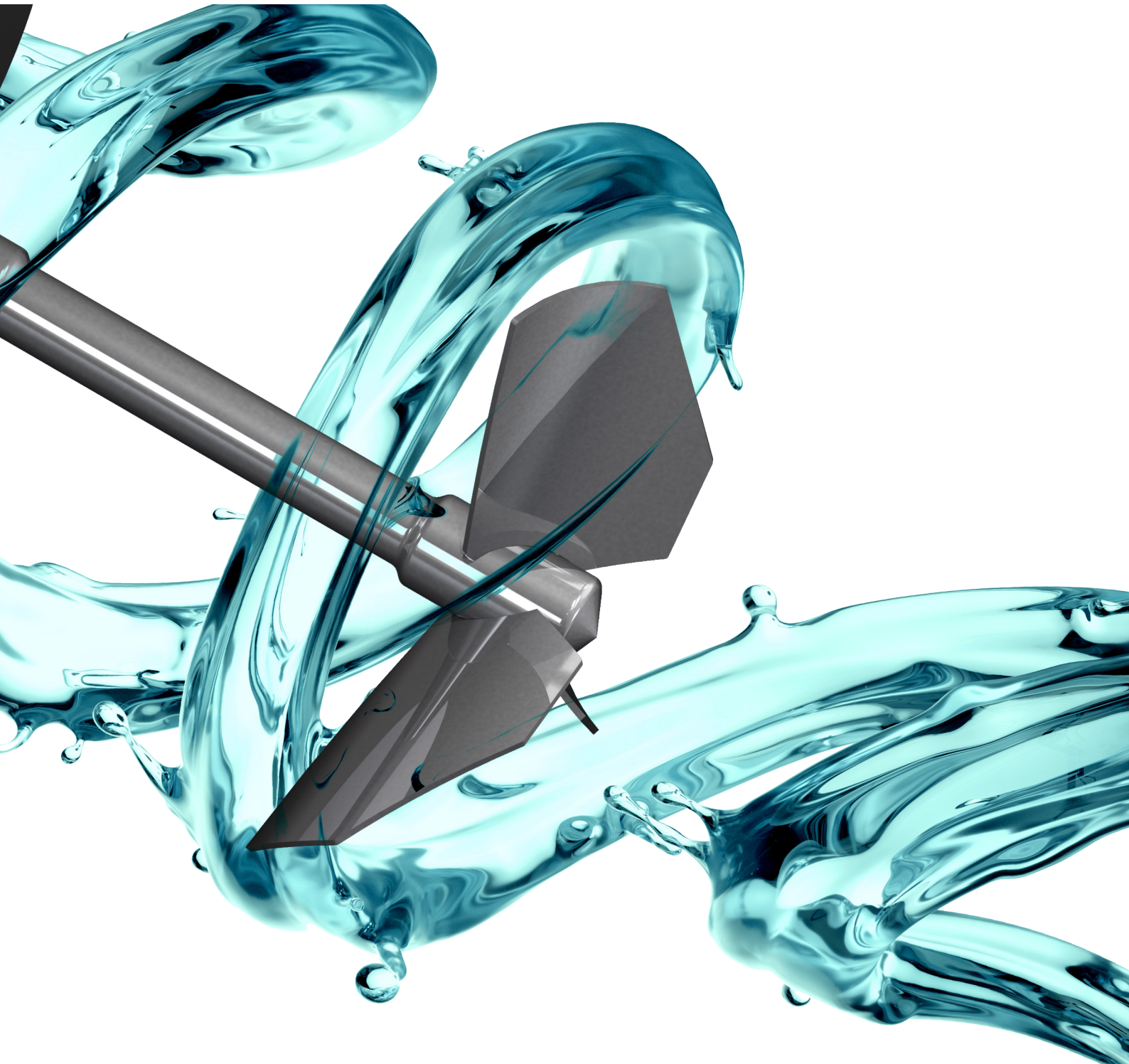
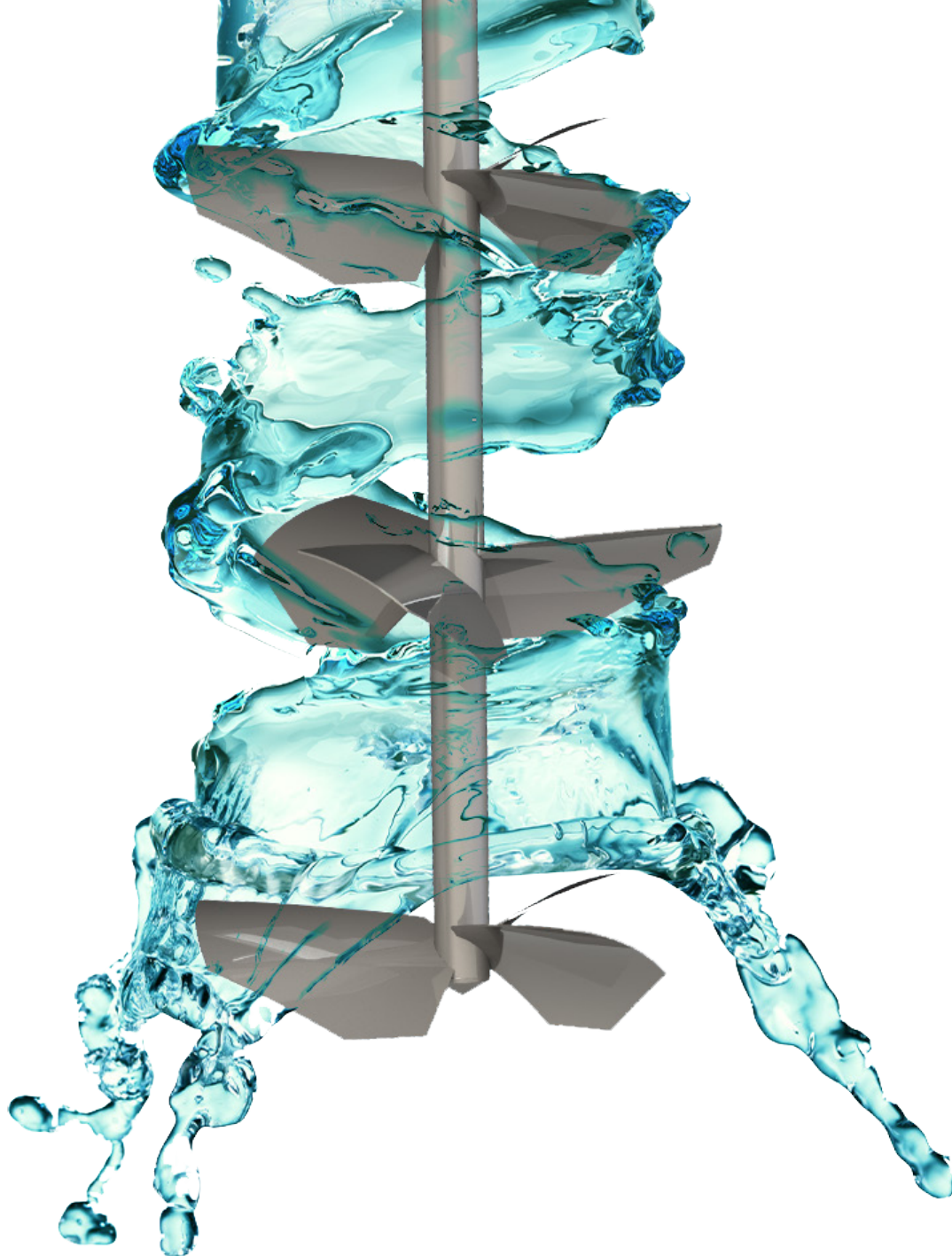


