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Sapporo Office  Kyushu Office

Your Reliable Partner for Total Process Solution in

Mixing  Dissolution  Homogenization  Emulsification

Damanizer  VMIX
Dynamixer Processor  USmix
Emulder  High Emulder
Homogenizer
Mixing Dissolving Dispersing Emulsifying Homogenizing - A Total Solution Package - I F M

**Process**
- Soy bean milk Soup Dressing
- Health foods Liquid food
- Flavor Cosmetic
- Functional beverage Health foods
- Fat and Oil Chemical

**Products**
- Soy bean milk Soup Dressing
- Health foods Liquid food
- Flavor Cosmetic
- Functional beverage Health foods
- Fat and Oil Chemical

**Tank for Dissolution / Mixing / Blending**

**V MIX**

**Dissolution/Mixing**
- Base powder Fats and Oils dissolution
- Defatted flour Ingredient dissolution
- Powder dissolution
- Mixing

**Mixing/Blending**
- Blending
- Fermentation Extraction

**Dissolution Blending**

**Emulsification/Homogenization**
- Emulsification
- Homogenization
- Micronization

**Deaeration/ Degassing**

**Heating&Cooling Pasteurization**

**Filling**

**V MIX**

**Process Products**
- Soy bean milk Soup Dressing
- Health foods Liquid food
- Flavor Cosmetic
- Functional beverage Health foods
- Fat and Oil Chemical

**Functional Tank system**

**Pump for Emulsification/Dissolution system**

**Mixing**
- Parts Mixing
- Mixing for liquid with solid
- Mixing for liquid with high viscosity
- Two liquid mixing/Oilwater
- Mixing without shearing

**Crushing**
- Crushing for frozen cheese block
- Crushing for vegetable
- Crushing for vegetables
- Crushing for vegetables
- Crushing for vegetables
- Crushing for vegetables

**Dissolution**
- Powder dissolution with shearing
- Powder dissolution without shearing
- Self-grinding capability for powder

**Emulsification**
- Preliminary emulsification
- Finishing emulsification for dressing
- Emulsification for additives
- Emulsification for emulsification

**Transporting capability for liquid**

**Available for setting up product line with ease**

**Corresponding to the production of a variety of products in small amounts**
**Damanizer**

**Powder Dispersion and Dissolution**

- **Flow**
- **To next process**

**Block Flow**

- **Powder**
- **Liquid**

**Dissolution part detail**

- **Casing**
- **Powder & Liquid**
- **Pre-dissolution**
- **Main-dissolution**

**Dissolution system by 2 steps of rotor**

- **Powder in Hopper**
- **Rotary valve**
- **Powder shut valve**
- **Inner circulation system**

**Solution exit & back to inner circulation**

**Separator**

**Dissolution part**

- **Finish!**

**V MIX**

**All Purpose Versatile Mixer**

- **Efficient mixing by the arm blades**
- **Strong discharge from the Bottom blade**
- **Available for high viscosity products**

**• Characteristics**
- Changeable Volume: 20% ~ 120%
- Wide range of Viscosity: 1 ~ around 50,000mPa-s
- Shorter time to mixing: Half to Paddle Blade
- Less involvement of air with slow rotation
- Uniform mixing for slurry

**• Comparison at varying quantity mixing**

(V MIX vs Standard Double Paddle Blade, H=Liquid depth, D=Inner diameter of tank)

<table>
<thead>
<tr>
<th>Powder</th>
<th>Liquid</th>
<th>Before supplying decoloring liquid</th>
<th>After 5 sec</th>
<th>After 15 sec</th>
<th>After 35 sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMC solution liquid (Viscosity 500mPa.s), ( \rho_{v}=0.3) k( \ell)/m^3, Iodine decolorization reaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( V \text{ MIX} ) vs Standard Double Paddle Blade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( H=800 \text{ mm}, D=1900 \text{ mm} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Field**

- Beverage, Diary, Seasoning, Brewing, Confectionery, Bakery, Pharmaceutical, Chemical, etc

**Shape**

- Single cylindrical

**Shaft sealing**

- Mechanical seal

**Solution discharge Qty**

- 3000kg/hr (It depends on products & mixture)

**Powder suction speed**

- 25kg/min

**SUS304/O ring NBR**

**Field Dipersion and Dissolution**

- Inlet
- Circulation
- Rotary valve
- Dissolution part
- Rotary valve
- Outer surface : #320 buff polish
- Inner/Outer surface : #320 buff polish

**Finish!**

**Specifications**

<table>
<thead>
<tr>
<th>Capacity(L)</th>
<th>Inner Diam (mm)</th>
<th>Motor power(kW)</th>
<th>Total height(mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>1300</td>
<td>0.55</td>
<td>2710</td>
</tr>
<tr>
<td>1500</td>
<td>1500</td>
<td>1.1</td>
<td>3950</td>
</tr>
<tr>
<td>2000</td>
<td>1700</td>
<td>2.2</td>
<td>4900</td>
</tr>
<tr>
<td>2500</td>
<td>1900</td>
<td>2.2</td>
<td>5150</td>
</tr>
<tr>
<td>3000</td>
<td>2400</td>
<td>5.5</td>
<td>1050</td>
</tr>
</tbody>
</table>

**CMC solution liquid (Viscosity 500mPa.s), \( \rho_{v}=0.3\) k\( \ell\)/m^3, Iodine decolorization reaction**

**V MIX Application Sample**

**Mixing time comparison**

(V MIX vs Standard Double Paddle Blade)

<table>
<thead>
<tr>
<th>Liquid quantity &amp; speed</th>
<th>Before supplying decoloring liquid</th>
<th>After 8 sec</th>
<th>After 15 sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMC solution liquid (Viscosity 500mPa.s), ( \rho_{v}=0.3) k( \ell)/m^3, Iodine decolorization reaction</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Dissolution part**

- Powder & Liquid Pre-dissolution
- Main-dissolution

**Solution exit & back to inner circulation**

**Separator**

**Dissolution part**

- Finish!
## All in one solution in one tank.

