

Pos-E-Stop 203 Trip Block

Superior Turbine Tripping Reliability



The world turns to Elliott

TURBINES

Reliability You Can Count On

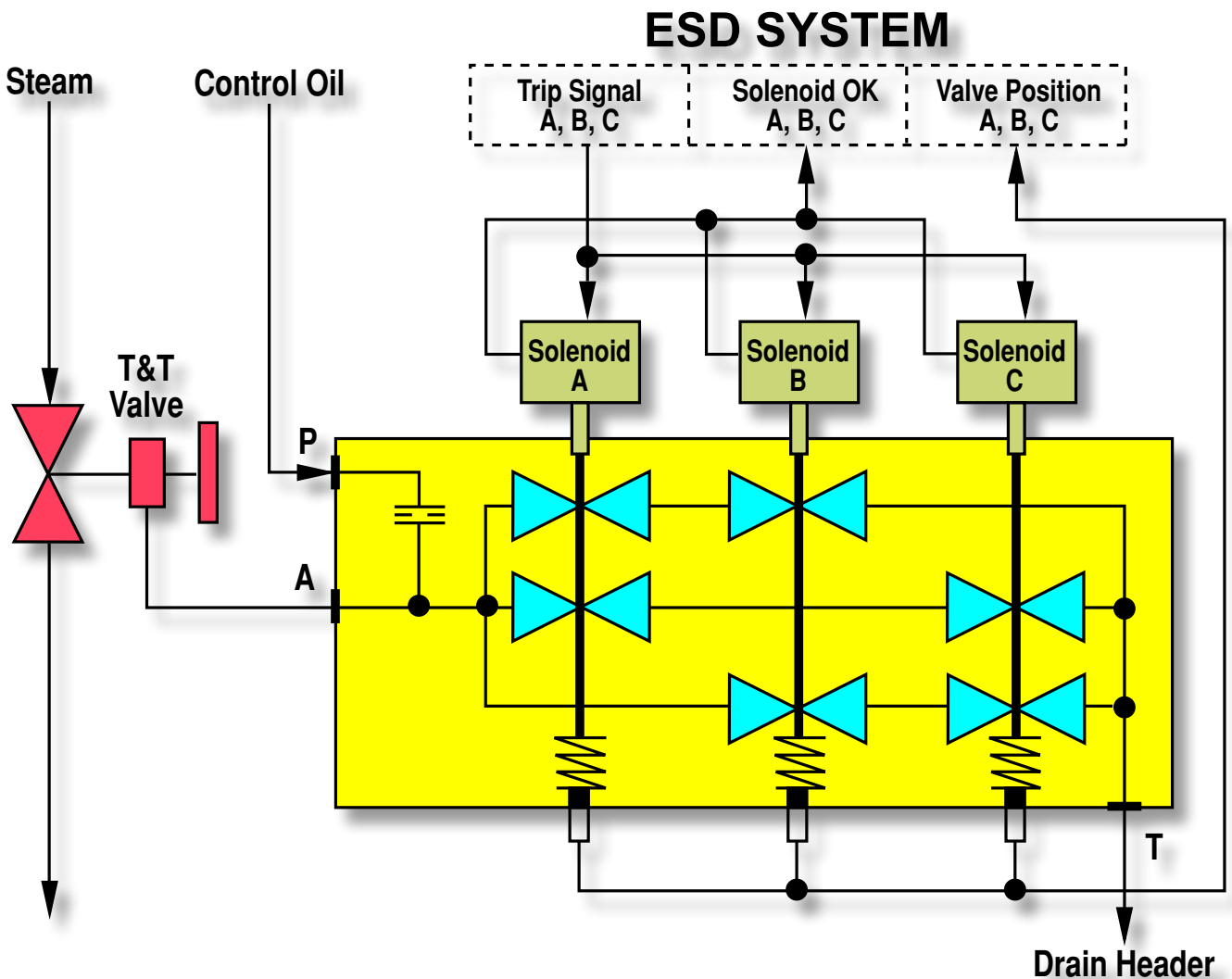
The new Elliott Pos-E-Stop 203 Trip Block is a technological leap forward in the control of trip valves for steam turbines, hot gas expanders and similar power applications.