# MIXING ENGINEERING

Manufacturer of industrial Agitators





## OUR SECTORS OF ACTIVITY



Agri-food



Cosmetic & Pharmaceutical  
industries



Chemicals &  
Environment

# MIXING ENO



At PMS (Process Mixing Solutions), we believe that the overall performance of industrial processes depends on technological control.

PMS has been designing and manufacturing agitators for 40 years. We have acquired an in-depth understanding of our customers' processes and expertise in mixing techniques, including numerical modelling.

We are an SME with a staff of 25 people, supported by a French industrial group of 450 people. Our offices are located in the Paris region. The site groups together a team of engineers in the design office, a production workshop, a purchasing department and other support services, as well as our sales department, which employs 6 people.

We are continuing to develop our technical and commercial services with 3 strategic aims:

- Performance through the optimization of our solutions.
- Safety with proven design and manufacturing adapted to your needs.
- Efficiency while taking into consideration the overall cost of operation and the guarantee of optimal use of our equipment.

**15 000**

**Agitators installed worldwide**

**40**

**years of know-how**

**500**

**agitators manufactured per year**

## YOUR MIXING ENGINEERING

### CHARACTERISTICS OF OUR AGITATORS :

- Materials: 316L, 304L stainless steel (On request: 316Ti, Uranus B6, Hastelloy, etc.)
- Seals: gaskets, single or double / or / dry or lubricated, mechanical seals, etc...
- Pressure/vacuum: from absolute vacuum to 6 bars
- Temperature: up to 200°C
- Our material is available with a surface finish ranging from rough/brushed cleaned to mirror finish
- Our mixers are available in ATEX version (zone 1 or 21, zone 2 or 22 tank interior)
- Material traceability (3.1, CE, FDA, 1935/2004, USP class VI certified, etc.)

# GINEERING



## Easy Maintenance

The PMS «Eco-Design» solution

PMS integrates Eco-Design in the development of its technical proposal, and we are particularly sensitive to the difficulties encountered by users when conducting maintenance on agitators. Therefore we have developed an “Easy Maintenance” solution for our range of pendulum impeller agitators, as well as for our range of AHMix horizontal agitators.

The optimized design meets our customers' expectations in terms of :

- Ergonomics and safety, by limiting worker involvement outside the tank (except for AHMix) and by limiting the intervention plan;
- Significant reduction of maintenance costs and time;
- Increased productivity of facilities;
- Reduced handling requirements;
- This design also makes it possible to eliminate the gasket between the tank flange and the agitator flange, and it is available for sealing solutions using gaskets or mechanical seals.



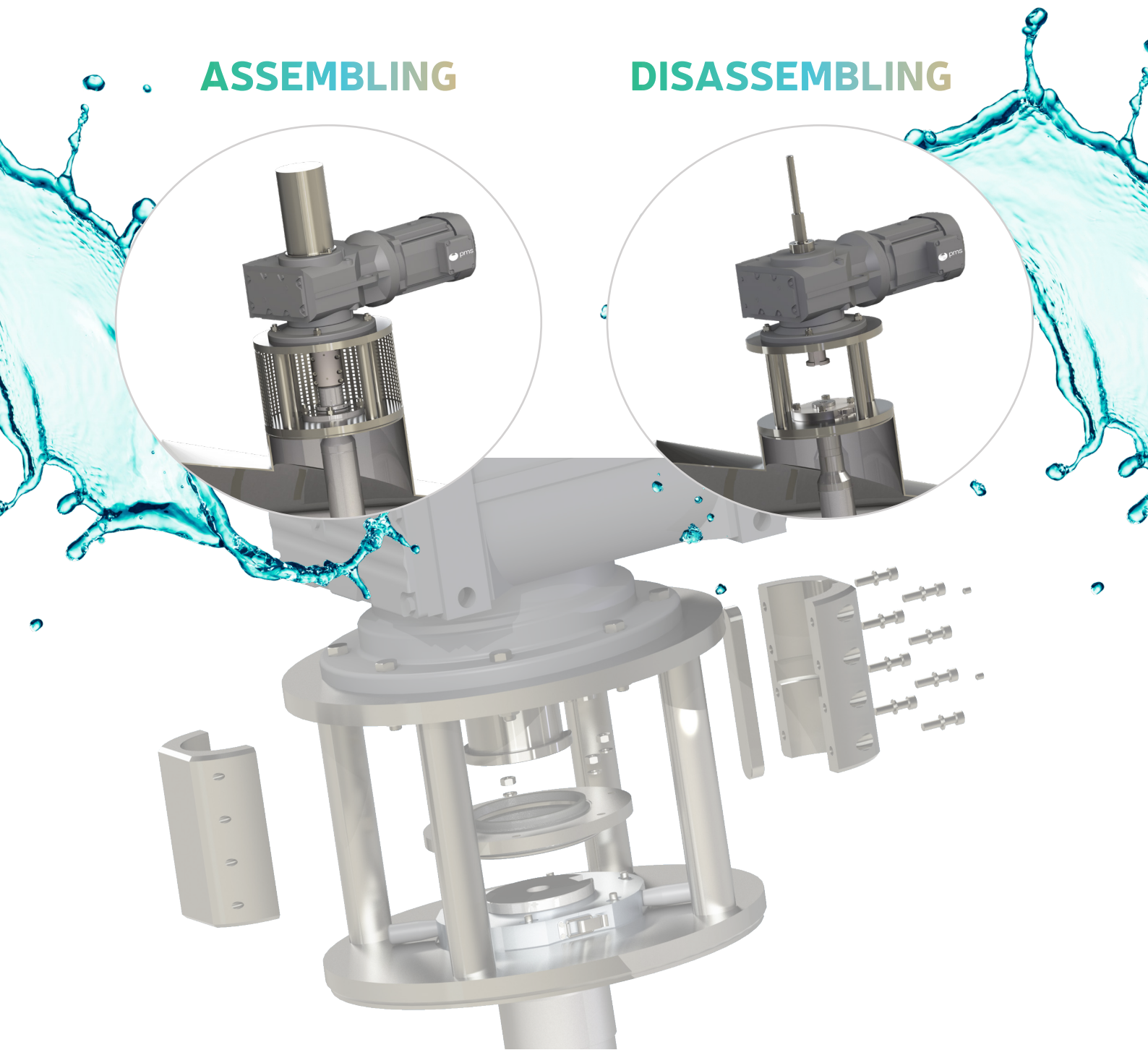


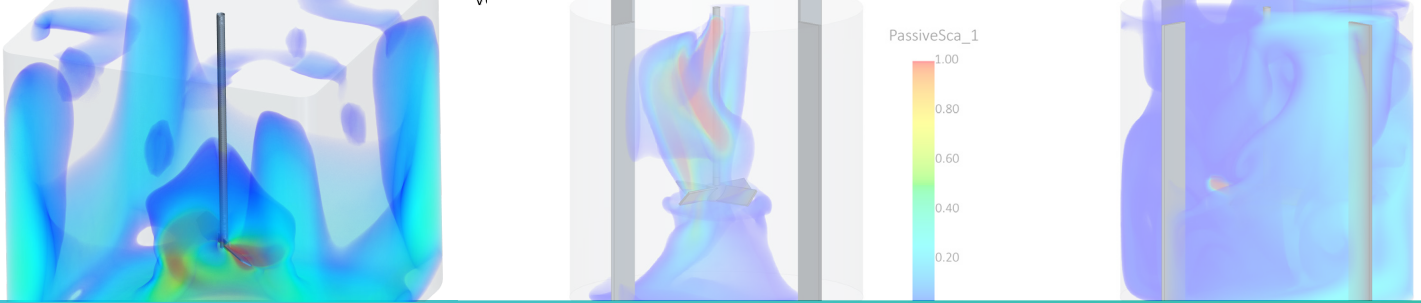
**IT COMPLIES WITH THE MOST DEMANDING INTERNATIONAL STANDARDS IN TERMS OF HYGIENIC DESIGN AND MANUFACTURING.**

Our sales team is at your disposal to propose these solutions for your planned new tanks, and also for revamping existing facilities. Clients who have already trusted us by integrating «Easy Maintenance» have seen a genuine return on investment right from the first maintenance operation.

