New Product!

**Supersize Canned Motor Series**

The largest Canned Motor Pump on the globe.

Max. 550kW Canned Motor which surpassed the previous largest of 220kW by far can be coupled with various pump-types of F, R, B and so on.

Power supply shall range from 400V (L.V) to 3KV (H.V).

Typically used in Petrochemistry, Nuclear, or Boiler Circulation.

**Product Range**
- Q max. : 25 m3/min
- TDH max. : 160 m
- kN max. : 550kW

---

**Group Global Network**

**TEIKOKU Electric Mfg. Co., Ltd. (Japan)**

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  - Web: www.teikoku-usa.com

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  - Fax: +1-267-486-1013
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- E-mail: info@teikoku-electric.de
- Web: www.teikokupump.de

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- Fax: +86-411-8625-9292
- Web: www.teikoku-china.com

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- Web: (see US website)

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- E-mail: webmaster@teikokukorea.co.kr
- Web: www.teikokukorea.co.kr

**TAIWAN TEIKOKU PUMP CO., LTD.**

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- Phone: +886-2-2567-9800
- Fax: +886-2-2568-2670
- E-mail: tpc@tms2.hinet.net
- Web: (see US website)

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Catalog No. CAT-0026D Printed in Japan Nov. 2010
Ultimately Ecological, Pollution - free, Zero Emission Canned Motor Pump & System

TEIKOKU presents the most edge-cutting canned motor pumps in double containment, leak-free, robust & user-friendly design to the users in desperate need to live up to 21st Century industrial standards on the planet!

TEIKOKU products will prove their hermetic-sealing power in the following fluid-handling segments:

- Oil & Gas Refining, Petrochemistry, Chemistry, Food-Processing, Pharmaceutical, Textile, Cosmetics, Airconditioning & Refrigeration, Semiconductor Manufacturing, Thermal or Nuclear Power Plants and more to come....
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- Thermal or Nuclear Power Plants and more to come....

**CO2 Restricted**

- TEIKOKU Canned Motor Pump (TCMP)
- TCMP Multistage Pump
- TCMP Hot Oil Pump
- TCMP Boiler Water Circulation Pump
- TCMP High Temp./ Pressure Pump
- TCMP high-melting-point-liquid Pump
- TCMP Self-Priming Pump
- TCMP gas-seal type slurry Pump
- High-performance Metering Pump
- Insulation-oil pump for transformer
- Customized Reactor with TCM agitator & airator and more to come....

**ECO**

The core technology is the hermetically sealed, type R or A Canned Motor

### Type R motor Products

<table>
<thead>
<tr>
<th>Motor</th>
<th>Product No.</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>canned type pump bearing, var motor/HS &amp; HS</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Type FV Standard Design</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Type FM Multistage Pump</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Double Suction Design</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Type R. Recirculation</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Type IB for High Temperature Services</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Vertical High Pressure Model RW</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Higher heat Resistant canned Motors, Type US</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Type KS, Jacketed Motor/Pump</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Type G, Self-Priming</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Type D, for Slurry</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>SG / XG for Slurry</td>
<td></td>
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<tr>
<td>13</td>
<td>Regenerative Turbine Pump PT</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Type BP, Vertical Boiler Circulation Pump</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Top Oil for Reactor, high temperature Liquid</td>
<td></td>
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<tr>
<td>16</td>
<td>APREBS Canned Pump</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Type E, for LGP</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Type N, for LGP</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Vertical Inline Pump, RV, RV, FW &amp; FY</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Type L, for Absorption type Refrigerators</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Type R, canned Motor Agitator</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Agitator + mixer + reactor</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>canned Motor Sludge Crusher</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>self-primer, for chemical Waste</td>
<td></td>
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<tr>
<td>25</td>
<td>Plastic Lined Mag Drive Pump</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Type GV, for Molten Salts</td>
<td></td>
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<tr>
<td>27</td>
<td>Type QK / QKD, for Insulation Oils</td>
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<td>28</td>
<td>Type QK with Elevator Impeller</td>
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<tr>
<td>29</td>
<td>Type TG, sealedless gear pump</td>
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<tr>
<td>30</td>
<td>Type TG, sealsless gas blower for GIG gas</td>
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<tr>
<td>31</td>
<td>Nuclear Design</td>
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### Type A motor products