The unique design of the Pos-E-Stop 203 Trip Block provides a significantly higher degree of tripping reliability than the single or paired solenoid arrangements typically used today. And the Pos-E-Stop 203 Trip Block is fast. Its "Best in Class" response time reduces the tripping interval for enhanced safety.

Flexible "Two Out Of Three" Design

The Pos-E-Stop 203 Trip Block uses three identical electro-hydraulic solenoids to create a flexible "two out of three" voting logic for unequalled failure tolerance. This "two out of three" logic design allows for fully automated on-line testing and on-line replacement of critical components while maintaining trip protection and without risk of accidentally tripping the equipment.

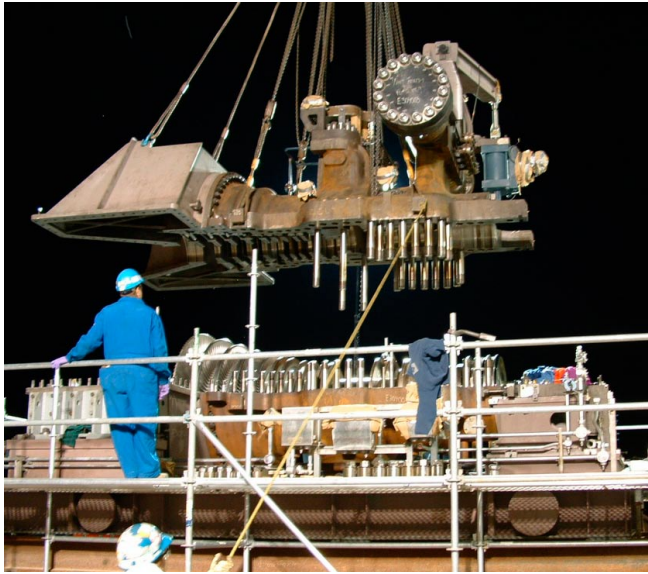
Principle Schematic



The Pos-E-Stop 203 Trip Block activates the trip circuit if any two of the three solenoids are de-energized. Each one of the three solenoids can be tested individually and can be replaced on-line while the trip functionality remains intact in a "one out of two" pattern. The "two out of three" logic is re-instated once the solenoid has been replaced and tested. When paired with a TMR electronic trip, the Pos-E-Stop 203 Trip Block provides a completely redundant trip circuit.

Spring-Loaded Pistons for Safety

The solenoid actuators in the Pos-E-Stop 203 Trip Block act on spring-loaded control pistons. For safety reasons the spring beneath each control piston forces the piston into a “fail to open” position. The position of each control piston (valves open / valves closed) is sensed by up to 3 position sensors. The piston control sensors can also be replaced on-line without defeating the trip functionality.