**ASSEMBLING**

**DISASSEMBLING**





## CFD By PMS

### The digital simulation to further performance

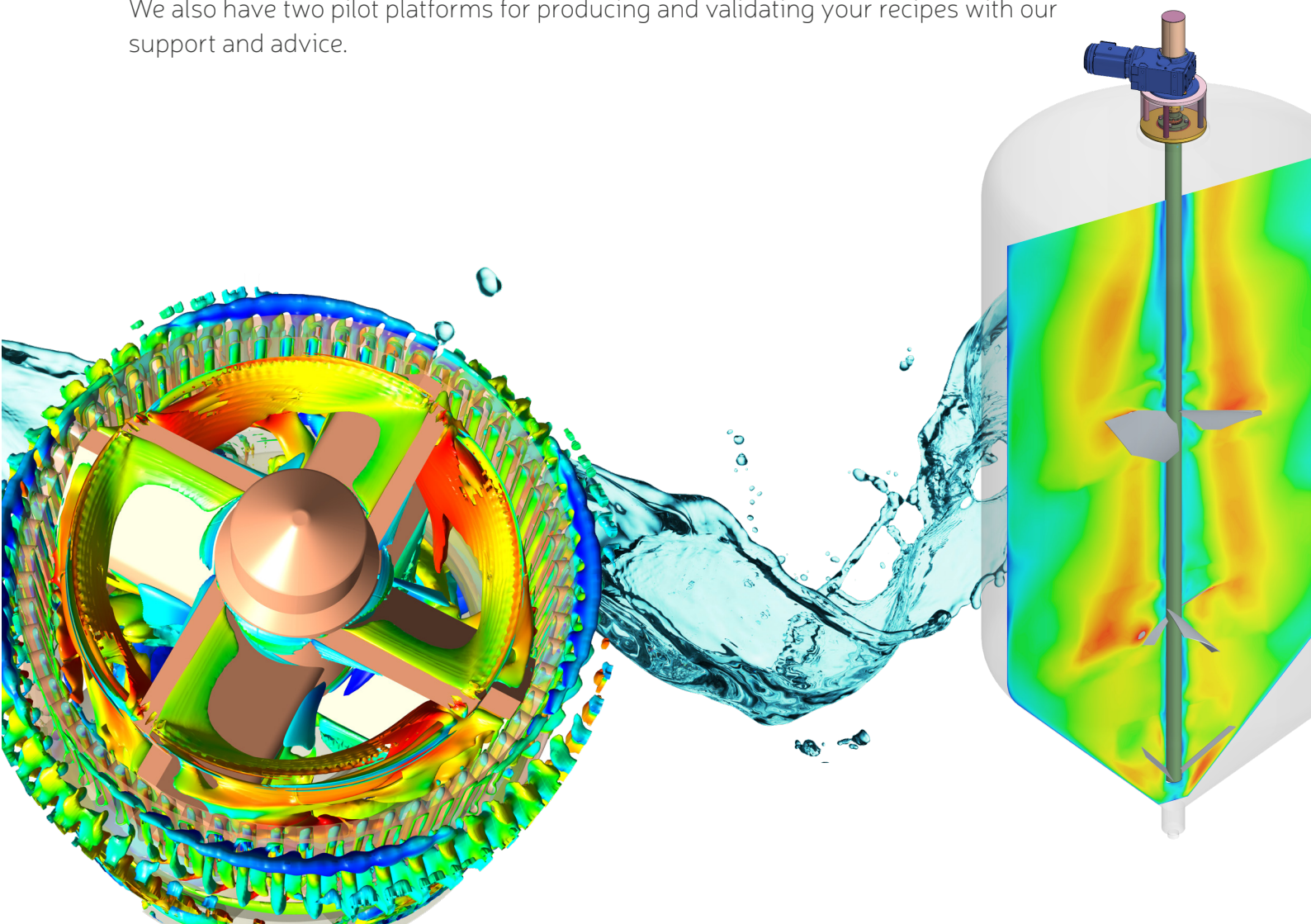
PMS has reinforced its expertise by acquiring digital CFD simulation software for fluid mechanics and by integrating a specialist engineer, thereby strengthening our position as agitation and mixing technology engineers.

The modelling system simulates the reality of the mixture and agitation by considering the different parameters such as temperature, pressure, pumping flow rate, particle size, viscosity, density, etc.

Digital studies are used to analyze behavior and complex scenarios by varying the acceptance parameters and agitation profiles in less time and with fewer constraints than in real-world tests.

CFD enables us to make useful observations to help decision-making when designing equipment and the steps of the recipe, with access to all data (pressure, concentration, temperature, etc.), and with the ability to vary them. PMS helps you develop the efficiency of your facilities.

We also have two pilot platforms for producing and validating your recipes with our support and advice.



# PENDULUM AGITATORS



## Impellers



- Hygienic design with impellers welded onto a shaft or hub, complying with the most rigorous international standards Profiling of the impeller & the characteristics of the devices according to the constraints and the functionality of the agitator
- Description of seals and characteristics of the control head according to the conditions of service
- Responsibility for the determination and performance of our agitation and mixing technology solutions, with commitment to results
- Easy Maintenance (optional)



- Robust construction with impellers on removable hubs
- Profiling of the impeller & the characteristics of the devices according to the constraints and the functionality of the agitator
- Description of seals and characteristics of the control head according to the conditions of service
- Responsibility for the determination and performance of our agitation and mixing technology solutions, with commitment to results
- Easy Maintenance (optional)

## SPECIAL AGITATOR APPLICATIONS

Mixing, Hydration, Holding in suspension, Maturation, Curdling, Scaling, Crystallization, Liming, Flocculation, Neutralization, Coagulation, Homogenization, Emulsion, Heat transfer, Dilution, Holding in suspension, Resuspension, Homogeneous maintenance, Homogenization of high viscosity media, Dispersion, Juice preparation (carbonation, liming, acidification), Remelting, Distillation, Agitator for any tank volume, Agitator for IBC-type containers.



## PENDULUM AGITATORS

### Anchor impellers

- Anchor-type proximity impellers
- Scraping anchor impellers
- Hygienic design that complies with the most rigorous international standards
- Description of seals and characteristics of the control head according to the conditions of service
- Profiling of the anchor impeller//anchor blade//anchor-type agitator & device characteristics according to the features of the agitator

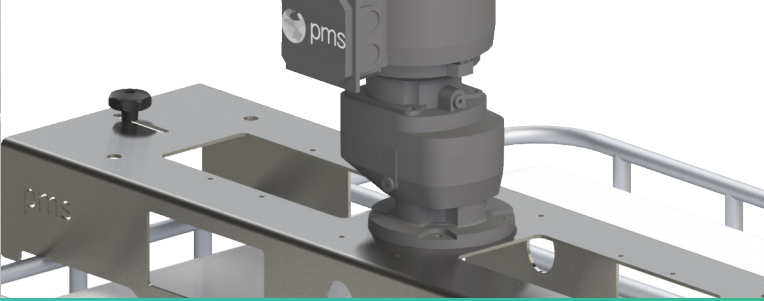


### Double Movement

- Independence of the geared motors to allow motion, direction and rotation speed
- Profiling of the impeller and anchor & the characteristics of the devices according to the constraints and the functionality of the agitator
- Description of seals and characteristics of the control head according to the conditions of service (by V-ring or Mechanical sealing)
- Hygienic design with impellers welded onto shaft or hub, complying with the most rigorous international standards
- Scraping the walls:
  - Optimized heat exchange
  - Reduction of product residues in the tank and CIP cycle time
- Scrapers:
  - Clipped, entirely cleanable assembly
  - Automatic system adjustment
  - Optimized orientation to facilitate emptying







## CUBIMIX®

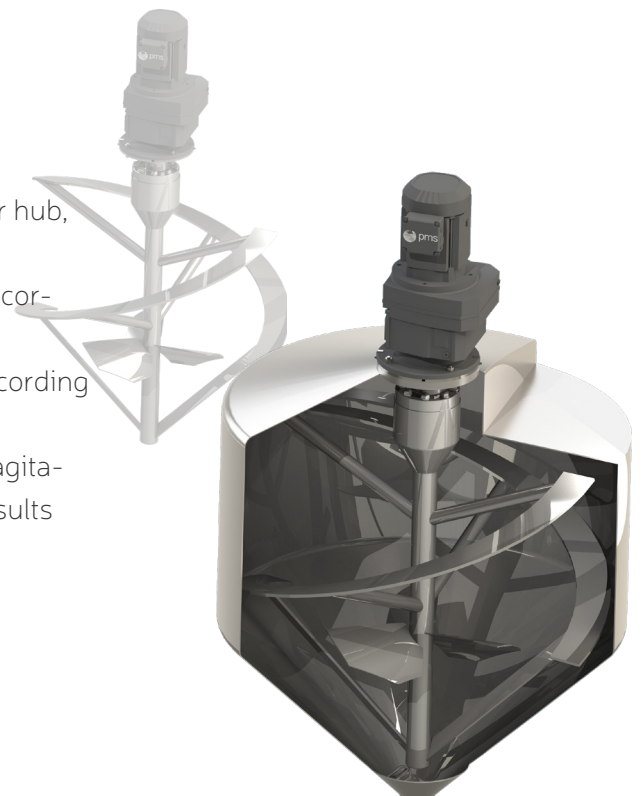


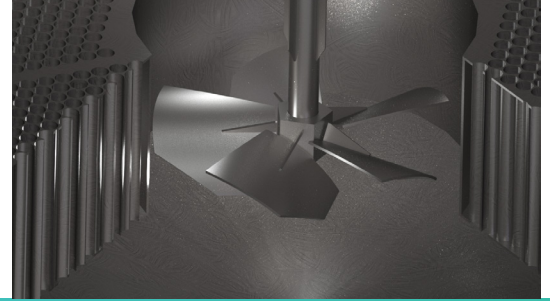
- Solid shaft
- “Thin blade” impeller profiling reducing the power needed for high mixing effectiveness, or with a higher shearing profile for resuspension
- High pumping rate
- Folding impellers
- Viscous products (<math><1,600\text{ Pa}</math>)
- Numerous options available: consult us



## Ribbon mixers

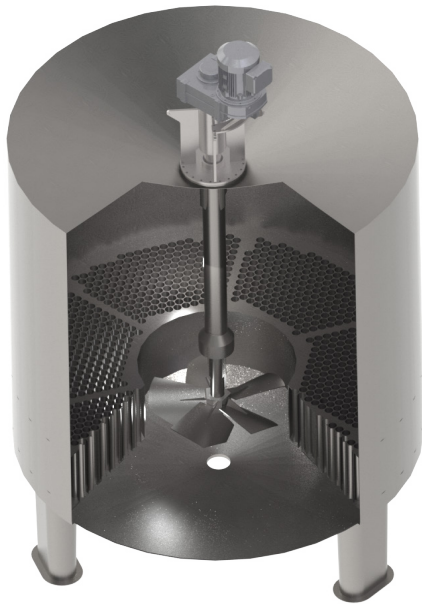
- Hygienic design with ribbons & impellers welded onto shaft or hub, complying with the most rigorous international standards
- Profiling of the impeller & the characteristics of the devices according to the constraints and the functionality of the agitator
- Description of seals and characteristics of the control head according to the conditions of service
- Responsibility for the determination and performance of our agitation and mixing technology solutions, with commitment to results





