KUBOTA High Pressure Pump / Booster Pump
for RO Desalination Plant

KUBOTA Corporation
http://www.kubota-global.net/

Tokyo Office
1-3, Kyobashi 2-chome, Chuo-ku, Tokyo, Japan  Phone: +81-3-3246-3444  Facsimile: +81-3-3246-3454

Kubota Corporation Dubai Office
Office No. LB180506 & 180507, JAFZA VIEW 1B, Jebel Ali Free Zone, P.O.Box 17440, Dubai, UNITED ARAB EMIRATES  Phone: +971-4-8857033  Facsimile: +971-4-8857032

Kubota Corporation Malaysia Branch Office
801A, Asean Tower, Asean Trade Centre, No.18, Jalan Persiaran Barat 49050 Petaling Jaya, Selangor, MALAYSIA  Phone: +60-3-7954-2334  Facsimile: +60-3-7954-1335

Kubota KASUI THAILAND CO., LTD.
719, 19th Floor KPNI Tower Building, Rama 9 Road, Bangkapi, Huai-Kwang, Bangkok 10260, Thailand  Phone: +66-2717-0815  Facsimile: +66-2717-0816

KUBOTA KASUI PHILIPPINES CORPORATION
Suite 302, 3rd Floor Golden Rock Building, No.168 Sabado St., Legaspi Village, Makati City, Philippines  Phone: +63-2-987-2379  Facsimile: +63-2-856-5519

Kubota KASUI VIETNAM CO., LTD.
No.3, Street 20, Song Than Industrial Zone II, Di An Dist., Bình Dương Province, VIETNAM  Phone: +84-903-790521  Facsimile: +84-903-790526

Kubota SANLIAN PUMP(ANHUI)CO., LTD.
http://www.kubota-sanlian.cn
He Xian Country Economic Development Zone in Anhui Province, 238  Phone: +86-555-6338019

Model: DS-VR
Model: MR-S
High Pressure Pump for RO Desalination Plant

The most advanced technology based on our long experience is applied to RO High Pressure Pump, and improved model especially for RO desalination plant application.

**Construction**

**MR-S**

**Material** (Super) Duplex Stainless Steel

- Bearing: Sleeve Bearing (Oil Lubrication)
- Shaft
- Seal: Mechanical Seal (Cartridge Type)
- Casing: Ring section type
- Balancing Device
- Impeller
- Diffuser

**Features**

1. **High Efficiency ▶ Saving operation cost**
   - New hydro design by CFD
   - Repeated performance test
   - Most optimized design and shape

2. **Simple / Compact ▶ Saving capital cost**
   - Ring Section Type: compact design by divided minimum flange size.
   - Reduced casing trunk diameter by an advanced fluid design technology while improving pump efficiency

3. **High-reliability ▶ Achieving long time stable operation**
   - (Super) Duplex stainless steel with high corrosion resistance is adopted
   - Analysis by FEM and endurance test
   - High performance carbon fiber reinforced PEEK bushing

4. **Easy maintenance ▶ Saving maintenance cost**
   - Axially-Splittable bearing components.
   - Balancing Device and Mechanical Seals without dismantling pipes

**Specification**

**Materials**

- Casing: Super Duplex / Duplex Stainless Steel
- Impeller: Super Duplex / Duplex Stainless Steel
- Diffuser: Super Duplex / Duplex Stainless Steel
- Shaft: Super Duplex Stainless Steel

**Specification**

- Liquid: Seawater
- Flange: ISO, ANSI
- Seal: Mechanical Seal (Cartridge Type)
- Bearing: Sleeve Bearing (Oil Lubrication)

**Selection Charts**

- **50Hz (Speed: 3000min⁻¹)**
  - Pump bore: Ø150~Ø300mm
  - Motor power: 450~3150kw

- **60Hz (Speed: 3600min⁻¹)**
  - Pump bore: Ø150~Ø250mm
  - Motor power: 500~2800kw

**Application**

- High pressure RO feed
- Water transmission

Achieve Low LCC (Life Cycle Cost)
Booster Pump for RO Desalination Plant

We developed newly improved Booster Pump with high efficiency specially designed for RO desalination plant. The efficiency of Kubota High Pressure Pump and other pumps related to RO desalination can be maximized by installing Pressure Pump and other pumps related to RO desalination.

Features

1. High Efficiency — Saving Operation Cost
   - Class Leading Efficiency more than 84% is achieved by combination of new diagonal flow impeller and volume casing, designed by using CFD modelling method.
   - The leakage from the impeller is minimized by decreasing the clearance between the impeller and the casing.

2. Easy maintenance — Saving maintenance cost
   - “Back Pull Out” structure - no need to dismantle pipes for maintenance.
   - Mechanical seal is assembled like a cartridge - no delicate adjustment is required, which is also suitable for seawater and high pressure.
   - Simple design without small piping.

3. High-reliability — Long time stable operation
   - Super Duplex stainless steel with high corrosion resistance is adopted.
   - Combination of angular contact ball bearing and oil ring enables stable running.
   - Analysis by FEM and repeated endurance test.

Achieve Low LCC (Life Cycle Cost)

Specification

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<tr>
<th>Materials</th>
<th>Standard Material</th>
<th>Specification</th>
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<tr>
<td>Casing</td>
<td>Super Duplex / Duplex Stainless Steel</td>
<td>Standard</td>
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<tr>
<td>Impeller</td>
<td>Super Duplex / Duplex Stainless Steel</td>
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<td>Shaft</td>
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<td>Seal</td>
<td>Mechanical Seal</td>
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<tr>
<td>Bearing</td>
<td>Roller / Ball</td>
<td></td>
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Selection Chart

Best efficiency when installed with Kubota High pressure pump MR-S and other pumps related to RO desalination

High Pressure Pump MR-S

SV-JA

DF-VS

DV-LJ