**CENTRIFUGAL PUMPS**

**GENERAL**
TORISHIMA MMO, is a high pressure centrifugal pumps are pumps of ring section type. They are suitable for clean media free from abrasive and solid particles and not liable to attack the pump mechanically (abrasion) or chemically (corrosion).

**APPLICATIONS**
They are used in waterworks, pressure boosting stations, sprinkling and irrigation installations, fountains, firefighting systems and in mechanical engineering. They handle boiler feedwater and condensate, circulate cooling water and hotwater and are used for power water generation and in carwashes.

**PERFORMANCE RANGE**
- **Capacity**: up to 36 l/s (130 m³/h)
- **Total Head**: up to 400 m
- **Operation Pressures**: up to 40 bar
- **Operating Temperatures**: - up to +110°C (GP) - up to +120°C (MS)

MMO pumps can also be used as circulating pumps in high pressure systems because even the suction casing is designed for 40 bar. The only restriction is that the sum of the maximum suction pressure plus total head must not exceed 40 bar at zero capacity.

**THOROUGHLY RATIONALIZED DESIGN TO MEET ANY SPECIFIED REQUIREMENTS**
Simple and high performance design contributes to reduction of equipment cost and energy-saving

Hydrodynamically simplified pump design resulted in attractive cost reduction. Besides not only the number of stages is lower but also pump size is smaller maintaining the same performance as our former models.

Shaft seal requires no cooling for temperature range up to 120°C
Elimination of cooling water feed and return piping and monitoring instruments.

Nozzle orientation can be freely chosen
The pump feet, integrally cast onto the bearing housings, allow free orientation of both suction and discharge nozzles, as illustrated on the right.

Variety of material combination
Various materials are available, so as to provide wide application range.

**MECHANICAL SEAL**

**PART NO.** | **DESIGNATION** | **MATERIAL** | **PART NO.** | **DESIGNATION** | **MATERIAL**
--- | --- | --- | --- | --- | ---
1060 | Suction Casing | FC250 | 5070 | Deflector | S45C
1070 | Discharge Casing | FC250 | 5240 | Packing Sleeve | SUS430L2
1090 | Stage Casing | FC250 | 5259.1 | Suction Sleeve | FC250
1711 | Impeller | FC250 | 9010 | Hexagonal Bolt | SS400
2100 | Shaft | SUS420L2 | 9020.1 | Stud Bolt | S45C
3100 | Impeller | FC250 | 9021 | Blind Bolt | SUS304
3210 | Ball Bearing | NO.63—DOUC3 | 9090 | Tie Bolt | S45C
3500 | Bearing Bracket | FC250 | 9200.1 | Hexagonal Nut | SS400
3600 | Bearing Cover | FC250 | 9200.2 | Hexagonal Nut | SUS304
3610 | Bearing End Cover | FC250 | 9201 | Hexagonal Nut | SS400
4120.1 | D-Ring | VITON | 9230.1 | Snap Ring | SKS
4120.2 | D-Ring | VITON | 9230.2 | Snap Ring | SKS
4520 | Gland | FC200 | 9400.1 | Key | S45C
4530 | Lantern Ring | BC | 9400.2 | Key | S45C
4610 | Gland Packing | Carbon Graphite | 9400.3 | Key | S45C
5040.1 | Spacer Ring | FC200 | 9400.4 | Key | S45C
5040.2 | Spacer Ring | FC200 |
### MMO 32

**Dimensions (in mm)**

<table>
<thead>
<tr>
<th>NO. OF STAGE</th>
<th>MOTOR DIMENSIONS</th>
<th>PUMP SET DIMENSIONS</th>
<th>BASEPLATE DIMENSIONS</th>
<th>FOUNDATION DIMENSIONS</th>
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<tr>
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### MMO 40

**Dimensions (in mm)**

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**Flange Dimensions**

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<th>Suction Nozzle</th>
<th>Discharge Nozzle</th>
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<td>Dimensions (in mm)</td>
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**Auxiliary Connections, Dimensions and designations**

| Motor weights vary according to manufacturer, pole or type |

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Motor weights vary according to manufacturer, pole or type.