Intensive Shear, Disperse, Dissolve, and Mixing with optional thermal process - heating and cooling.

### Dynamixer & Dynamixer Processor

- **Crushing and dissolving 20kg of frozen cheese block**
- **Discharger for crushing small solids and dispersing powder**
- **Discharger for crushing bigger solids**
- **Double-cup Discharger for dissolving smaller solids and pastes**

### USmix

- **Applications**
  - Emulsification for dressing
  - Emulsification for paste
  - Mixing, Dispersing and Dissolving
  - Homogenization & Mixing
  - Dissolution
  - Cooling
  - Crushing
  - Micronization

### Example

- **Capacity**
  - 500L (Dissolution tank & USmix)

### Structure

- Emulsification device at the bottom.
- Mixing agitator at the upper.

### Feature

- Dissolve~Emulsification~Mixing all in one tank.
- Easy CIP

### USmix Bottom Agitating Device Line-up

### USmix Bottom and Upper Agitating Device Line-up

---

<table>
<thead>
<tr>
<th>Scale</th>
<th>Under 1000L</th>
<th>Over 1500L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter (mm)</td>
<td>700</td>
<td>1500</td>
</tr>
<tr>
<td>Height (mm)</td>
<td>900</td>
<td>1750</td>
</tr>
<tr>
<td>Motor Power (kW)</td>
<td>2.2</td>
<td>3.7</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Scale</th>
<th>Under 300L</th>
<th>500L~1000L</th>
<th>Over 1500L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter (mm)</td>
<td>500</td>
<td>1200</td>
<td>1500</td>
</tr>
<tr>
<td>Height (mm)</td>
<td>900</td>
<td>1750</td>
<td>1750</td>
</tr>
<tr>
<td>Motor Power (kW)</td>
<td>1.5</td>
<td>2.2</td>
<td>3.7</td>
</tr>
</tbody>
</table>

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### Dynamixer Line-up

### USmix test unit
**Emulder / High Emulder / Homogenizer**

### Emulder

- **Original oil liquid**
- **One pass treating at 3600rpm**

#### Foods/Beverages
- Dairy Products: Milk / Cream / Ice Cream / Coffee
- Fat Products: Mayonnaise / Butter / Margarine
- Beverages: Fruit Juice / Green Vegetable Juice
- Seasonings: Ketchup / Dressings / Sauces / Spice
- Confectionaries: Chocolate / Flour Paste
- Others: Liquid Food

### High Emulder

- High Emulder is high efficient and hygenic emulcifier with pumping capability, which give strong shear force caused by 30-50 m/sec running speed using unique shape of shearing blade on rotor and stator.

#### Chemicals
- Ink / Pigment / Paint / Dye stuff / Developer

#### Others
- Pharmaceutical / Cosmetic

### Crushing

- Destroy the solids/fibers into fine structure (powder). Smash is a kind of destruction.
  - e.g. Oyster and Water
  - e.g. Fibers in Apple

#### Homogenizer

- Particle size are to be distributed uniformly.
  - (e.g. Ice Cream Mix)

### Continuous Emulsification system

Continuous Mayonnaise Manufacturing Equipment

#### Specifications of Mixture (rate of mixture)

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Process liquid</th>
<th>Drain</th>
<th>Air tube</th>
<th>Weight (kg)</th>
<th>Motor (kg)</th>
</tr>
</thead>
</table>

### System Flow

- Dearator
- (Option)
- Setting Production,
- Setting Mixing Ratio,
- Controlling Temperature
- Slash Mixer
- Emulder
- Chilled Water
- Sight Glass
- Oil Tank
- Sight Glass
- Static Mixer
- Flowmeter
- Pump
- Control Panel

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**View of raw Materials**

- Before processed
- After processed by Emulder

**Comparison of raw Materials**

- Before processed
- After processed by High Emulder

**Comparison of particle size**

- Original oil liquid
- One pass treating at 3600rpm

**Specifications of Mixture (rate of mixture)**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Weight (kg)</th>
<th>Power (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPVE22-1405</td>
<td>60kg</td>
<td>5.7kW</td>
</tr>
<tr>
<td>SPVE22-1815</td>
<td>110kg</td>
<td>11kW</td>
</tr>
</tbody>
</table>

**Dimensions**

- Motor
- Con. Rods
- Crank Shaft
- Pistons Plungers
- V-belts
- Pulley Disc
- Valve
- Cylinder Block
- Outlet
- Inlet
- Impact Ring
- Seat Homo Disc

**Emulders / High Emulders / Homogenizers**

**Continuous Mayonnaise Manufacturing Equipment**

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Techno center for your solution and development !!

In our Techno-center, fundamental research-works, development of new equipments and processing-plants have been executing with full of power. Upon client’s request, Techno-center prepares the equipments for experimental use and tests them in shortest leading time.

You can utilize our techno-center through communication to fulfil exactly what you require.

We are available “Rental services at Indonesia” for the test machines “Extractor” “Homogenizer”. Please feel free to ask Jakarta Representative office. The kind fo test machine will plan to expand in the future.