<table>
<thead>
<tr>
<th>Motor</th>
<th>Product No.</th>
<th>Model</th>
</tr>
</thead>
<tbody>
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<td>32</td>
<td>Type A, for general use</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Type A, for sanitary spaces</td>
<td></td>
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<tr>
<td>34</td>
<td>Single Stage</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Type TS, Thin &amp; Flat canned Motor Pump</td>
<td></td>
</tr>
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<td>36</td>
<td>Insulation Oil Circulation on Trans</td>
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<tr>
<td>37</td>
<td>Brake Motor</td>
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<tr>
<td>38</td>
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</table>

### Metering pumps

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>39</td>
<td>Diaphragm Pump</td>
</tr>
<tr>
<td>40</td>
<td>Cylinder High Pressure Diaphragm Pump</td>
</tr>
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</table>

### Other products

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Released</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Insulating Oil Cleaner, model KQ</td>
</tr>
<tr>
<td>42</td>
<td>Insulating Oil Cleaner, model TK</td>
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<tr>
<td>43</td>
<td>Electric Magnet</td>
</tr>
</tbody>
</table>

### New Product

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Released</th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>Super-size Canned Motor Series</td>
</tr>
</tbody>
</table>
1. **Canned Motor Pump Bearing - wear Monitor (TRG & THG)**

   **TRG**
   TEIKOKU ROTARY GUARDIAN has become Teikoku’s signature protection device through its outstanding field services over 30 years on more than 200,000 Teikoku canned motor pumps. It electrically detects bearings' radial abrasion level of canned motor pumps in operation.

   **THG**
   The latest addition to “TRG Family”. It detects bearings’ abrasion level not only radially but also axially, and tells toward which direction the whole rotating unit is moving very visually.

2. **Type FV Standard Design**


   **Standard performance range:**
   - Qmax : 3,430 gpm
   - TDH max : 160 ft
   - kWmax : 295 HP
   - 220 kW

3. **Type F-M Multistage Pump**

   Barrel type casing, low flow, high TDH for general CPI applications, reverse osmosis in electronics, pharmaceutical and semiconductor manufacturing. All canned pump features like extremely low noise and high reliability are maintained.

   **Performance range:**
   - Qmax : 450 gpm
   - TDHmax : 1,810 ft
   - kWmax : 295 HP

4. **Double Suction Design**

   Duplex Parallel Pump Services can be consolidated by this design. It typically caters for Organic / Inorganic chemical pharmaceuticals, vacuum service, high pressure service, or radioactive fluid in nuclear power plants. Suitable for large flow-rate, lower TDH application.

   **Performance range:**
   - Qmax : 15 m³/min
   - TDH max : 90 m
   - kWmax : 220 kW

5. **Type R Reverse Circulation**

   Selfventing and low NPSH for volatile liquids, liquidified gases and refrigerants such as Ammonia and synthetic fluoro and chloro hydro carbons. Available both in horizontal and vertical designs. Extreme low temperature to high temperature services.

   **Performance range:**
   - Qmax : 3,430 gpm
   - TDHmax : 160 m
   - kWmax : 295 HP

6. **Type B for High Temperature Services**

   Zero leakage service for hot oils, hot water and for any other high temperature chemicals. Available either in horizontal or vertical designs with cooling jacket on motor and an integral heat exchanger.

   **Performance range:**
   - Liquid temp. up to 840°F/450°C
   - Qmax : 3,430 gpm
   - TDHmax : 160 m
   - kWmax : 295 HP
   - Temp : 842 °F

7. **Vertical High Pressure Model RW**

   Model RW designed for sealless, leak-free pumping of volatile fluids at high or low temperature under high system pressure, up to and exceeding 35 MPa / 5,000 psi. Applications range from nuclear and chemical processes to hot water circulation in testing loops and circulation of supercritical fluids.
1. Canned Motor Pump Bearing - wear Monitor (TRG & THG)

**TRG**
Tekoku Rotary Guardian has become Tekoku’s signature protection device through its outstanding field services over 30 years on more than 200,000 Tekoku canned motor pumps. It electrically detects bearings’ radial abrasion level of canned motor pumps in operation.

**THG**
The latest addition to “TRG Family”. It detects bearings’ abrasion level not only radially but also axially, and tells toward which direction the whole rotating unit is moving very visually.

**Panel-mounted meter for Remote Monitoring (Optional)**
**Alarm Device (Optional)**

2. Type FV Standard Design


**Standard performance range:**
- Qmax : 3,430 gpm
- TDH max : 160 ft
- kW max : 295 HP
- 220 kW

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- Qmax : 3,430 gpm
- TDH max : 160 m
- kW max : 295 HP
- 220 kW

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Zero leakage service for hot oils, hot water and for any other high temperature chemicals. Available either in horizontal or vertical designs with cooling jacket on motor and an integral heat exchanger.

