



## Product

## High-Performance Couplings

## Application

## Aeroderivative Gas Turbine

## Highlights

- High-performance 3.5 meter long high-speed coupling
- High-performance low-speed coupling
- Aviation grade S5.99 stainless steel, traceable laser-etched bolts
- Interlocking element and spacer end flanges reduce overhung mass on high-speed coupling
- Shear pin overload protection device installed on low-speed coupling
- Both couplings are API 671 compliant

The IHI Group, one of the largest engineering and manufacturing companies in Japan, specializes in large-scale power and construction projects. One aspect of its business is the use of aeroderivative gas turbines for power generation in landbased, combined cycle gas turbine (CCGT) power plants.

Two crucial components within a CCGT installation are the coupling that connects the gas turbine rotor to a speed reducing gearbox and the coupling that connect the gearbox to a generator.

Using the General Electric LM6000 aeroderivative gas turbine with power upto 50MW rotating at 3,600 rpm the high speed coupling which is typically around 3.5 metres long, connects the turbine to the gearbox reducing the speed to 1,500 rpm. The reduction in speed equates to an increase in torque, meaning the low-speed coupling must be built to transmit high levels of torque produced.

The low speed coupling whilst transmitting the high level of torque of the gearbox to the generator also acts as a safety device with the use of a set of shear pins that provides a simple, effective and precise method of disconnecting the drive system protecting both the turbine and the gearbox in the event of an overload situation.

IHI works closely with Bibby Turboflex to develop high-performance couplings to suit each individual application that have to be designed and manufactured in approximately 14 weeks to meet installation schedules.

Bibby Turboflex high-performance couplings are designed in accordance with API 671 and offer traceability for all components.

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