

Stirring Revolution

Centrifugal stirring device without blades



Japan patent No.4418019

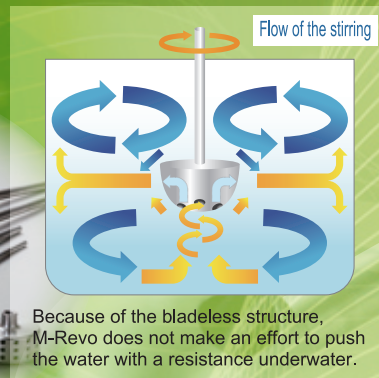
Japan patent No.4902770 (airation type)

Overseas patent granted in China, Canada, Singapore, Russia, Taiwan as of June 30, 2014

PCT applications have been made in other six countries



IPMS Inc.



Awards received

- 2014 - The 19th "Ando Momofuku" Prize - Encouragement Award for Inventions and Discoveries - from Ando Foundation
- 2014 - The 17th Food Industry Material Award from Japan Food Journal Co., Ltd.
- 2013 - The 43rd Food Industry Technology Service Award (Material, Machinery, and IT System Category) from Japan Food Journal Co., Ltd.
- 2013 - The Commendation for Science and Technology - Science and Technology Award for Technology Category - from The Minister of Education, Culture, Sports, Science and Technology
- 2013 - The 38th National Commendation for Invention - Prime Award - from The Japan Society for the Advancement of Inventions and Nikkan Kogyo Shinbun, Ltd.
- 2012 - National Invention Award - 21st Century Invention Encouragement Award

Safety

Because of bladeless structure, vortex generation and liquid scattering are limited during the stirring.

Quality improvement

M-Revo® enables "soft stirring" that has little damage to the object to be stirred because of smaller shearing power. In addition, it reduces generation of contamination, cavitations, and bubbles during the stirring.

Work efficiency

There is a capability to suppress vortex generation so that container capacity can be effectively utilized. The absorption power enables to stir the sedimentary liquid.

Energy saving

As M-Revo® can reboot in slurries, intermittent continuation operation is possible.

Innovativeness

In the case of airation type, the negative pressure can be controlled by the revolution speed so that pumpless or valveless airation is possible.

M-Revo® standard product list

LINEUP

Shape of head	Head diameter	φ34	φ48	φ64	φ90	φ120
Hemisphere-type	Model number	MB034304A MB034PVCA	MB048304A MB048PVCA	MB064304A MB064PVCA	MB090PVCA	MB120PVCA
	Shaft diameter	8 mm	8 mm	13 mm	18 mm	18 mm
	Shaft length	500 mm	500 mm	500 mm	700 mm	700 mm
Through-type	Model number	MB034304B MB034PVCB	MB048304B MB048PVCB	MB064304B MB064PVCB	MB090PVCB	MB120PVCB
	Shaft diameter	8 mm	8/13 mm ※3	18 mm	18 mm	22 mm
	Shaft length	500 mm	500/700 mm	700 mm	700 mm	1000 mm
General guidance of stirring capacity at the time of the standard stirring (i.e. uniforming of density) ※1		10ℓ ※2	20ℓ	40ℓ	100ℓ	200ℓ
Material		SUS304 or synthetic resin (PVC, etc.)			synthetic resin (PVC, etc.)	

※1 The revolving speed 500rpm assumed. The stirring power becomes stronger according to the revolving speed.

※2 In the case of hemisphere-type, it becomes around 5 liters.

※3 8mm-diameter shaft is good for a one-head setup while 13mm for a two-head setup.

For the standard products above, in the case of liquid with specific weight and viscosity at the same level as water, the revolution speed 1500rpm is assumed for M-Revo® with a head diameter φ34, φ48, and φ64, and 1000rpm for φ90 and φ120. As for the through-type, two pieces of the head can be installed to a shaft. Please directly inquire with us for further terms of use / container volume, or the special material designation.



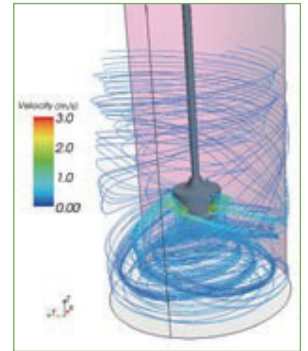
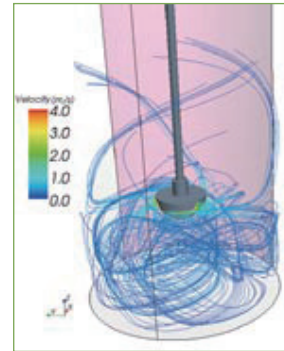
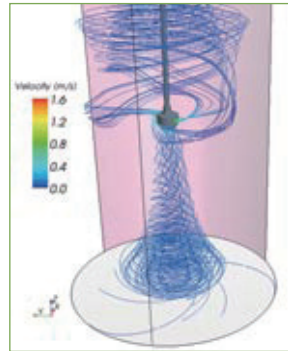
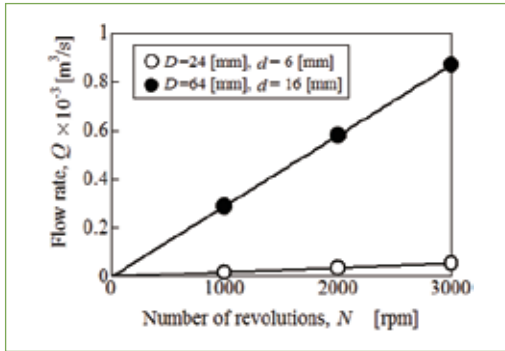
Number of suction ports : Number of discharging ports = 1 : 1
(The head is joined to the shaft with a setscrew).