## PENDULUM AGITATORS

### Sugar mill (Vacuum pan)



- Robust construction suitable for intensive use during campaigns
- Double-bearing guide turret Online geared motors (a version with pulley-belt transmission is available)
- Description of seals and characteristics of the control head according to the conditions of service
- Responsibility for the determination and performance of our agitation and mixing technology solutions, with commitment to results
- Agitation and mixing technology for all stages of the sugar-making process



*Coupling head  
Gear pulley*



*Direct coupling head*

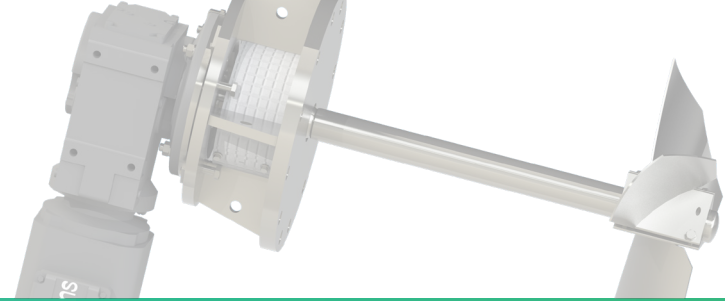
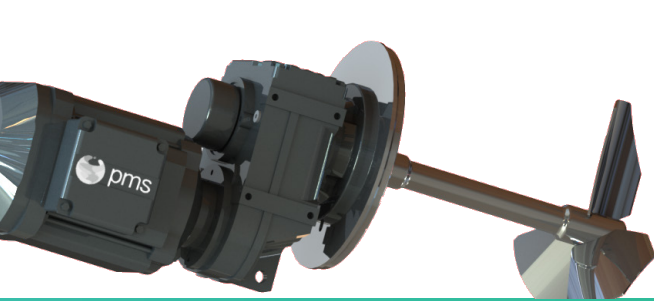
### Special designs

We design and manufacture agitators and mixers for all shapes and volumes of containers, vessels and tanks.

With our expertise in the field of hygienic agitation and mixing technology, we find solutions for very specific needs and issues.

We mobilize all our teams, from design to manufacturing, to identify and achieve the most efficient solution.

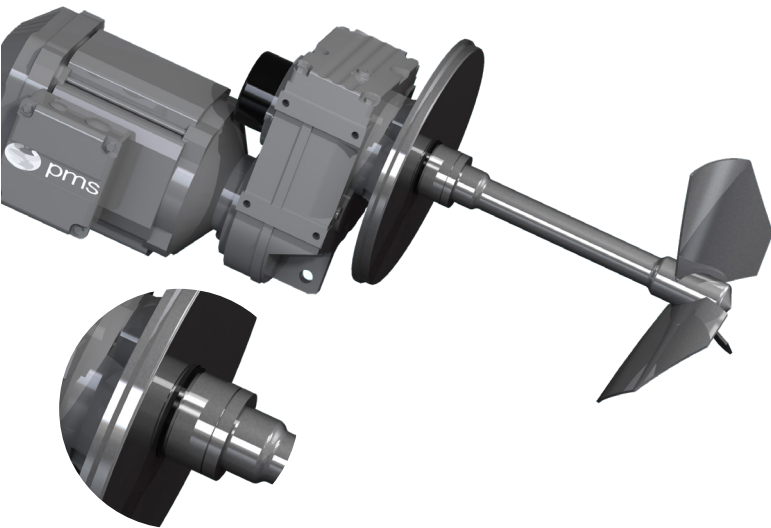




# HORIZONTAL AGITATORS



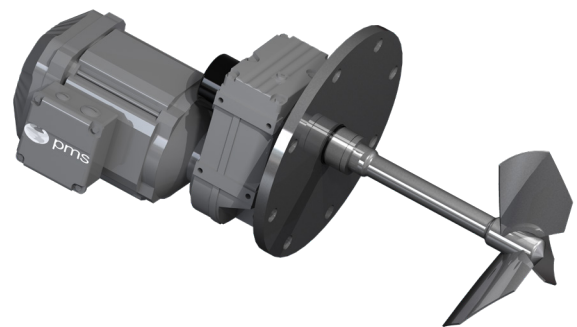
## AHMiX<sup>®</sup>



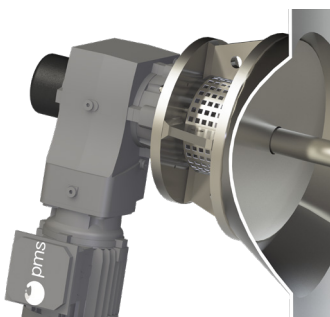
- Hygienic design
- Directly flange-mounted to be welded without seal
- Integrated in the shell or the bottom of the tank
- Easy Maintenance
- Special version and mounting on request

## Industrial applications

- Impeller profile for high pumping capacity
- Sealing by stuffing box or mechanical seal
- Flange-bolted mount
- Integrated in the shell or the bottom of the tank