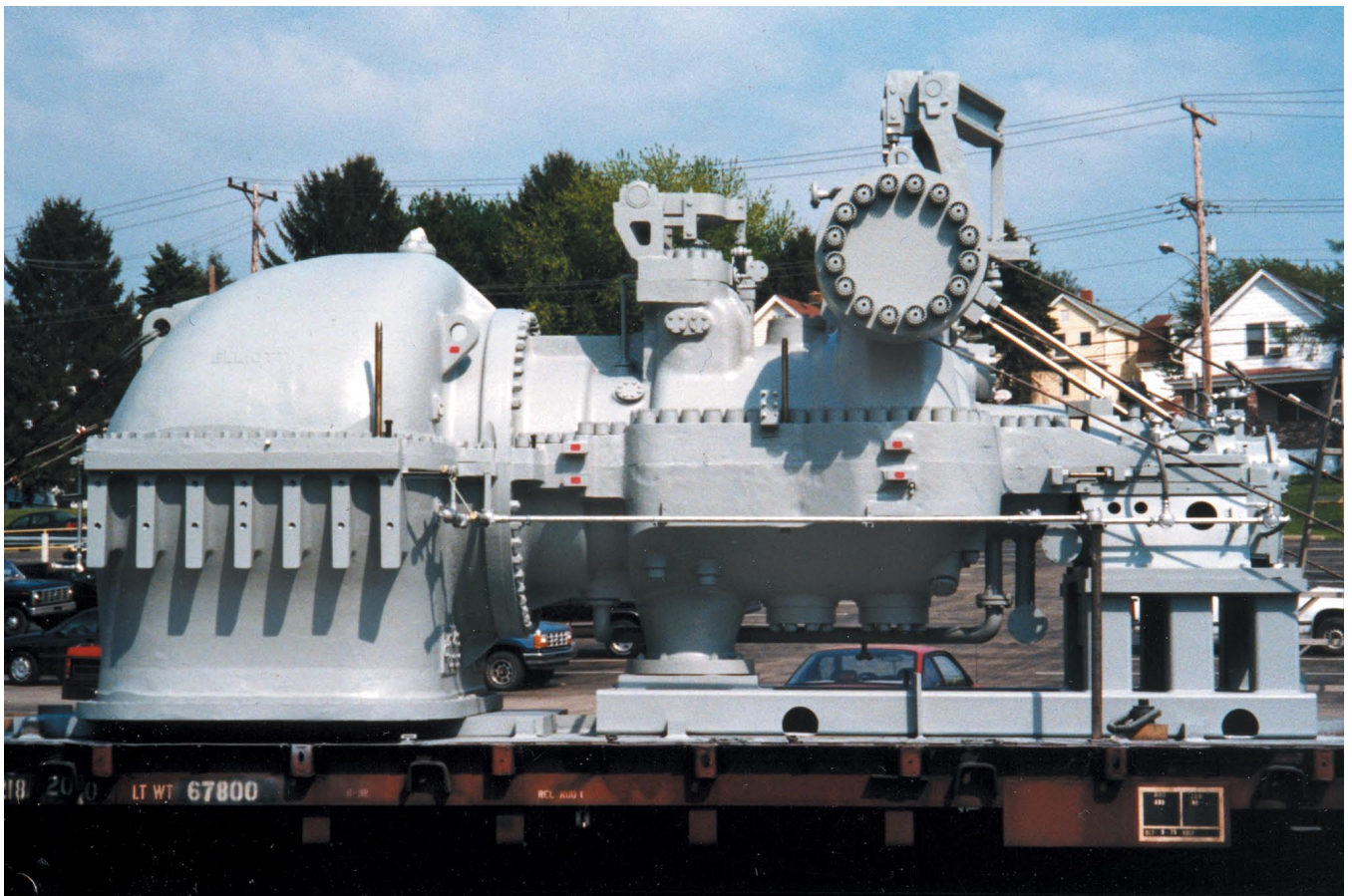


Mono-Block Construction Facilitates Installation and Operation

The three solenoids in the Pos-E-Stop 203 Trip Block are integrated in a mono-block design with three hydraulic connections:

1. Feed port P from the control oil header with an integrated flow orifice
2. Control port A connected to the trip valve
3. Dump port T connected to the return header