**Performance range:**
- Liquid temp. up to 840°F/450°C
- Qmax : 3,430 gpm
- TDH max : 530 ft
- kW max : 220 kW
- Temp : 842 °F

7. Vertical High Pressure Model RW

Model RW designed for sealless, leak-free pumping of volatile fluids at high or low temperature under high system pressure, up to and exceeding 35 MPa / 5,000 psig. Applications range from nuclear and chemical processes to hot water circulation in testing loops and circulation of super critical fluids.
8 Higher Heat Resistant Canned Motors, Types U & X

Two different types of non-cooled higher heat resistant canned motors are available in addition to regular canned motors of which max allowable liquid temperature with no cooling is around 130 deg C / 266 deg F.
The special motor condition with non-organic materials is the key for types U and X.

Types U and X are best featured in handling high temperature liquids such as Heat Transfer Oils, Hot Water and High Melting Temperature Chemicals with incomparable easiness. Types U and X need no cooling providing customers with considerable energy and utility savings in high temperature pumping.

Type U
- Liquid temp: 446 °F / 230 °C
- kW max: 214 HP / 160 kW
- Larger pumps upon request.

Type X
- Liquid temp: 644 °F / 340 °C
- kW max: 80 HP / 60 kW

9 Type K-S Jacketed Motor-Pump

This series are developed to cater for liquids of high-melting point.

Type K is jacketed and suitable for liquids with relatively low melting point such as Oleic acid. Fatty acid. Amines. Phenol. Methyl aniline. Caustic soda. p-Xylene etc.

Type K-S is heavily jacketed for liquids with relatively high melting point such as Maleic acid. Bisphenol. Caprolactam. Phenolic Anhydrides Phenolic and Naphthalene.

10 Type G Self Priming

Canned motor self-priming pump featuring elimination of starting problems due to leakage at shaft seal. Very convenient to pumping solvents out of underground tanks and applications involving liquids with entrained or dissolved gases.

Qmax : 790 gpm 3 m³ / min
TDMmax : 328 ft 100 m
kW max : 67 HP 50 kW

11 Type D for Slurry

Type D is horizontal design for relatively small amount of fine slurry. Pump features a self-circulating sealing liquid but requires no gas-chamber.

Qmax : 2.64 gpm 10 m³ / min
TDMmax : 533 ft 160 m
kW max : 161 HP 120 kW

Allowable max slurry Content : 3–5wt%

12 Type SG / XG for Slurry

SG and XG are vertical design pump for relatively large amount of slurry. XG has self-circulating sealing liquid in the motor chamber. Type SG features external flushing. Both designs utilize a gas chamber between pump and motor.

Type D is horizontal and for relatively small amount of fine slurry has self-circulating sealing liquid but has no gas-chamber.

It’s also pertinent to pumping polymerization / crystallization prone inherently unstable chemicals.

13 Regenerative Turbine Pump PT

Designed for efficient, low flow-high head, leak-free pumping or circulation of volatile and expensive fluids such as cleaning agents and thermal control fluids. Applications are met in both General industrial and OEM machine applications. PT regenerative turbines pumps are also available with Explosion Proof motors for use in the Chemical Process industries or any process application where leak-free pumping is preferred or required.

Available in 6 sizes.
- Capacity : 2 - 601 / min
- 0.5 - 16 GPM
- Head : Max 125 m
- Max 416 ft
- Motor kw : 0.75 - 3.7

14 Type BP Vertical Boiler Circulation Pump

Zero leakage and maintenance free hot water circulation canned motor pumps. Design features vertical mounting orientation with pump above motor for self venting design. The BP design is the best available technology to upgrade and replace wet statie type boiler circulation pumps used in electric generating stations.

Users can expect increased motor life. All BP pumps can be manufactured and customized to exactly specifications of the electric utility or authority. Manufacturing and design specs upon request.

15 Type BM for High Pressure, High Temperature & High Head

Horizontal center line supported multistage pump featuring a high temperature service canned motor and supplied with an integral heat exchanger for accurate temperature control of the internal, self-circulated lubrication flow.

All canned motor pump advantages are inherent in BM designs for the most difficult pumping application in refineries and petrochemical process plants. Unlike conventional API pumps, BM pumps never require external lubrication, seal flush, couplings or mechanical component alignment.

16 API685 Canned Pump

Horizontal center line mounted canned motor pump per API685 (API) specification for sealless pumps for higher liquid temperatures. This photo shows a TOMP designed and manufactured to API685 specifications for pumping high temperature hydrocarbons under elevated system pressure in a refinery application. TOMP API685 pumps are available to 820 Kw and 35 MPa / 5000 psi system pressure.

17 Type E for LPG

Type E reverse circulated and self-venting for vertical installation on a mounting pad. Available with inducer to decrease NPSHr.

Qmax : 1849 gpm 7m³ / min
TDMmax : 524 ft 160 m
kW max : 161 HP 120 kW

18 Type N for LPG

Vertical reverse circulation models RW and RV are designed for high vapor pressure, volatile hydrocarbons. Vertical configuration and reverse circulation offers easier venting and assures stable long life operation in systems with low NPSH available. Canned motor pump design eliminates seal maintenance and associated down time.

Vertical FW and FV are space saving, self venting hollow shaft design. The small and space saving mounting footprint of these models make them very applicable in skid mount and other OEM equipment.

Capacity : Max. 7 mm³
Max. 1,849 GPM
Max. 160 m
Max. 524 ft
Motor : Max. 120 kw
161 HP
**Canned Motor**

8  **Higher Heat Resistant Canned Motors, Types U & X**

Two different types of non-cooled higher heat resistant canned motors are available in addition to regular canned motors of which max allowable liquid temperature with no cooling is around 130 deg C / 266 deg F. The special motor operation with non-organic materials is the key for types U and X.

Types U and X are best featured in handling high temperature liquids such as Heat Transfer Oils, Hot Water and High Melting Temperature Chemicals with uncompareable easiness. Types U and X need no cooling providing customers with considerable energy and utility savings in high temperature pumping.

Type U
- Liquid temp: 446 °F / 230 °C
- kWmax: 214 HP / 150 kW
- Larger pumps upon request.

Type X

9  **Type K-S Jacketed Motor-Pump**

This series are developed to cater for liquids with nature of high-melting point.

Type K is jacketed and suitable for liquids with relatively low melting point such as Oleic acid, Fatty acid, Amine, Phenol, Malein anhydride, Caustic soda, p-Xylene, etc.

Type K-S is heavily jacketed for liquids with relatively high melting point such as Maleic acid, Bisphenol, Caprolactam, Phthalic Anhydride, Phthalic acid and Napthale.

10  **Type G Self Priming**

Canned motor self-priming pump featuring elimination of entrapping problems due to leakage at shaft seal. Very pertinent to pumping solvents out of underground tanks and applications involving liquids with entrained or dissolved gas.

Qmax: 790 gpm 3 m³/min
TDMmax: 328 ft 100 m
kWmax: 67 HP 50 kW

11  **Type D for Slurry**

Type D is horizontal design for relatively small amount of fine slurry. Pump features a self-circulating sealing liquid but requires no gas-chamber.

Qmax: 2640 gpm 10 m³/min
TDMmax: 533 ft 160 m
kWmax: 161 HP 120 kW

Allowable max slurry content: 3–5wt%.

12  **Type SG / XG for Slurry**

SG and XG are vertical design pump for relatively large amount of slurry. SG has self circulating sealing liquid in the motor chamber. Type SG features external flushing. Both designs utilize a gas chamber between pump and motor.

Type D is horizontal and for relatively small amount of fine slurry has self-circulating sealing liquid but has no gas-chamber.

It's also pertinent to pumping polymerization / crystallization prone, inherently unstable chemicals.

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Designed for efficient, low flow-high head, leak-free pumping or circulation of volatile and expensive fluids such as cleaning agents and thermal control fluids. Applications are met in both General Industrial and OEM machine applications. PT regeneration turbine pumps are also available with Explosion Proof motors for use in the Chemical Process industries or any process application where leak-free pumping is preferred or required.

Available in 6 sizes.
- Capacity: 2.60 / min
- 0.5–16 GPM
- Head: Max 125 m
- Max 416 ft
- Motor kw: 0.75–37

14  **Type BP Vertical Boiler Circulation Pump**

Zero leakage and maintenance free water circulation canned motor pumps. Design features vertical mounting orientation with pump above motor for self venting design. The BP design is the best available technology to upgrade and replace wet statior type boiler circulation pumps used in electric generating stations.

Users can expect increased motor life. All BP pumps can be manufactured and documented to exacting specifications of the electric utility or authority. Manufacturing and design specs upon request.

