# SMR
## REMOVABLE INTANK PUMPS

Shinko "SMR" removable intank pump is operated as an emergency cargo pump for an LNG carrier, it is usually kept in the deck store.  In the event that an unexpected accident occurs to the cargo pumps, it can be used by being hoisted down inside the column in the cargo tank.
The pumps have been desingned with the following various features.

### GENERAL CHARACTERISTICS

- The pump and motor are so constructed as to form a single unit and be submerged in the pumping liquid. Thus, there is no fear of liquid and gas leakage because no sealing devices are required. ›

- The motor is operated in liquid, and is completely isolated from the atmosphere. Hence, there is no fear of an explosion. ›

- Ball bearings are lubricated via the pumped liquid, which is also used for cooling the motor. ›

- An auto balance mechanism is located on the back of the impeller to balance the axial thrust in all operating ranges. ›

- An inducer with high suction performance is equipped underneath the impeller.  So, full capacity operation is possible while unloading, leaving as little residual liquid as possible. ›

- The stator coil is constructed with a form wound type having a high insulation property and rigidity. Materials with a high insulation property, durability and cryogenic resistance property are used for the motor insulation and varnish. ›
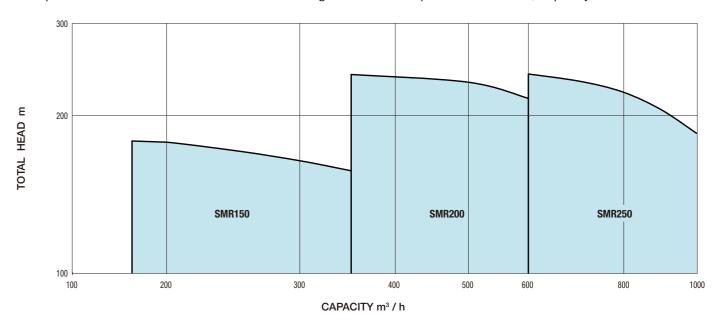
## SPECIFICATION

The vertical removable SMR models are submerged liquefied gas pumps having 1 stage, and the following standard 3 models are available:

| Item | Model | SMR 150 | SMR 200 | SMR 250 |
|---|---|---|---|---|
| Type | | Removable type 1 stage centrifugal pump | | |
| Max. capacity | (m³/h) | 350 | 600 | 1000 |
| Max. total head | (m) | 180 | 240 | 240 |
| Liquid temperature | (°C) | −163 | | |
| Discharge bore | (mm) | 150 | 200 | 250 |
| Type | | Submerged type 3-phase squirrel-cage induction motor | | |
| Synchronous speed | (min⁻¹) | 3600 | | |
| Voltage | (V) | 440, 6600 | | |
| Frequency | (Hz) | 60 | | |
| Coil | | Form wound type | | |
| Insulation | | Class F | | |
| Rating | | Continuous | | |
| Starting method | | Full / reduced voltage start available | | |

## PERFORMANCE CHART

Pump model can be determined from the following charts based upon the total head, capacity: