

SM

SUBMERGED LIQUEFIED GAS PUMPS

Shinko "SM" submerged liquefied gas pumps have been developed as cargo pumps for LNG carriers based upon our rich experience in designing, manufacturing, and operating a large number of discharge pumps, pressurizing pumps, and circulating pumps used at LNG terminals or in LNG cryogenic power generating plants.

In order to operate submerged properly in cryogenic liquefied gas under harsh conditions, the pumps have been designed 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 SM models are submerged liquefied gas pumps having 1,2,4 stages, and the following standard 13 models are available:

Item	Model	SM 50	SM 50-2	SM 50-4	SM 65	SM 65-2	SM 100	SM 150	SM 202	SM 200	SM 250	SM 300	SM 300H	SM 350
Max. capacity (m ³ /h)		30			60		135	300	600		1000	1500		2100
Max. total head (m)		165	195	500	165	195	170	170	210	170	170	160	195	190
Liquid temperature (°C)		-163												
Discharge bore (mm)		50			65		100	150	200		250	300		350
Synchronous speed (min ⁻¹)		3600								1800				
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, and capacity:

