Torishima Pump Global Network

East Asia
- Torishima Pump Mfg. Co., Ltd.
- Kyushu Torishima Co., Ltd.
- Torishima Pump Mfg. Co., Ltd.
- Torishima Service Solutions (Thailand) Ltd.

South East Asia
- Torishima Pumps (India) Pvt. Ltd.
- Torishima Pump Mfg. Co., Ltd.
- Torishima Pump Mfg. Co., Ltd.

South Asia
- Torishima Pumps (India) Pvt. Ltd.
- Torishima Pump Mfg. Co., Ltd.

Europe
- Torishima Europe Ltd.
- Torishima Service Solutions Europe Ltd.
- Torishima Europe Projects Ltd.

North America
- Torishima Pump Mfg. Co., Ltd.

Central America
- Torishima Europe Ltd. Mexico Office

North America East Office

Central America

Power Plant Pumps for

[Image of Torishima Pump Global Network Map with various office locations and contact information.]
Innovative Pumping Solutions to Power Industry

The demand for energy continues to increase around the globe with particularly high growth rates and rapid economic expansion in the Indian subcontinent and many parts of Asia. As a result, the number of new and refurbished power plants will increase to meet this demand.

Torishima is well placed to provide a full range of pumps designed for the applications needed within the power industry from small combined cycle to large super critical thermal stations. We are able to supply boiler feed pumps, boiler circulation pumps, circulating water pumps and condensate extraction pumps as well as a range of auxiliary duties. Torishima pumps have been installed globally in this market.

<table>
<thead>
<tr>
<th>Research &amp; Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy demand continues to increase globally, however taking into account the need to also conserve power, Torishima’s objective is to produce high efficiency pumping equipment. Torishima continues to invest in R &amp; D to meet such objectives, developing high technology equipment with high reliability whilst keeping our environmental commitments.</td>
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<th>Service Solutions</th>
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<td>Torishima has an large installed base with pumps located throughout the world. We are conscious that we must provide a reliable service support for our clients, to this end we have a network of service facilities located in key areas providing access to both spare parts and innovative service solutions.</td>
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Power Generation Systems and Main Pumps

**Steam Power Generation**

- Boiler Feed Pump
- Boiler Circulation Pump
- Condensate Pump
- Circulating Water Pump
- Coal/Oil
- Steam

**Combined Cycle Power Generation**

- Boiler Feed Pump
- Boiler Circulation Pump
- Condensate Pump
- Circulating Water Pump
- Coal/Oil
- Steam

**Biomass Power Generation**

- Boiler Feed Pump
- Boiler Circulation Pump
- Condensate Pump
- Circulating Water Pump
- Biomass
- Steam

**Geothermal Power Generation**

- Brine Injection Pump / Production Well Pump / Circulating Pump
- Hot Well Pump
- Geothermal Reservoir

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**Application Chart** (Steam, Combined Cycle, and Biomass Power Plants)

<table>
<thead>
<tr>
<th>Applications</th>
<th>Products</th>
<th>MHG-A / MHB / MHA / MML</th>
<th>HLV / HLAV / CPR / GPW / MGR</th>
<th>MMTV</th>
<th>CDM</th>
<th>CDKY</th>
<th>CDMV / SPV</th>
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<tr>
<td>Boiler Feed Pump</td>
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<td>Boiler Circulation Pump</td>
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<tr>
<td>Condensate Pump</td>
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<tr>
<td>Boiler Feed Booster Pump</td>
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<td>Cooling Water Pump</td>
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**Application Chart** (Geothermal Power Plant)

<table>
<thead>
<tr>
<th>Applications</th>
<th>Products</th>
<th>CDKS / MMTV</th>
<th>CDKTV / SPTV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brine Injection Pump / Production Well Pump / Circulating Pump</td>
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<tr>
<td>Hot Well Pump</td>
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</tbody>
</table>
MHG-A
Horizontal multistage ring section pump
Capacity: up to 900m³/h (3,960USgpm)
Total Head: up to 2,500m (8,200ft)
Operating Temp.: up to 200°C (390°F)
Operating Pres.: up to 40.5MPa (405bar, 5,870psi)
Speed: up to 3,600min⁻¹
Size: up to 300mm (12in)

MHG
Horizontal multistage ring section pump
Capacity: up to 1,400m³/h (6,100USgpm)
Total Head: up to 4,200m (13,780ft)
Operating Temp.: up to 200°C (390°F)
Operating Pres.: up to 36MPa (360bar, 5,220psi)
Speed: 7,000min⁻¹
Size: 40 to 250mm (1 2/3 to 10in)

MHB
Radially split multistage barrel casing pump
Capacity: up to 2,000m³/h (8,800USgpm)
Total Head: up to 4,200m (13,800ft)
Operating Temp.: up to 180°C (356°F)
Operating Pres.: up to 42MPa (420bar, 6,090psi)
Speed: up to 7,000min⁻¹
Size: 80 to 200mm (3 to 8in)

MHD
Horizontal, end suction, multistage ring section pump
Capacity: up to 300m³/h (1,320USgpm)
Total Head: up to 1,200m (3,940ft)
Operating Temp.: up to 180°C (356°F)
Operating Pres.: up to 14MPa (140bar, 2,045psi)
Speed: up to 3,600min⁻¹
Size: 80 to 200mm (3 to 8in)

MMK / MML
Horizontal multistage ring section pump
Capacity: up to 1,000m³/h (4,400USgpm)
Total Head: up to 500m (1,640ft)
Operating Temp.: up to 250°C (482°F)
Operating Pres.: up to 6.3MPa (90bar, 914psi)
Speed: up to 4,500min⁻¹
Size: 40 to 350mm (1 2/3 to 14in)

MMK / MML
Horizontal multistage ring section pump
Capacity: up to 1,000m³/h (4,400USgpm)
Total Head: up to 500m (1,640ft)
Operating Temp.: up to 250°C (482°F)
Operating Pres.: up to 6.3MPa (90bar, 914psi)
Speed: up to 4,500min⁻¹
Size: 40 to 350mm (1 2/3 to 14in)

MMTV
Vertical mixed-/flow multistage pump with canister
Capacity: up to 2,900m³/h (12,770USgpm)
Total Head: up to 390m (1,280ft)
Operating Temp.: up to 200°C (392°F)
Operating Pres.: up to 3.9MPa (58bar, 565psi)
Speed: up to 1,800min⁻¹
Size: 40 to 400mm (1 1/2 to 16in)

HLV / HLAV
Glandless (sealless) pump motor unit
Capacity: up to 6,840m³/h (30,110USgpm)
Total Head: up to 320m (1,000ft)
Operating Temp.: -10 to 420°C (-40 to 788°F)
Operating Pres.: up to 33MPa (330bar, 4,790psi)
Speed: up to 3,600min⁻¹
Motor Rating: up to 1,500kW
Voltage: 400V to 11kV
Size: 40 to 400mm (1 1/2 to 16in)

CPW / CHR
End-suction volute pump
Capacity: up to 2,400m³/h (10,560USgpm)
Total Head: up to 270m (885ft)
Operating Temp.: up to 325°C (615°F)
Operating Pres.: up to 4MPa (40bar, 580psi)
Speed: up to 3,600min⁻¹
Size: 25 to 400mm (1 to 16in)

CPW / CHR
End-suction volute pump
Capacity: up to 1,940m³/h (8,549USgpm)
Total Head: up to 200m (670ft)
Operating Temp.: up to 325°C (615°F)
Operating Pres.: up to 10.8MPa (108bar, 1,560psi)
Speed: up to 3,600min⁻¹
Size: 40 to 300mm (1 1/2 to 12in)
### CDM
**Horizontal axially split double-suction pump**
- **Capacity**: up to 33,000m³/h (145,200USgpm)
- **Total Head**: up to 300m (980ft)
- **Operating Temp.**: up to 80°C (176°F)
- **Speed**: up to 3,600min⁻¹
- **Size**: 200 to 1,450mm (8 to 55in)

### CDMV
**Vertical axially split double-suction pump**
- **Capacity**: up to 81,600m³/h (360,000USgpm)
- **Total Head**: up to 100m (328ft)
- **Operating Temp.**: up to 80°C (176°F)
- **Operating Pres.**: up to 1MPa (10bar, 145psi)
- **Speed**: up to 1,800min⁻¹
- **Size**: 300 to 2,800mm (12 to 110in)

### CDKY / CDKS
**Horizontal radially split double-suction pump**
- **Capacity**: up to 2,800m³/h (12,300USgpm)
- **Total Head**: up to 300m (980ft)
- **Operating Temp.**: up to 200°C (390°F)
- **Operating Pres.**: up to 5MPa (50bar, 725psi)
- **Speed**: up to 3,600min⁻¹
- **Size**: 200 to 450mm (8 to 18in)

### SPV
**Vertical mixed-flow pump**
- **Capacity**: up to 8,100m³/h (36,000USgpm)
- **Total Head**: up to 100m (328ft)
- **Operating Temp.**: up to 80°C (176°F)
- **Speed**: up to 1,800min⁻¹
- **Size**: 300 to 2,800mm (12 to 110in)

### SPTV
**Vertical mixed-flow pump with canister**
- **Capacity**: up to 20,000m³/h (87,180USgpm)
- **Total Head**: up to 100m (328ft)
- **Operating Temp.**: up to 100°C (212°F)
- **Speed**: up to 1,800min⁻¹
- **Size**: 500 to 1,500mm (20 to 60in)

### CDKTV
**Vertical double-suction pump with canister**
- **Capacity**: up to 2,000m³/h (7,100USgpm)
- **Total Head**: up to 100m (328ft)
- **Operating Temp.**: up to 100°C (212°F)
- **Speed**: up to 1,800min⁻¹
- **Size**: 500 to 1,500mm (20 to 60in)

### References

- **Fujahrah Combined Cycle Power Plant, 3 x 660MW, U.A.E.**
  - MHG ring section boiler feed pump

- **Elbistan B Coal Fired Power Plant**
  - 4 x 360MW, Turkey
  - MHG barrel type boiler feed pump [12.6MW drive, 100% duty]

- **Chhabra Supercritical Coal Fired Power Plant**
  - 2 x 660MW, India
  - MHG barrel type boiler feed pump [15MW drive, 50% duty]

- **KSK Coal Fired Power Plant**
  - 6 x 660MW, India
  - HLAV spherical casing boiler circulation pump
Torishima has been providing pumps for power plants around the world for 50 years.

Europe
- Ireland
  - Huntstown
  - Tynagh
  - Great Island
- Kilroot
- Whitegate
- England
  - RWE npower
  - Isle of Grain
- Staythrope
- Latvia
- Riga
- Turkey
  - Elbistan
  - Kangel
  - IC Anadolu
- Cayiran
- Denizli
- Zetes
- Samsun
- Bekiri
- Kizildere
- Germencik

Russia, Central & South Asia
- Russia
  - Shatura
  - Sugres
  - Novocherkasskaya
- Uzbekistan
  - Navoi
  - Tashkent
- Pakistan
  - Bin Qasim
  - Kot-Addu
- Georgia
  - Gardabani

South East Asia & Oceania
- Philippines
  - Mindanao
  - Limay Bataan
  - Batangas
  - Toledo
  - Iloilo
  - Southern Mindanao
  - Thurma South
  - Pagbilao
  - APEC
- Singapore
  - Tuas

East Asia
- Japan
  - Hokkaido Electric
  - Tohoku Electric
  - Tokyo Electric
  - Chubu Electric
  - Hokuriku Electric
  - Kansai Electric
  - Chugoku Electric
  - Shikoku Electric
  - Kyushu Electric
  - Okinawa Electric
  - J-Power
  - Tokyo Gas
  - Osaka Gas
- Viet Nam
  - Ca Mau
  - Nhon Trach1&2
  - Vung Ang1
  - Omon
  - Phu My1
  - Vung Ang1
  - Mong Dong

Americas
- USA
  - Elm Road
  - Longview
  - Southerncal
  - Duke
  - Mojava
- Newark
- Georgia
  - Woodbridge
  - Council Bluffs

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- Japan
  - Daihatsu
  - Fuzhou
  - Shenzhen East
  - Beijing Thermal
  - Sidongkou
  - Xiamen East
  - Zhijin
  - Shenshua Shendong

Korea
- Korea
  - Pusan
  - Puchon
  - Ulsan
  - Yonghun
  - Tangjin
  - Sejong
  - Poyang Taek
  - Incheon

Hong Kong
- Lamma