



SUBMERSIBLE TURBINE GENERATORS

No powerhouse
Easy installation

Submersible enlarge your idea!

Low running sound
Flood-proof
Small installation space



EAML ENGINEERING CO.,LTD.

River maintenance
Irrigation
Rehabilitation
Cooling water
Industrial water
Sewage

SUBMERSIBLE TURBINE GENERATORS

Generator

Induction generator is designed for submersible applications. Class F insulated stator winding rated at 155°C. Available liquid temperature is up to 40°C.

Generator Bearing

Roller and ball bearings. They are lubricated with grease.

Planetary Gearbox

Turbines that require a speed increaser are equipped with a planetary gearbox. The gearbox is lubricated and cooled with gear oil. It has a pressurized system for lubrication, filtration and cooling.

Mechanical Seal

The system for sealing the shaft consists of two mechanical face seals mounted in tandem. An oil chamber in between, containing a special environmentally-safe oil, lubricates and cools the tungsten carbide seal faces.

Fixed Guide Vane

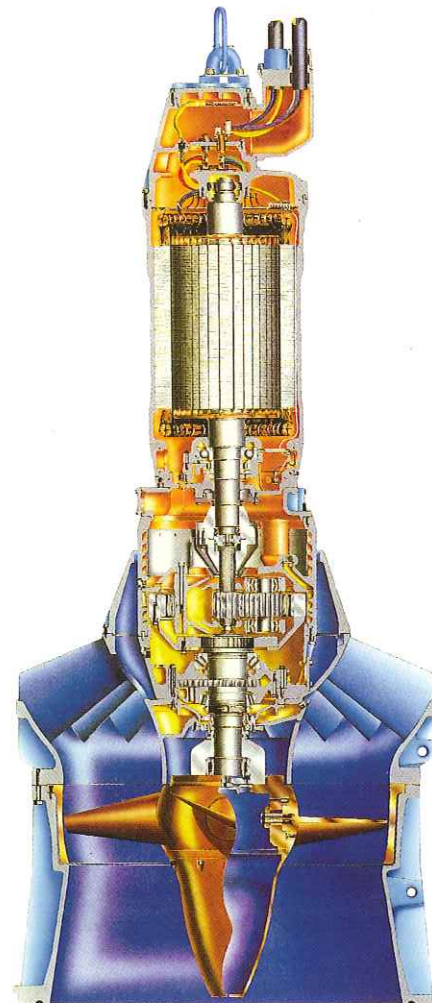
In order to provide optimal performance over a wide range, four(4) different fixed guide vane angles are available. EL7570 has five(5) different fixed guide vane angles.

Wear Ring

A replaceable wear ring in aluminum bronze or stainless steel will maintain to keep high efficiency.

Runner

Runners are available with either four(4) or five(5) blades. The runner blades are available in aluminum bronze or stainless steel and blade angles can be set manually in increments of one(1) degree.



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Submersible Applications

① PENSTOCK 5-20 M HEADS

② INTAKE SIPHON 3-20 M HEADS

③ TANDEM FLUMES 3-10 M HEADS

④ OPEN OR COVERED FLUME WITH CYLINDERGATE 3-10 HEADS (ALSO IN FLOOD-PROOF VERSION)

⑤ BIFURCATIONS 5-20 M HEADS

⑥ TRADITIONAL OPEN OR COVERED FLUME 3-10 M HEADS

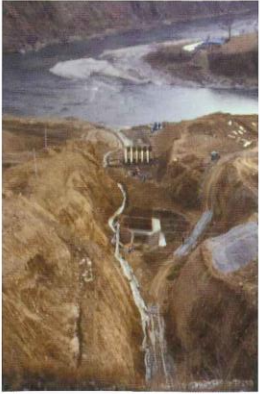
⑦ SUBMERGED UNDERWATER CHAMBER 3-8 M HEADS AND LARGE FLOW

⑧ CHAMBER SIPHON 3-8 M HEADS AND LARGE FLOW

Applications

- Natural rivers with storage
- Capacity or run-of-the-river conditions
- Cooling water outfalls at large power plant and industrial plants
- Wastewater treatment plant outfalls
- Irrigation canals
- Minimum flow recovery at larger hydroelectric plants
- Water release at lock and dam structures in rivers and canals
- Rehabilitation of old power station

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Advantages

Submersible installation brings you some advantages which conventional type of turbine cannot supply you.

No powerhouse

Submersible Turbine Generator(STG) doesn't need powerhouse.

You can save money for powerhouse cost. You consider the house for panels only.

Easy installation

STG doesn't need special treatment STG sits on and is sealed off against a turbine seat. STG can sit by its own weight and the water pressure while running.

Small installation space

As STG is one unit composition and vertical installation, it doesn't require large space like conventional type.

Flood-proof

Conventional type generator normally dislike water. As STG is always in water, you don't worry about it.

Low running sound

As STG is always in water, running sound weaken by water.

Dimensions and Weight

Drive Type		Direct Drive				Gear Drive			
Model		7556	7570	7585	7600	7585	7600	7620	7650
Height (mm)	Min.	2,370	2,560	3,070	3,205	3,545	3,675	3,790	4,125
	Max.	2,630	3,140	3,270	3,405	4,245	4,380	4,495	4,665
Weight (kg)	Min.	1,350	1,800	3,750	4,250	4,000	4,600	5,650	8,400
	Max.	1,650	4,150	4,550	4,850	6,550	7,150	8,200	10,800
Max. Diameter (mm)		740	1,140	1,140	1,340	1,140	1,340	1,540	1,940

PERFORMANCE RANGE