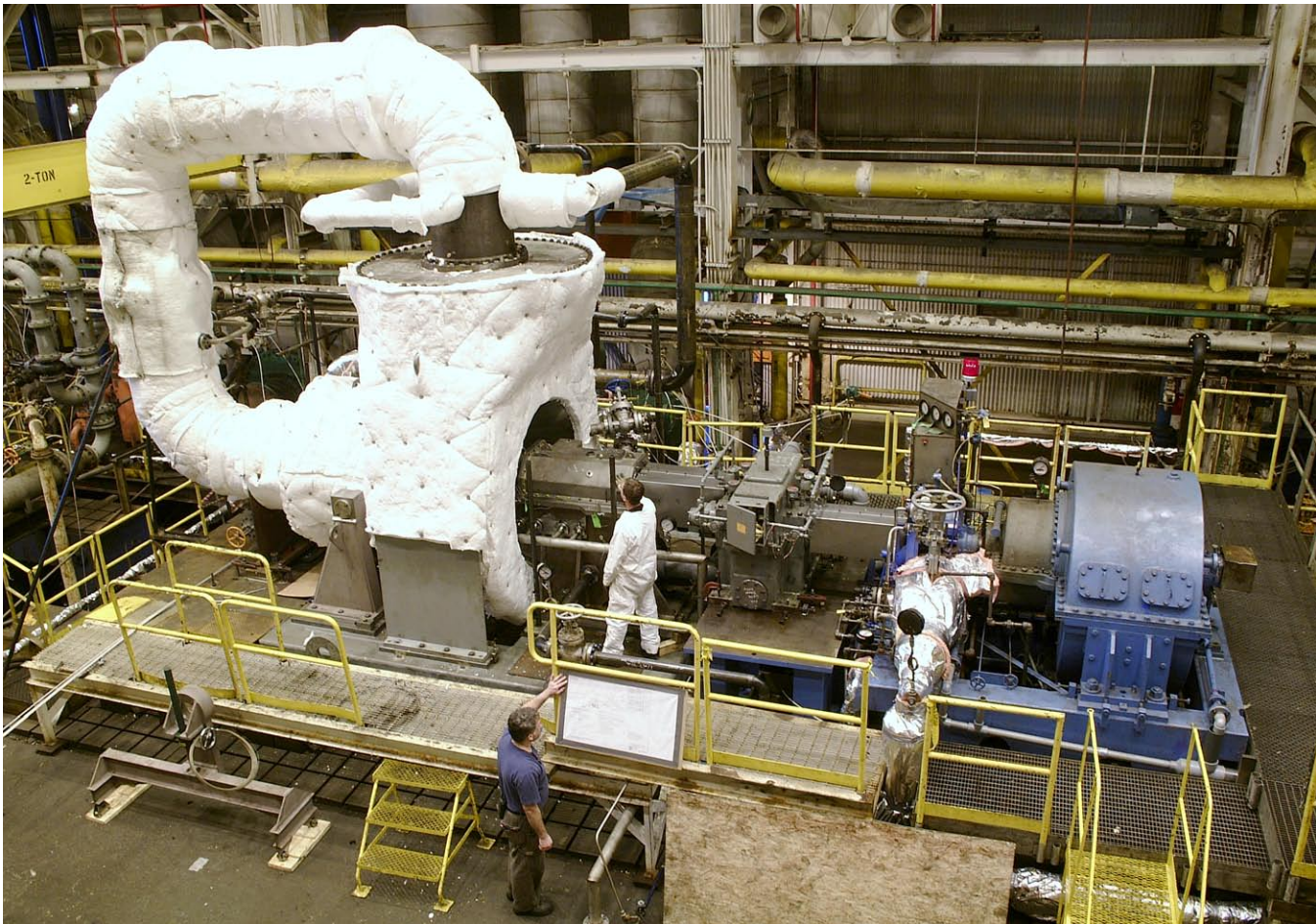
This functional integration simplifies installation, piping, wiring and maintenance when compared to tripping arrangements using individual solenoid valves. The unique design of the Pos-E-Stop 203 Trip Block also avoids the use of isolation valves that can increase the risk of operator errors. The use of only three flange connections virtually eliminates the chance of oil leaks. Nor does it require pressure gauges, flow measurement devices or bypass orifices for on-line testing. On-line testing of the Pos-E-Stop 203 Trip Block is virtually fool-proof, while maintaining tripping capability and allowing the equipment to remain in operation.



Pos-E-Stop 203 Trip Block

Design Benefits and Features

- Improved trip system reliability
- Very fast response time (Best in Class) reducing tripping interval
- Increased availability
- On-line test capability without defeating trip protection
- On-line replacement of critical components without defeating trip protection
- Continuous on-line monitoring of solenoids and valve positions
- Elimination of isolation valves reduces risk of operator error
- Enables trip system standardization across the plant
- Easy to install; simplifies most piping layouts
- Meets Hazardous Area Classifications
- Meets applicable CE directives



901 North Fourth Street
Jeannette, Pennsylvania 15644-1474
www.elliott-turbo.com

Elliott Company reserves the right to modify the design or construction of the equipment described in this bulletin and to furnish it, as altered without further reference to the illustrations or information contained herein.