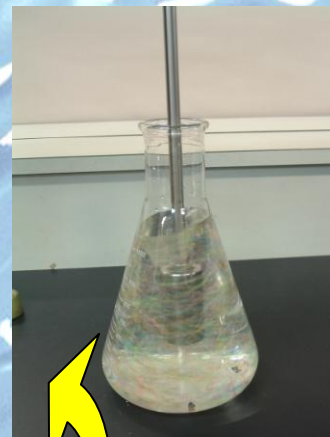


# InterCycloneMixer

**Fast Homogeneous Safe Quiet**

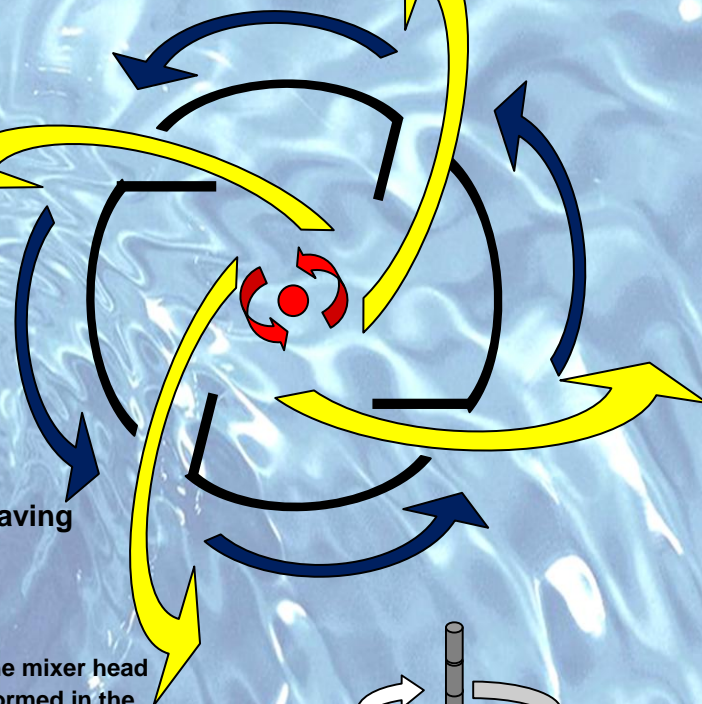
## What is InterCyclone?

InterCyclone (patent pending) is the dynamic mixing operation resulting from 'cyclonic' and centrifugal forces formed when the InterCyclone head is rotated.



## Advantages Over Conventional Mixing Heads

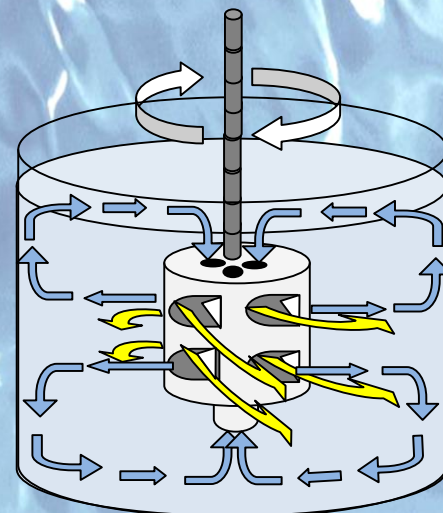
- 1. Safe:** No external blades means no injuries or container shavings
- 2. Quiet:** Minimal surface turbulence
- 3. Homogeneous:** InterCycloneMixers stir uniformly
- 4. Anaerobic:** Air not introduced during mixing
- 5. Aerobic:** Air introduced during mixing
- 6. Stable:** No foam during anaerobic mixing
- 7. Powerful:** Mixes liquids having high viscosity and/or large differences in specific gravity
- 8. Mixing Capacity:** Mixes large or small volumes
- 9. Simple to Clean:** Wash with methanol then water
- 10. Energy efficient:** No external blades means energy saving



## How does it work?

When the partially enclosed InterCycloneMixer head rotates:

- 1.** A "cyclone" is generated at the center of the enclosed space in the mixer head by the rear surface of fins that are disposed inwardly at windows formed in the side of the head.
- 2.** A strong suction is thus created which draws in liquid through perpendicular suction ports located in the upper and/or lower surfaces of the InterCycloneMixer head.
- 3.** At the same time, the front surfaces of the fins radially expel the drawn in liquid out through the head windows by centrifugal force. This continuous cycle of suction and expulsion ensures a fast and homogeneous mixing operation.
- 4.** The strong acceleration generated by the above, though quiet, is so robust that liquid in all corners of a container is reached and drawn into the mixing cycle.