## Special agitators

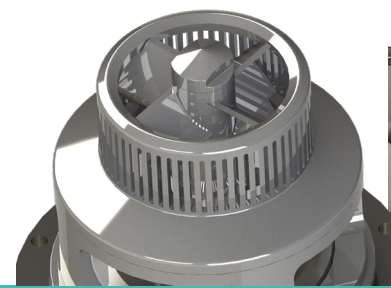


- Impeller profile for high pumping capacity
- Sealing by stuffing box or mechanical seal
- Flange-bolted mount
- Integrated in the shell or the bottom of the tank
- System designed to allow removal from a full tank for maintenance



# HORIZONTAL AGITATORS APPLICATIONS

Maintaining product homogeneity    Agitator for 10 to 250 m<sup>3</sup> tank (AHMiX)  
 Maintaining uniform temperature    Agitator for very large capacity tanks (from 10 to 2,500 m<sup>3</sup>)



## DISPERSERS

### Rotor Stator



- Hygienic design with patented dual flow system and optional double cage for improved performance
- Description of the size of the rotor stator to optimize shear and grain fineness
- Description of seals (with single or double mechanical seal) and characteristics of the control head according to the conditions of service
- Responsibility for the determination and performance of our agitation and mixing technology solutions, with commitment to results

### High speed

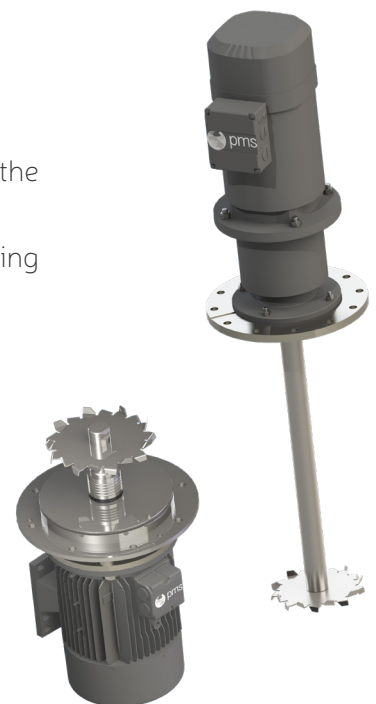
(Pendulum version or Tank bottom version) **Notched Turbines**



- Hygienic design that complies with the most rigorous international standards
- High-performance turbines
- Description of seals and characteristics of the control head according to the conditions of service
- Responsibility for the determination and performance of our agitation and mixing technology solutions, with commitment to results

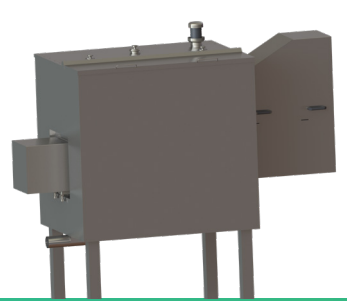
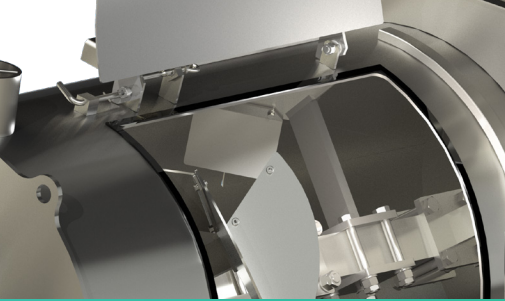


- Robust construction
- High-performance turbines
- Description of seals and characteristics of the control head according to the conditions of service
- Responsibility for the determination and performance of our agitation and mixing technology solutions, with commitment to results



Powder/liquid dispersion  
Deflocculation

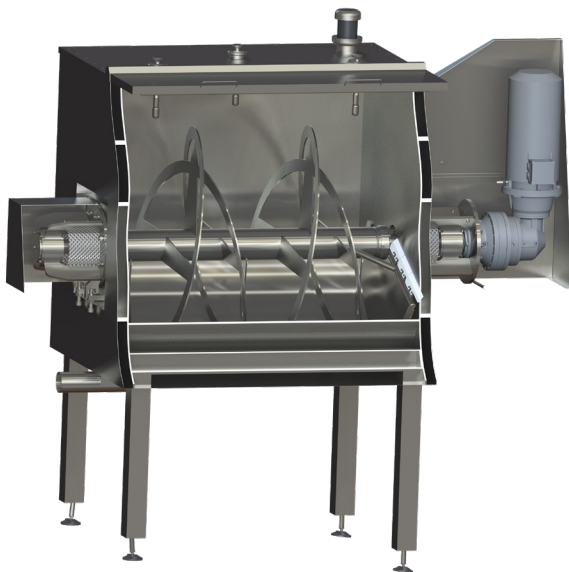
Emulsion  
Gas/liquid mixture, liquid/liquid mixture



## SPECIAL AGITATORS



### MHPH



- Continuous or discontinuous mixing production of intimate mixtures of powders, powders and masses, liquids and solids, etc.
- Hygienic design
- Producing a perfectly homogeneous product, without forming agglomerates, while obtaining reproducible batches
- Description of seals and characteristics of the control head according to the conditions of service
- Responsibility for the determination and performance of our agitation and mixing technology solutions, with commitment to results

### MHPC



- Continuous or discontinuous production of intimate mixtures of powders, of powders and masses, liquids and solids, etc.
- Producing a perfectly homogeneous product, without forming agglomerates, while obtaining reproducible batches
- Description of seals and characteristics of the control head according to the conditions of service
- Responsibility for the determination and performance of our agitation and mixing technology solutions, with commitment to results



## SPECIAL AGITATORS APPLICATIONS

Cheese-making

Mixing of food powders (flour, sugar, cocoa, semolina, yeast, herbal teas, etc.)