15  **Type BM for High Pressure, High Temperature & High Head**

Horizontal center line supported multistage pump featuring a high temperature service canned motor and supplied with an integral heat exchanger for accurate temperature control of the internal, self-circulated lubrication flow.

All canned motor pump advantages are inherent in BM designs for the most difficult pumping applications in refineries and petrochemical process plants. Unlike conventional API pumps, BM pumps never require external lubrication, seal flush, couplings or mechanical component alignment.

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Horizontal center line mounted canned motor pump per API685 (API) specification for sealless pumps for higher liquid temperatures. This photo shows a TCPM designed and manufactured to API685 specifications for pumping high temperature hydrocarbons under elevated system pressure in a refinery application. TCPM API685 pumps are available to 820 Kw and 35 MPa / 5000 psi system pressure.

17  **Type E for LPG**

Type E reverse circulated and self-venting for vertical installation on a mounting pad. Available with inducer to decrease NPSH.

Qmax: 1849 gpm 7m³/min
TDMmax: 524 ft 160 m
kWmax: 161 HP 120 kW

18  **Type N for LPG**

Type N is submersible design for underground storage tanks featuring the elimination of long, bearing supported drive shafts and mechanical seal for zero leakage. Operating speed can be changed from 4p to 8p speeds and back depending on varying head and capacity requirements. As such, continuous operation with the least energy consumption can be achieved.

Qmin: 80 gpm 300 lit/min
TDMmax: 467 ft 140 m
kWmax: 15 HP 11 kW

19  **Vertical Inline Pump RW, RV, FW & FV**

Vertical reverse circulation models RW and RV are designed for high vapor pressure, volatile hydrocarbons. Vertical configuration and reverse circulation offers easier venting and assures stable long life operation in systems with low NPSH available. Canned motor pump design eliminates seal maintenance and associated down time.

Vertical FW and FV are space saving, self venting hollow shaft design. The small size and space saving mounting footprint of these models make them very applicable in skid mount and other OEM equipment.

Capacity: Max 7 m³/min
Max 1,849 GPM
Head: Max 160 m
Max 524 ft
Motor: Max 120 kw 161 HP
20 Type L for Absorption type Refrigerators

Compact, light weight, extremely low NPSHr, fabricated seamless / leak-free canned motor pumps for operation under high vacuum. Installation is either flange mount or weld in place.

Qmax : 422 gpm 1.6 m/m
TDHmax : 114 ft 35 m
WMax : 50 HP 37 kW

21 Type R Canned Motor Agitator

Side or bottom tank entry, zero leakage agitators for high vacuum to high pressure services. Space saving canned motor design requires no alignment and no possibility of ingress or contamination from outside environment ensuring product quality. Meets application requirements in the food, pharmaceutical and chemical industry for tanks and reactors for regular mixing, homogenization, reaction acceleration, emulsion production, uniform solution formulation and to suspend solids.

High speed mixing at 900/1100 RPM with canned motor driven up to 20 ks.

22 Aerator + Mixer + Reactor

TEIKOKU manufactures seamless reactor package consisting of canned motor mixer, canned motor aerator and reactor. Packaged units require no heavy gear box, no mechanical seal and no seal flush pumps as are required on top mount conventional mixer units. Seamless canned motor assures no contamination of the contained product by lube oil or flush fluid. Short shaft and seamless mount guarantees much easier cleaning and versatility of the reactor in food industry. Typical applications include Hydrogenation, Vacuum Distillation and Gas injection.

23 Canned Motor Sludge Crusher

One of Chemical Reactors’ QC problems lies in sedimentation and deposit of impurities at the tank-bottom which can be carried over to the down-stream. Our Canned Motor Sludge Crusher, which is evolved from our household canned motor agitator, can provide the solution to this.

Product Range
Motor up to 20 kW / 26 HP
RPM1,000/1,200 with 50/60Hz or maximum 3,600 with 60Hz
Wetted parts in stainless steel or other anti-corrosion alloys

[Photo is sample of line mounting]

24 Self-primer for Chemical Waste

TEIKOKU offers a specialty product that is not a canned motor pump. This self-primering, slurry handling pump incorporates the feature of TCMP gas chambered canned motor slurry pump (see No. 12). A gas chamber is mounted on top of the self-primering centrifugal pump and a bearing box is isolated on top with a seal for the bearing lube oil. A standard, commercially available motor on top.

Used in various industrial waste treatment applications.