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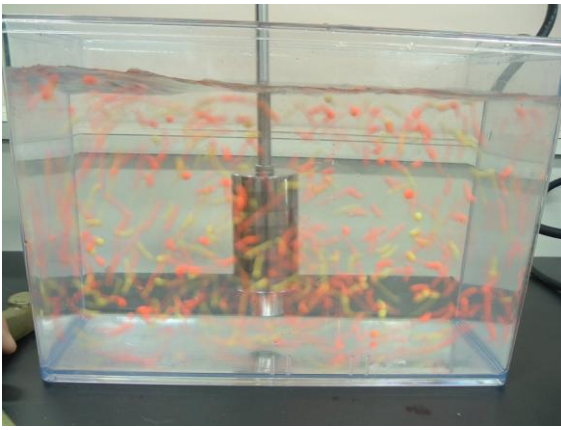
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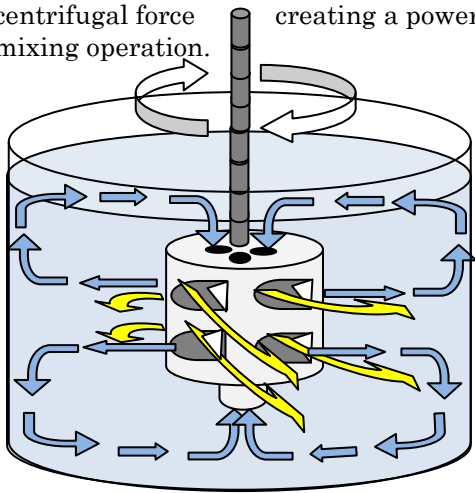


# InterCycloneMixer

## Basic InterCyclone Mixing Modes

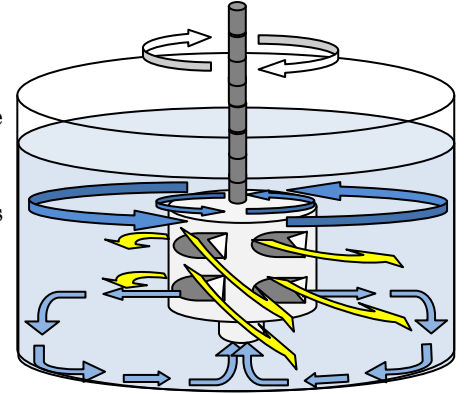


**Full-Mixing Mode:** InterCyclone is generated inside the Full-Mix head which creates a strong perpendicular suction via suction ports vertically formed in the top and bottom surfaces of the head. The liquid drawn into the head is then dispersed horizontally by centrifugal force creating a powerful mixing operation.



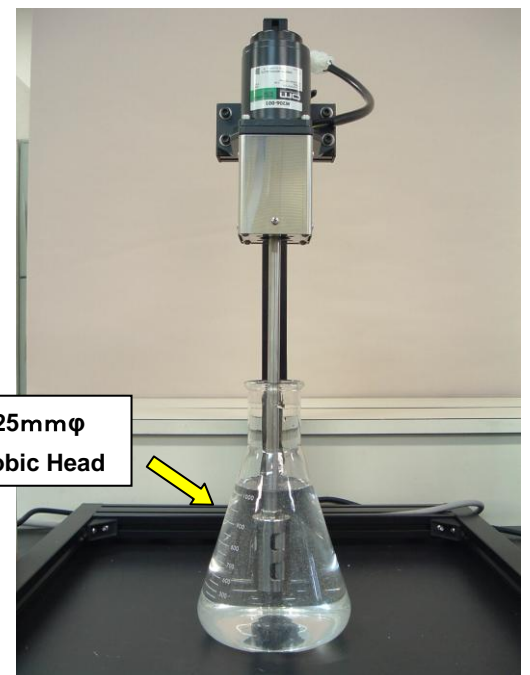
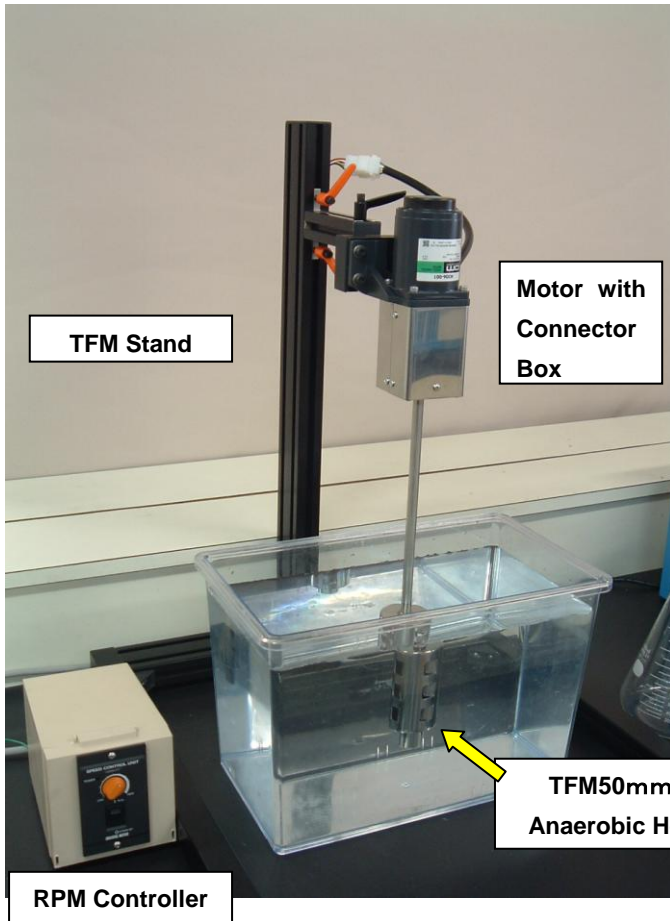
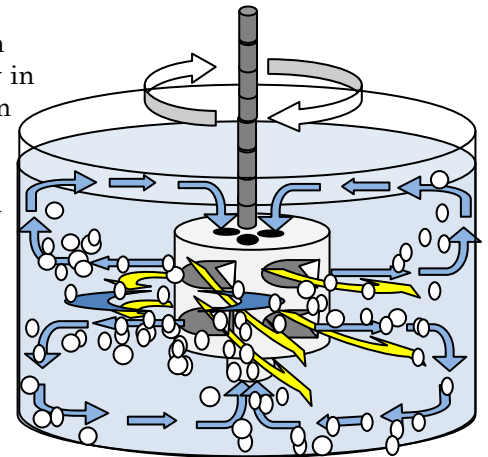
### Anaerobic Mixing Mode:

Using the Anaerobic head, the liquid is thoroughly mixed without bubbles forming as there are no suction ports in the top surface of the Anaerobic head. As a result, a quiet mixing occurs on the liquid surface. This head also manifests a very effective anaerobic bacteria mixing operation.



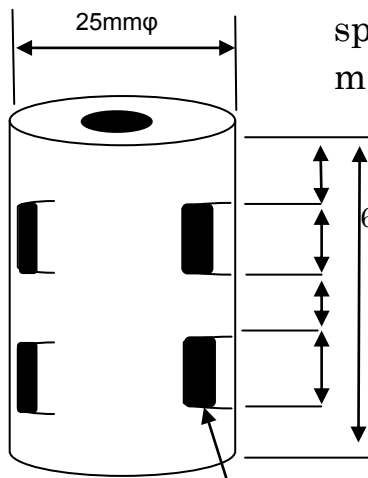
### Aerobic Mixing Mode:

The Full-Mix head is rapidly rotated near the surface of the liquid creating a strong swirling current. The suction ports in the top surface draw in air which is then dispersed in the liquid. The head may be immersed more deeply in the liquid if a hollow mixing head shaft is used to intake and disperse the air in the liquid.



