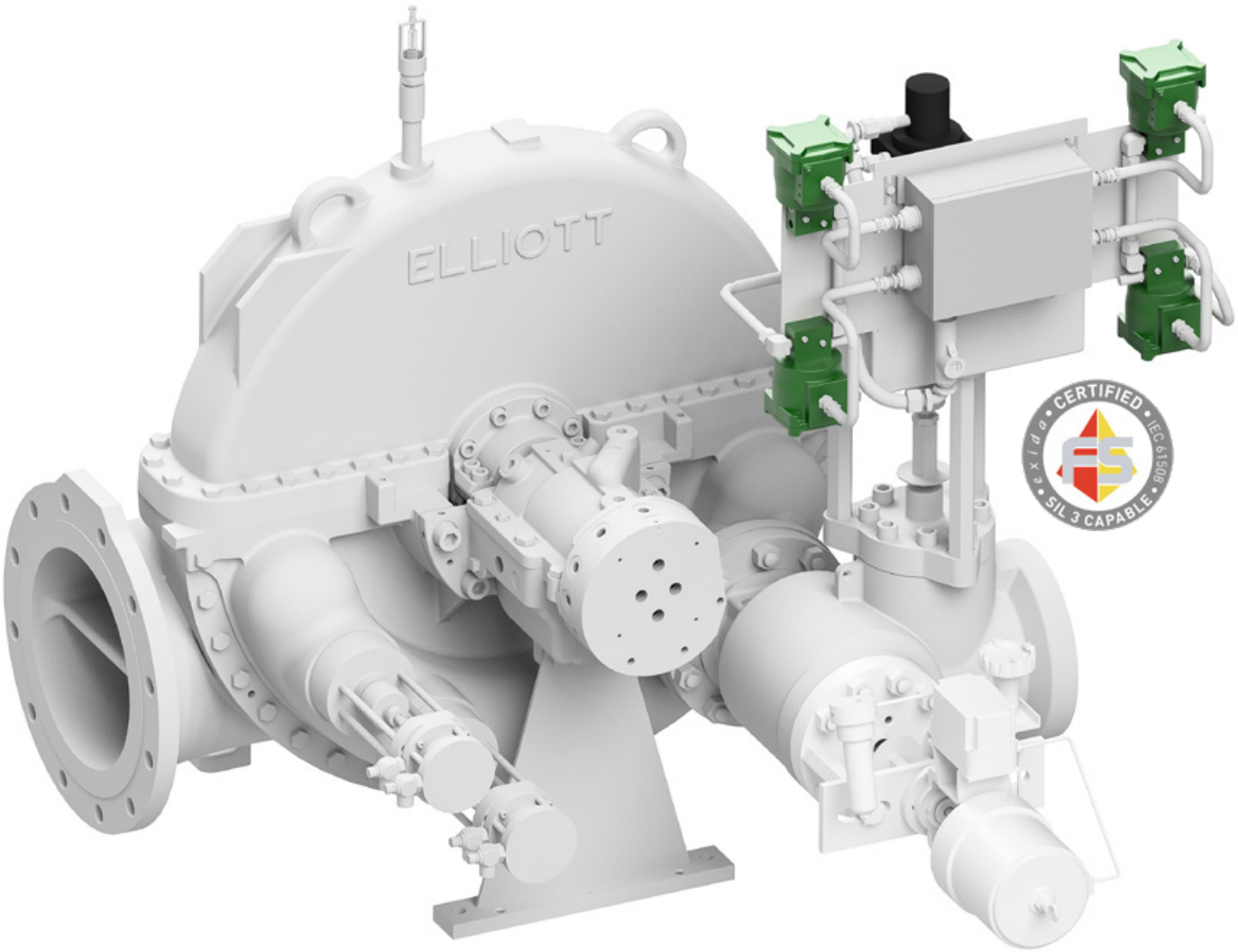
Pneumatic Trip System with Partial Stroke Actuation

Pneumatic trip systems provide a vital safety function for steam turbines. Proper maintenance and testing are necessary to ensure safe and reliable equipment operation. Over time, steam impurities and contaminants can cause boiler scale or rust to build up, resulting in the trip valve sticking or not working properly when necessary. Verifying trip valve functionality on a regular basis is critical.

Elliott's patent-pending, pneumatic trip system with partial stroke actuation is certified as Safety Integrity Level (SIL) 3 Capable. It provides turbine operators with a safe and effective way to exercise the trip valve regularly, without interfering with the turbine's operation or its ability to trip. Within seconds, the system completes a partial stroke of the trip valve, enabling operators to determine if the trip valve is working properly or requires attention. This small movement can mean the difference between the turbine tripping when necessary and catastrophic failure.

Before the introduction of the partial stroke pneumatic trip system, convenient online exercising of the trip valve required an oil-operated trip and throttle (T&T) valve – a more expensive and complicated system.