[Characteristics]
Minimal shear power generation enables soft stirring. It has stronger stirring power than Through-type.



Number of suction ports : Number of discharging ports = 1 : N
(The shaft penetrates the head.)
(The head is joined to the shaft with a setscrew).

[Characteristics]
Because the shaft penetrates the head(s), the stirring position (s) can be changed, e.g. the top and bottom inversion, and/or plural setups. Flexibility is higher than Hemisphere-type.



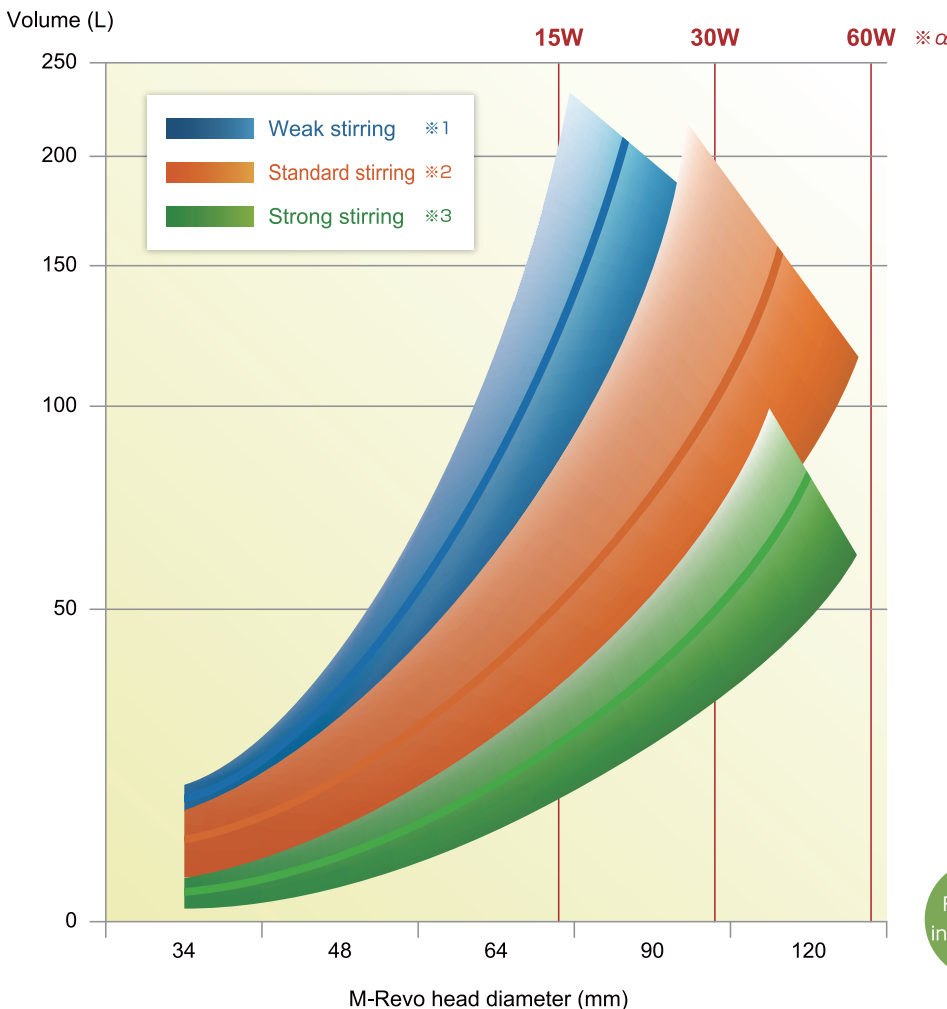
To elucidate stirring mechanism, stirring performance, and the most suitable shape of M-Revo®, revolving speed, streamline, speed ground, and pressure ground, etc., were scientifically analyzed. It has been proved that a jet flow of the liquid is proportional for number of revolutions and the characteristics do not change even if shapes of M-Revo® are different.

These results of research were presented in a hydraulic engineering section of the Japan Society of Mechanical Engineers. (November, 2012)

Table for choice of M-Revo® size

※ Stirring water at 500rpm assumed

SELECTION



※ α Consumption electricity reference level (DC motor)

Even though the reference level may be affected by losses from motor characteristics, reduction gear, or inclination, etc., please use them as your reference.

※ 1 Weak stirring (prevention of sedimentation)

Assuming water, all the liquid to be stirred circulates once a minute. A state of circular number 1 is assumed.

※ 2 Standard stirring (uniforming of density)

Assuming water, all the liquid to be stirred circulates three times a minute. A state of circular number 3 is assumed.

※ 3 Strong stirring (promotion of mixing and dissolving)

Assuming water, all the liquid to be stirred circulates five times a minute. A state of circular number 5 is assumed.

For more information

M-Revo

Q Search

<http://mrevo.jp>

Please inquire with us for further terms of use / container volume / M-Revo® head diameter, or the special material designation.



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SAVE ENERGY

Distributor

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