# Various Standardized Products Are Easily Custom Made

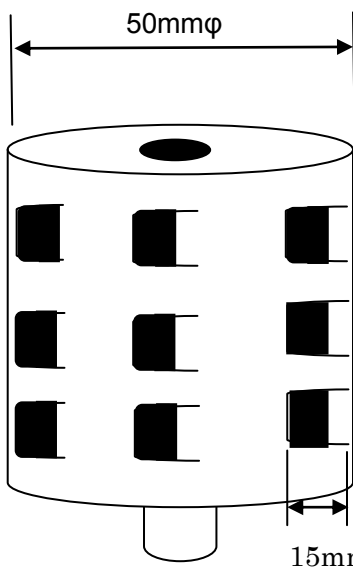
Flask Mixing Type / TFM25m



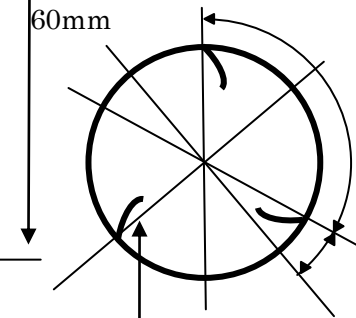
## Custom Made

Whether you employ the standard specification heads or ask for custom manufacturing, the InterCycloneMixer manifests superior mixing and reproducibility when scaling-up from the laboratory to full production.

Anaerobic / TFM50m



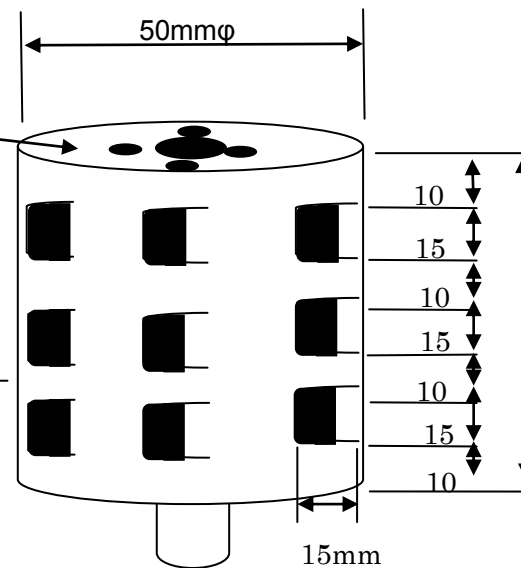
Mixing Window



Mixing Fin

Aerobic Full-Mixing Mode / TFM50m

Upper Surface Suction Ports

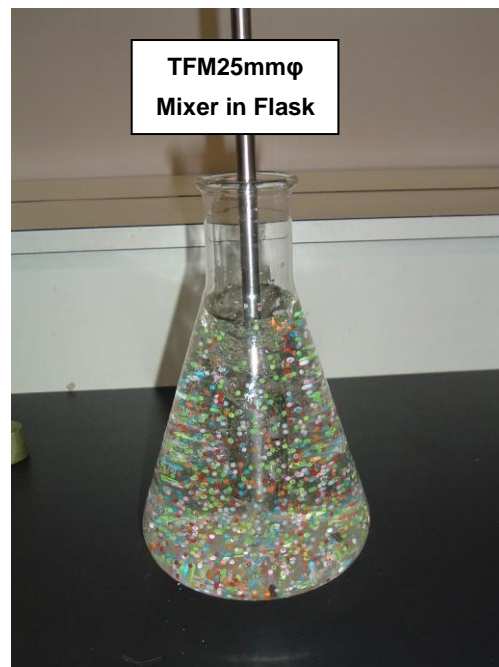
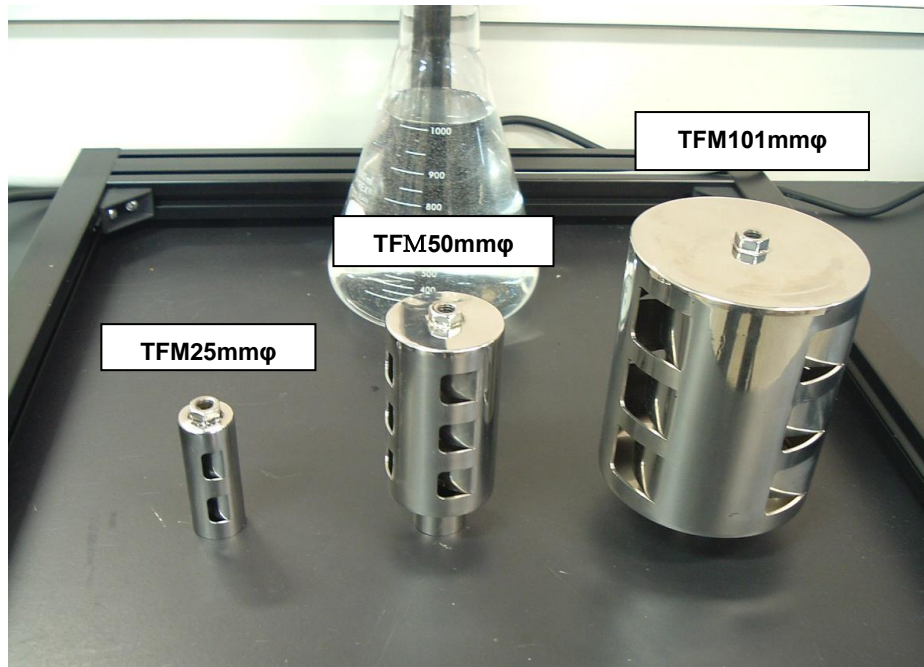