Regular exercising of a trip valve is essential to verify that it is in proper working order. Without this capability, any type of buildup on the trip valve can hinder its ability to close when needed. A trip valve malfunction may prevent the safe shutdown of the steam turbine in the event of a trip condition.

The pneumatic trip system with partial stroke actuation allows turbine operators to quickly and easily exercise the trip valve while the turbine is in operation. This simple process improves the reliability of the turbine and ensures that the trip valve is functioning properly.

Turbine operators can initiate the partial stroke locally or remotely via a distributed control system (DCS). The system is supplied with standard hardware that is suitable for either application, providing flexibility to adapt the partial stroke system to any equipment configuration.

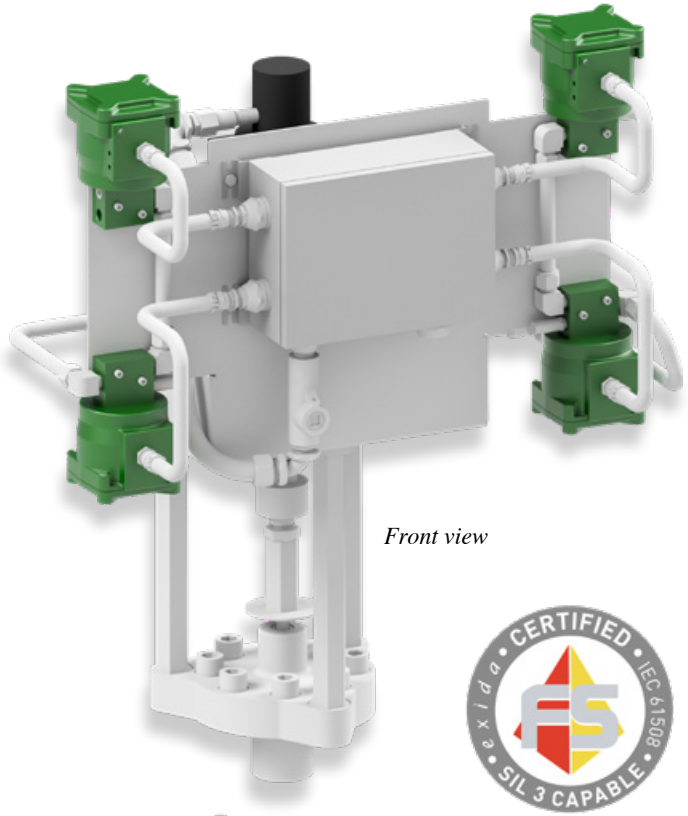
Partial Stroke Pneumatic Trip System Benefits

- Increased safety
- Improved reliability by eliminating spurious trips
- Minimal impact on turbine maintenance
- Cost-effective alternative to a trip and throttle valve

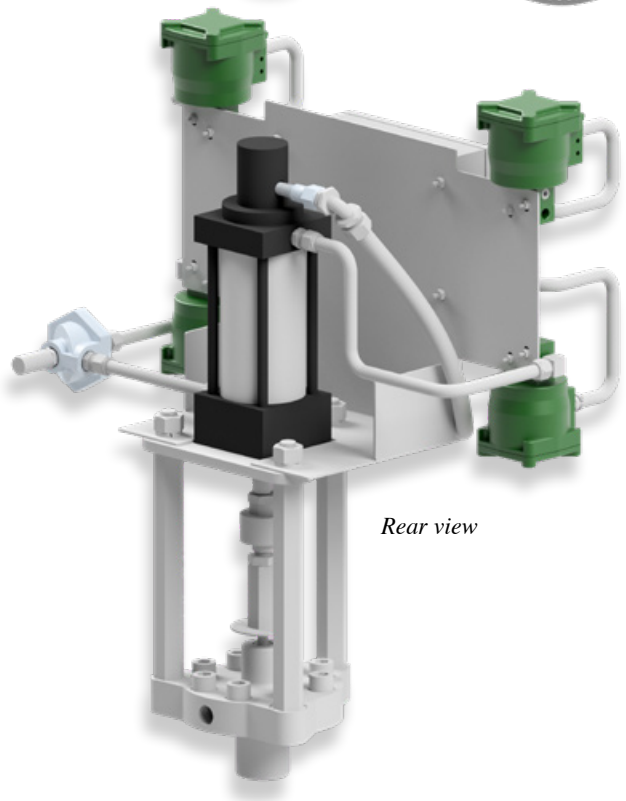
Partial Stroke Pneumatic Trip System Features

- Certified as SIL 3 Capable
- Partial stroke capability to verify trip system functionality
- Independent of the overspeed trip system
- Pneumatic cylinder with fail-safe spring closure and fast closing rate
- Proven functionality withstands excessive vibration
- 1oo2 and 2oo2 configurations
- Complies with environmental and regulatory requirements

The partial stroke pneumatic trip system is an example of Elliott Group's unwavering commitment to quality and safety. Elliott continues to expand its product offerings to include innovative solutions that are designed to improve equipment performance, increase safety, and lower maintenance costs.



Front view



Rear view

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