



## Product

**BSFI Series Braking Systems with SOBO®**

## Application

**Dam Ship Lift**

## Highlights

- Model BSFI 207 brakes provide 1800 Nm of torque
- Model BSFI 330 brakes provide 13000 Nm of torque
- Unique SOBO soft-braking control
- Custom hydraulic power units manufactured in-house

A reliable braking solution was required for a ship lift constructed at the Three Gorges Dam that spans the busy Yangtze River near Sandouping, China. The dam is the world's largest power station in terms of installed capacity (20,300 MW). The ship lift shortens the time taken for vessels to pass the dam from three hours to one (actual lifting time is 21 minutes). Used primarily by passenger ships, the lift functions like an elevator, lifting and lowering vessels vertically 113 m (370 ft.) to upstream and downstream water levels. With a useable space of 120 x 18 x 3.5 m and a 3,000 tonne capacity, the lift is the largest of its type in the world.

The lift utilizes four pinions that act on tooth racks within the lifting towers. Each pinion is driven by two electric motors and lifts a series of 64 cables (74 mm [3 in.] diameter) that are attached to suspended concrete counterweights.

The lift's braking system required accurate deceleration and very precise synchronization of the four pinion drive units. The lift's mechanical deck equipment OEM contacted all major global brake manufacturers regarding this challenging project. Ultimately, Svendborg Brakes was selected because its package of highly reliable caliper brakes and hydraulic units, combined with the SOBO® braking control, matched the demanding application requirements.

Svendborg Model BSFI 207 dualspring caliper brakes, positioned between the motor and gearbox on each drive unit, are used for high-speed emergency stopping. Model BSFI 330 dual-spring caliper brakes, positioned on the opposite side of the gearbox, are used as parking brakes.

- Model BSFI 207 brakes provide 1800 Nm of torque and act on a 500 mm dia. disc.
- Model BSFI 330 brakes provide 13000 Nm of torque and act on a 900 mm dia. disc.

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