### InterCycloneMixer Specifications

RPM (Using 9 Watt Motor)	50 Hz / 90~1300 rpm
	60 Hz / 90 ~1500 rpm
No. of InterCycloneMixer Heads and Mixing Windows	25 mm $\phi$ : MW x 6
	50 mm $\phi$ : MW x 12
	101.6 mm $\phi$ : MW x 12
	216 mm $\phi$ : MW x 12
Shaft Length	300 mm or 600 mm
Stand Dimensions	H:650mm W:500mm D:500mm
Max Elevation	$\approx$ 230 mm
Head /Shaft Material	SUS 304 / SUS 316



Hand Held Mixer



Order No	Product Name	Material	Mixing Windows	Fin Size mm <sup>2</sup>	Upper Suction ports	Φx Height (mm)	Mix Volume (liter)	Power Consumption rpm/H2O	Price (JP Yen)
1	TFM25m304	SUS304	6	2,025	0	25x60	0.5 ~ 10	0.12A / 1000rpm	TBA
2	TFM25mFullMix304	SUS304	6	2,025	4	25x60	0.5 ~ 10	0.12A / 1000rpm	TBA
3	TFM50m304	SUS304	12	2,700	0	50x85	10 ~ 30	0.20A / 1000rpm	TBA
4	TFM50mFullMix304	SUS304	12	2,700	4	50x85	10 ~ 30	0.20A / 1000rpm	TBA
5	TFM101m304	SUS304	12	9,000	0	101x115	30 ~ 60	0.31A / 500rpm	TBA
6	TFM101mFullMix304	SUS304	12	9,000	4	101x115	30 ~ 60	0.31A / 500rpm	TBA
7	TFM216m304	SUS304	12	28,800	0	215x200	60 ~		TBA
8	TFM216mFullMix304	SUS304	12	28,800	4	215x200	60 ~		TBA
9	TFM25m316	SUS316	6	2,025	0	25x60	0.5 ~ 10	0.12A / 1000rpm	TBA
10	TFM25mFullMix316	SUS316	6	2,025	4	25x60	0.5 ~ 10	0.12A / 1000rpm	TBA
11	TFM50m316	SUS316	12	2,700	0	50x85	10 ~ 30	0.20A / 1000rpm	TBA
12	TFM50mFullMix316	SUS316	12	2,700	4	50x85	10 ~ 30	0.20A / 1000rpm	TBA
13	TFM101m316	SUS316	12	9,000	0	101x115	30 ~ 60	0.31A / 500rpm	TBA
14	TFM101mFullMix316	SUS316	12	9,000	4	101x115	30 ~ 60	0.31A / 500rpm	TBA
15	TFM216m316	SUS316	12	28,800	0	215x200	60 ~		TBA
16	TFM216mFullMix316	SUS316	12	28,800	4	215x200	60 ~		TBA
Mixer Stand									TBA
Motor : 1300RPM (+ Control )									TBA
High Speed DC Motor : 3000RPM (Control + Speed Meter)									TBA
Shaft (300 mm)									TBA
Shaft (600 mm)									TBA

\* Price may change without notice.

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