Wetting and impregnating food products (milk, proteins, miscellaneous dyes, spices, etc.)

Feedstuff for animals (molasses and molasses products, various mixtures before pressing or extrusion, etc.)

Clod breaking

Mixture of powders of all kinds (paint pigments, phytosanitary products, etc.)

Wetting and impregnating (dyes, sawdust, etc.)

Chemical reactions on powders (liming of dehydrated sludge, waste recycling, etc.)

Coatings



## Engineering & Consulting

### PMS Customer Service

With over 40 years of know-how and expertise, PMS is much more than a supplier for our customers: we are a true partner. We are committed to a lasting relationship, providing guidance from the draft stage of a project to its commissioning and supervision. This is characterized by our teams' expertise and by the provision of analytical and simulation tools. We are thus responsible for the result and for how our equipment performs.

### MAINTENANCE

Our long-standing presence in the food processing, cosmetics and pharmaceutical sectors compelled us very early on to take a rigorous approach to the traceability of our equipment. This allows us to quickly identify the PMS equipment in your processes and to discuss with you the best option for your maintenance and reconditioning operations. We can provide on-site expertise. If our proposal is accepted, we guarantee a quality service by our team of technicians and/or our authorized partners, allowing you to obtain equipment with the original design features.

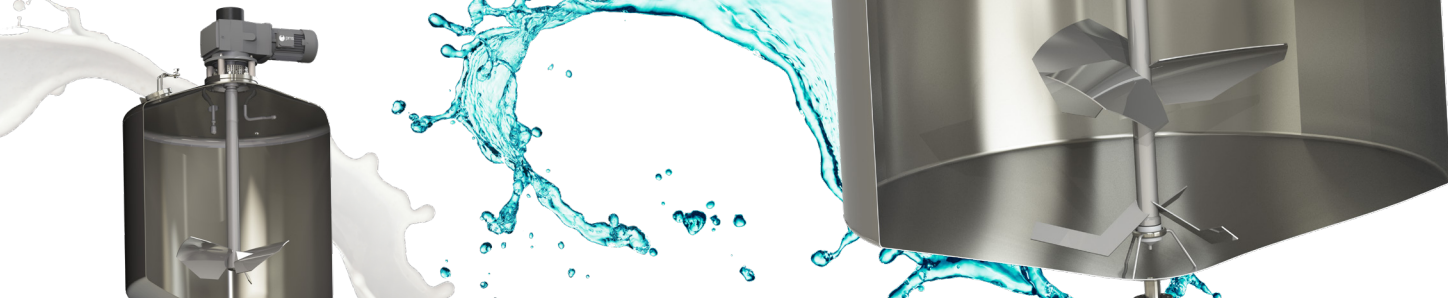
### SUPPORT

Customer satisfaction is ensured by a complete range of services including on-site support for determining and integrating our agitators. We also train our customers and partners in the use of our range of products and services. Our customers' expectations vary in terms of support and training depending on their profile and sector of activity.

We support your core processes and provide customized training, on site or in our workshops, to meet your expectations regarding the integration and maintenance of our equipment.

PMS has a remote web-based support platform to assist its customers while our mixers are being commissioned and maintained. The solution we have deployed improves collaboration and the sharing of knowledge between people both within our organization and at the client's site. This offers genuine physical-digital convergence in a collaborative multi-media space (OLED glasses, tablets, Smartphones, etc.) allowing us to instantly have the support of our in-house teams. Our after-sales service technician is also at your disposal to meet your needs for the definition of spare parts kits, on-site maintenance and revamping of your processes, including improving the performance of your agitation systems.





## SETTING UP

As part of our commitment to our agitation and mixing technology solutions, we provide support for commissioning equipment.

This may be limited to supervising the integration of our agitators and supervising the first tests, or it may mean having our technicians and certified partners providing complete services on site.

## RETROFITTING & REVAMPING

Our expertise in this field has the following objectives :

- improving existing processes to improve productivity;
- Adapting processes to new production needs and to respond to market expectations;
- optimizing energy use in response to new environmental standards;
- minimizing costs to adapt to a new equipment budget.

We provide you with our expertise in the field to determine your needs, for technical studies and design, and for equipment costing and on-site delivery.

## GLOBAL SERVICE NETWORK

With an international presence thanks to strong partnerships with global integrators and boilermakers who are active in export markets, and due to our referencing within large groups, PMS has gradually built its presence on the five continents. We are continually increasing our worldwide presence to achieve our development objectives, including by strengthening our export distribution network.



Your representative :



7, rue des Investisseurs - 91560 Crosne - France / Tel. + 33 (0) 1 69 49 24 60 / Fax +33 (0) 1 69 48 19 47  
Email [contact@processmixingsolutions.com](mailto:contact@processmixingsolutions.com) / [www.processmixingsolutions.com](http://www.processmixingsolutions.com)

SAS au capital de 48 000 € - RCS Evry B 950 028 423  
SIRET 950 028 423 00032 - APE 2899B - TVA 47 950 028 423