Capacity : Max. 1.2 m/m
Max. 377 GPM
Head : Max. 50 m Max. 166 ft
Motor : Max. 15 kw Max. 20 HP
Allowable max slurry content : 60 wt %

25 Plastic Lined Mag Drive Pump

Magnetically driven inert plastic lined stainless pump for corrosive applications. All wetted parts are manufactured in either ETE, PVDF, PTFE and/or Ceramics for superior corrosion resistance against chemicals that attack exotic alloys. Applications include Sulfuric acid (H2SO4), Hydrochloric acid (HCl), Chloric acid (DCA), Phosphoric acid (H3PO4) and Hydrogen peroxide (H2O2)

Capacity : Max. 1.2 m/m Max. 317 GPM
Head : Max. 42 m Max. 140 ft
Motor : Max. 15 kW Max. 20 HP

26 Type QV for Molten Salts

Special pump for high temperature molten salts supplied with control box. Vertical design with standard, commercially available motor on top and a mechanical seal.

Examples of application are: cooling hot steel in steel mill, glass processing, and fiber vaporization. Manufacturing and design specs upon request.

Max temp: 1,112°F 600°C

27 Type QK / QKD for Insulation Oils

Sealless motor pump with high reliability for circulating insulation oil in large transformers and rectifiers. Design has produced a proven product for reliability, stability and total quality. Available in many sizes and orientations.

Qmax : 2,113 gpm 67 m³/h
TDH max : 65 ft 20m
WMax : 30 HP 22 kW

28 Type QK with Elevator Impeller

An axial flow impeller is mounted on a shaft loose. The impeller moves up when power is applied to pump the oil. Upon shutdown, the impeller moves down and creates the oil path through pump by properly sized thermo-cycle, developing energy saving.

29 Type TG sealless gear pump

For insulation oil services. Small flow, high head, stable and reliable operation is guaranteed for either vacuum or pressure.

Qmax : 37 gpm 1.4 l/min
Pd max : 56 psi 0.39 MPa
WMax : 3.4 HP 2.5 kW

30 Type TQ sealless gas blower for SF6 gas

Centrifugal gas blower and electric motor are coupled without shaft seal. Manufacturing and design specs upon request.

31 Nuclear Design

Canned Motor pumps designed, manufactured and documented to a controlled ASME quality program qualifying for affixation of N-Stamp and available from Chempump Division. Pumps are compliant to NCA-4000 and CSA-2299-3 design criteria and Naval Nuclear Standard. Seismic designs are available to meet varying seismic site requirements worldwide. Nuclear pumps are suitable for replacement under plant recertification requirements and sealed pump upgrades. Commercial unit upgrade program is also available.
Canned Motor

20 Type L for Absorption type Refrigerators

Compact, light weight, extremely low NPSHr, fabricated sleeveless / leak-free canned motor pumps for operation under high vacuum. Installation is either flange mount or weld in place.

Qmax : 422 gpm 1.6 m³/m
TDH max : 114 ft 35 m
Wmax : 50 HP 37 kW

Canned Motor

21 Type R Canned Motor Agitator

Side or bottom tank entry, zero leakage agitators for high vacuum to high pressure services. Space saving canned motor design requires no alignment and no possibility of ingress or contamination from outside environment ensuring product quality.
Meets application requirements in the food, pharmaceutical and chemical industry for tanks and reactors for regular mixing, homogenization, reaction acceleration, emulsion production, uniform solution formulation and to suspend solids.
High speed mixing at 900 – 1100 RPM with canned motor driven up to 20 kw.

Canned Motor

22 Aerator + Mixer + Reactor

TEIKOKU manufactures sleeveless reactor package consisting of canned motor mixer, canned motor aerator and reactor. Package units require no heavy gear box, no mechanical seal and no seal flush pans as are required on top mount conventional mixer units. Sealless canned motor assures no contamination of the contained product by lube oil or flush fluid. Short shaft and sealless mount guarantees much easier cleaning and versatility of the reactor in food industry. Typical applications include Hydrogenation, Vacuum Distillation and Gas Injection.

Canned Motor

23 Canned Motor Sludge Crusher

One of Chemical Reactors’ QC Problems lies in sedimentation and deposit of impurities at the tank-bottom which can be carried over to the down-stream.
Our Canned Motor Sludge Crusher, which is evolved from our household canned motor agitator, can provide the solution to this.

Product Range
Motor up to 20 kW / 26 HP RPM1,000 / 1,200 with 50/60Hz or maximum 3,600 with 60Hz
Wetted parts in stainless steel or other anti-corrosion alloys

[Photo is sample of line mounting]

Regular Motor

24 Self-primer for Chemical Waste

TEIKOKU offers a specialty product that is not a canned motor pump. This self-primer, slurry handling pump incorporates the feature of TCMP gas chambered canned motor slurry pump (see No 16). A gas chamber is mounted on top of the self-primer centrifugal pump and a bearing box is isolated on top with a seal for the bearing lube oil. A standard, commercially available motor on top.

Used in various industrial waste treatment applications.

Capacity : Max. 1.2 m³/m
Max. 317 GPM
Head : Max. 50 m Max. 166 ft
Motor : Max. 15 kw Max. 20 HP
Allowable max slurry content : 60 wt%

Regular Motor

25 Plastic Lined Mag Drive Pump

Magnetically driven in-line plastic lined sealless pump for corrosive applications. All wetted parts are manufactured in either ETFE, PVDF, Ralon and/or Ceramics for superior corrosion resistance against chemicals that assault exotic alloys.
Applications include Sulfuric acid (H2SO4), Hydrochloric acid (HCl), Chromic acid (CrO3), Phosphoric acid (H3PO4) and Hydrogen peroxide (H2O2)

Capacity : Max. 1.2 m³/m Max. 317 GPM
Head : Max. 42 m Max. 140 ft
Motor : Max. 15 kw Max. 20 HP

Canned Motor

26 Type QV for Molten Salts

Special pump for high temperature molten salts supplied with control box. Vertical design with standard, commercially available motor on top and a mechanical seal.
Examples of application are: cooling hot steel in steel mill, glass processing, and rubber vulcanization.
Manufacturing and design specs upon request.

Max temp: 1,112°F 600°C

Can-less / Sealless Pump

27 Type QK / QKD for Insulation Oils

Sealless motor pump with high reliability for circulating insulation oil in large transformers and rectifiers. Design has produced a proven product for reliability, stability and total quality. Available in many sizes and orientations.

Qmax : 2,113 gpm 7915 m³/h
TDH max : 65 ft 20m
Wmax : 30 HP 22 kW

Can-less / Sealless Pump

28 Type QK with Elevator Impeller

An axial flow impeller is mounted on a shaft loose. The impeller moves up when power is applied to pump the oil. Upon shutdown, the impeller moves down and creates the oil path through pump by properly sized thermo-cyclo, developing energy saving.

For insulation oil services. Small flow, high head, stable and reliable operation is guaranteed for either vacuum or pressure.

Qmax : 37 gpm 141 l/m
Pd max : 56 psi 0.39 MPa
Wmax : 3.4 HP 2.5 kW

Can-less / Sealless Pump

29 Type TG sealless gear pump

For insulation oil services. Small flow, high head, stable and reliable operation is guaranteed for either vacuum or pressure.

Qmax : 37 gpm 141 l/m
Pd max : 56 psi 0.39 MPa
Wmax : 3.4 HP 2.5 kW

Can-less / Sealless Pump

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Centrifugal gas blower and electric motor are coupled without shaft seal. Manufacturing and design specs upon request.

Canned Motor

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32 **Type A Mixer** for general use

A mixer with a type axial (flat) motor for side or bottom tank entry, zero leakage agitators for high vacuum to high pressure services. Space saving axial motor design requires no alignment and no possibility of contamination from outside environment. Compact and lightweight design will save tank fabrication cost. Meets applications requirements for mixing and agitation, homogenization, uniform solution formulation, to suspend solids and catalysts and many other agitation applications. Motor power up to 3.7 kw, rotating speed 900-1,100 rpm.

33 **Type A Mixer** for sanitary specs

Same basic construction as type A, but with all wetted surfaces finished and polished in compliance to sanitary requirements. The sealless design is especially suited for vacuum tanks, sterile and aseptic processes, closed process and pressure sealed tanks in food, pharmaceutical, cosmetic and beverage industries.

34 **Type TS Thin & Flat Canned Motor Pump**

This newly developed canned motor pump meets liquid cooling and heating thermal fluid circulation requirements for temperature control in electronic devices. This unique pump is designed to meet thermal and size requirements through a lightweight and compact construction in a zero leakage design.

The pump pictured here is only 50 mm (2") in diameter x 10 mm (0.4") thick. Further size reduction is possible if required. Applications include coolant circulation in fuel cells and computers featuring liquid cooled circuit designs. Flow range can be from as small as 0.1 l/min / 0.028 GPM to some liters per minute.

35 **Type SK** for Insulation Oil Circulation on Trains

Oil circulation pump with a type axial (flat) motor for axial space saving and mounting to the primary transformer on Shinkansen or express train cars. Designed and fabricated to the most stringent specifications to meet all requirements for public safety.

