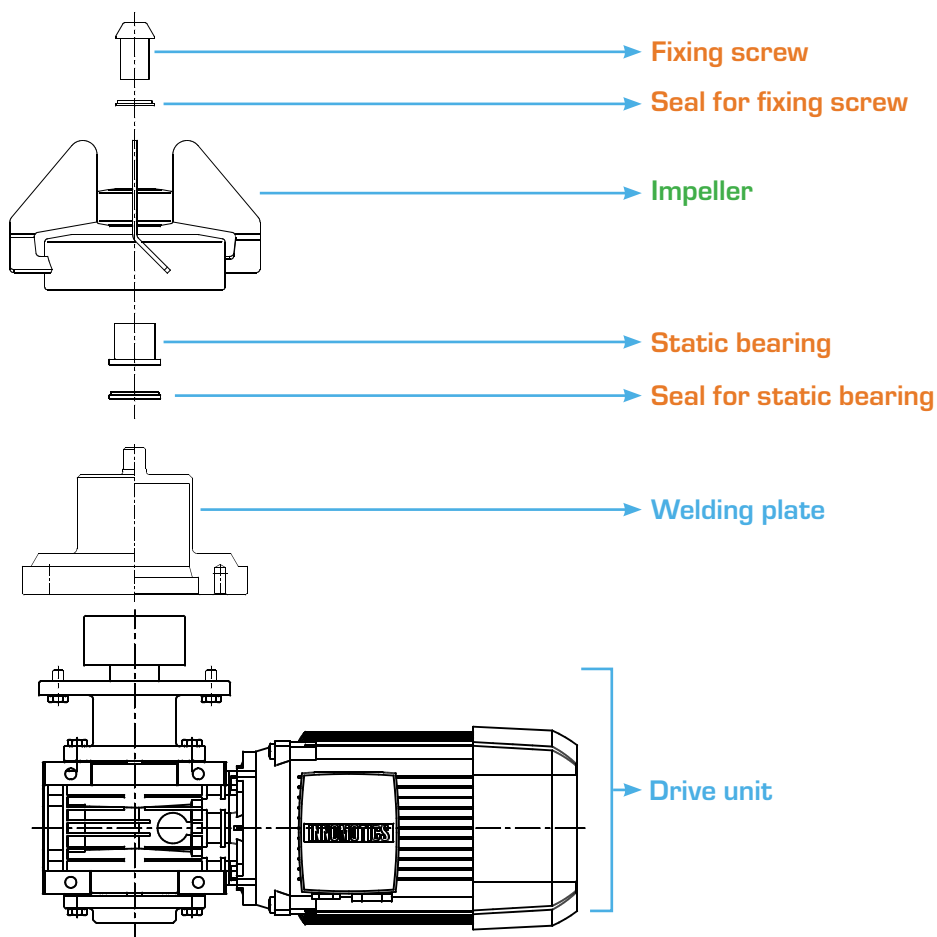


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# EXPLODED VIEW



| Size   | Impeller    | KIT static bearing |
|--------|-------------|--------------------|
| AMT-02 | TM2/4-T-AR  | KMT-04-AT          |
| AMT-04 | TM4/4-T-AR  | KMT-04-AT          |
| AMT-06 | TM6/4-T-AR  | KMT-04-AT          |
| AMT-08 | TM8/4-T-AR  | KMT-08-AT          |
| AMT-12 | TM12/4-T-AR | KMT-08-AT          |
| AMT-20 | TM20/4-T-AR | KMT-20-AT          |
| AMT-32 | TM32/4-T-AR | KMT-20-AT          |
| AMT-64 | TM64/4-T-AR | KMT-20-AT          |



**AMT** — **20** **P** **AAS** — **A** **T** **050** — **A** — **1** **A**

- ( — ) Standard
- ( **A** ) ATEX

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

**Welding Flange**

- **P** standard **NOT** included
- **L** for insulation tank **NOT** included

• **Drive unit**

| Size | Standard | ATEX |
|------|----------|------|
| 02   | BAM      | BAE  |
| 04   | AAA      | BAE  |
| 06   | AAS      | BAE  |
| 08   | AAS      | BAE  |
| 12   | AAS      | BAE  |
| 20   | AAS      | BAE  |
| 32   | AAS      | BAE  |
| 64   | ACW      | BAC  |

**Optional**

- A** speed counter
- B** dismantling system (only sizes 20-32-64)
- C** predisposition for speed counter
- D** speed counter + dismantling system
- E** predisposition for dismantling system

**Extension**  
mm of shaft lenght over than standard execution  
(if the extension is not requested, remove this part)

**Seal**  
**T** Modified PTFE - other material on request

**Bearings**  
- **A** tungsten carbide - **E** silicon carbide - **I** zirconium oxide

**A** 1.4404 (20-32-64)  
**B** 1.4435 (from 02 to 12)  
other on request

**1** Std. surface finish  
**5** Electropolish

DATASHEETS



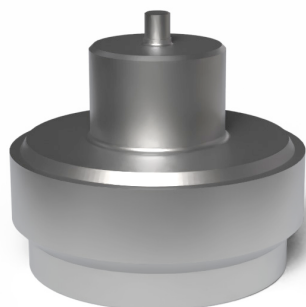
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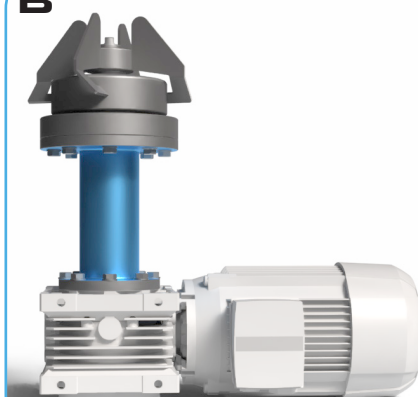
- Welding plate with higher thickness **(A)**
- Asportable welding plate
- Customized welding plate
- Shaft extension **(B)**
- Speed counter
- Dismounting system of magnetic coupling **(C)**
- 24Vdc motor
- Pneumatic motor
- Stainless steel motor
- Different drive unit
- Different RPM
- Electropolishing
- Other surface finishing
- Other materials
- Mounting tool **(D)**
- Welding tools **(E)**
- Customized impellers **(F)**
- ATEX

**Ex** II 2G Ex h IIB T4 Gb X  
II 2D Ex h IIIC T135°C Db X

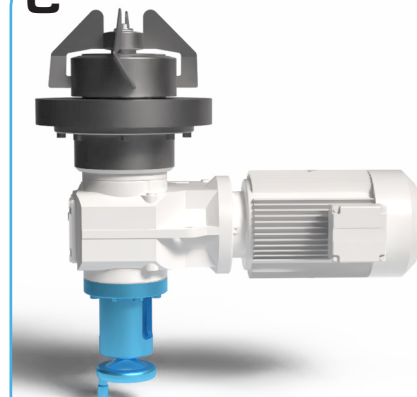
**A**



**B**



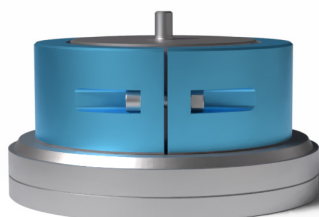
**C**



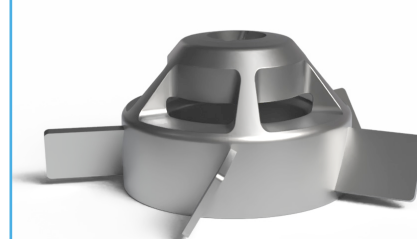
**D**



**E**



**F**



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