Qmax: 800 l/min 211 GPM
TQmax: 9.7 m 32 ft
kWmax: 3.5 kw 4.6 HP

36 **Brake Motor** for Holst & Crane

Type A axial (flat) motor provided with brake shoe on the back of the rotor. Shorter axial length especially suits use in the drum of hoists and cranes. Motor output up to 0.2 kw.

37 **Simplex Metal Diaphragm Pump**

Performs excellent especially in accurate feeding into ultra-high pressure processes. This exclusive hydraulically driven metal diaphragm pump is typically featured in precision feeding of low flow into very high pressure thanks to its mechanical durability with no allowance for process liquid permeation through the diaphragm into the hydraulic chamber.

Product Range
Qmax: 250 l/h
Pd max: 120 MPa

38 **Duplex High Pressure Diaphragm Pump**

PTFE diaphragm pump can produce repeatable flows against discharge pressures up to 25 MPa. Duplex pumps are often used for reducing the pulsation spikes under high pressure operation. All pumps feature manual capacity control via micrometer hand wheel adjustment, to feed different chemical requirements. This is widely used in various chemical process and foaming process.

39 **Rotating Direction Indicator for Motors TRC**

The TRC is an easy-to-use device to check the rotating direction of Tokioki Canned Motor Pumps whose rotating units are fully enclosed thus invisible from outside. This pocket-sized, portable instrument can also be used to check the direction of rotation of regular induction motors.

66.5W x 92L x 28T
Power by battery, 9V

40 **Insulation Oil Cleaner, model TK**

Cleaning unit for the insulation / cooling oil in transformers at power generating and transmission facilities.

The insulation cooling oil in transformers gets deteriorated by the contaminant such as carbon/metallic particle which is mostly the result of arcs generated by the switch over. The cleaner unit primarily consists of a pump and a filter to trap these residues and restore the oil back to its virgin quality.

Filtering capability 0.03 μm
Filter capacity : Carbon 400 g
Moisture 200 ml
Filter flow rate 10 l / min
Size : 525L x 588W x 877H

41 **Electric Magnet**

This magnet is for use in electron accelerators weighing from just a few kgs to as much as 1,000 kgs. Several types has been developed such as deflection-type, 4-poles type, steering-type, or septum-type.

Photo shows a layer-built skewed 4-poles electric magnet used in a storage ring of SPring-8 and is tailor-made to fit the relevant vacuum chamber. SPring-8 is reportedly the world largest radiation beam R&D complex located in Hyogo, Japan.
32 Type A Mixer for general use

A mixer with a type axial (flat) motor for side or bottom tank entry, zero leakage agitators for high vacuum to high pressure services. Space saving axial motor design requires no alignment and no possibility of contamination from outside environment. Compact and lightweight design will save tank fabrication cost. Meets applications requirements for mixing and agitation, homogenization, uniform solution formulation, to suspend solids and catalysts and many other agitation applications. Motor power up to 3.7 kW, rotating speed 500 - 1,100 rpm.

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35 Type SK for Insulation Oil Circulation on Trains

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37 Simplex Metal Diaphragm Pump

Performs excellent especially in accurate feeding into ultra-high pressure processes. This exquisite hydraulically driven metal diaphragm pump is typically featured in precision feeding of low flow into very high pressure thanks to its mechanical durability with no allowance for process liquid permeation through the diaphragm into the hydraulic chamber.

Product Range
Qmax : 260 l/h
Pd max : 120 MPa

38 Duplex High Pressure Diaphragm Pump

PTFE diaphragm pump can produce repeatable flows against discharge pressures up to 35 MPa. Duplex pumps are often used for reducing the pulsation spikes under high pressure operation. All pumps feature manual capacity control via micrometer hand wheel adjustment, to feed different chemical requirements. This is widely used in various chemical process and foaming process.

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66.5W x 92L x 28T
Power by battery, 9V

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Filteration capability 0.03 μm
Filteration capacity Carbon 400 g
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Supersize Canned Motor Series

The largest Canned Motor Pump on the globe.

Max. 550kw Canned Motor which surpassed the previous largest of 220kw by far can be coupled with various pump-types of F, R, B and so on.

Power supply shall range from 400V (LV) to 3KV (HV).

Typically used in Petrochemistry, Nuclear, or Boiler Circulation.

Product Range
Q max : 25 m³/min
TDH max : 150 m
kW max : 550kw

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