IMI
Precision Engineering

Engineering
GREAT Solutions

Nuclear
power generation

IMI NORGREN
IMI HERION

Contents

Engineering GREAT solutions through people, products, innovation and service

IMI Precision Engineering is a world-leader in fluid and motion control. Building close, collaborative relationships with our customers, we gain a deep understanding of their engineering needs and then mobilise our resources and expertise to deliver distinctive products and solutions.

Wherever precision, speed and engineering reliability are essential, our global footprint, problem-solving capability and portfolio of high performance products enables us to deliver GREAT solutions which help customers tackle the world's most demanding engineering challenges.

> **Reliability**
We deliver and support our high quality products through our global service network.

> **High performance products**
Calling on a world-class portfolio of fluid and motion control products including IMI Norgren, IMI Buschjost, IMI FAS, IMI Herion and IMI Maxseal. We can supply these singly, or combined in powerful customised solutions to improve performance and productivity.

> **Partnership & Problem Solving**
We get closer to our customers to understand their exact challenges.

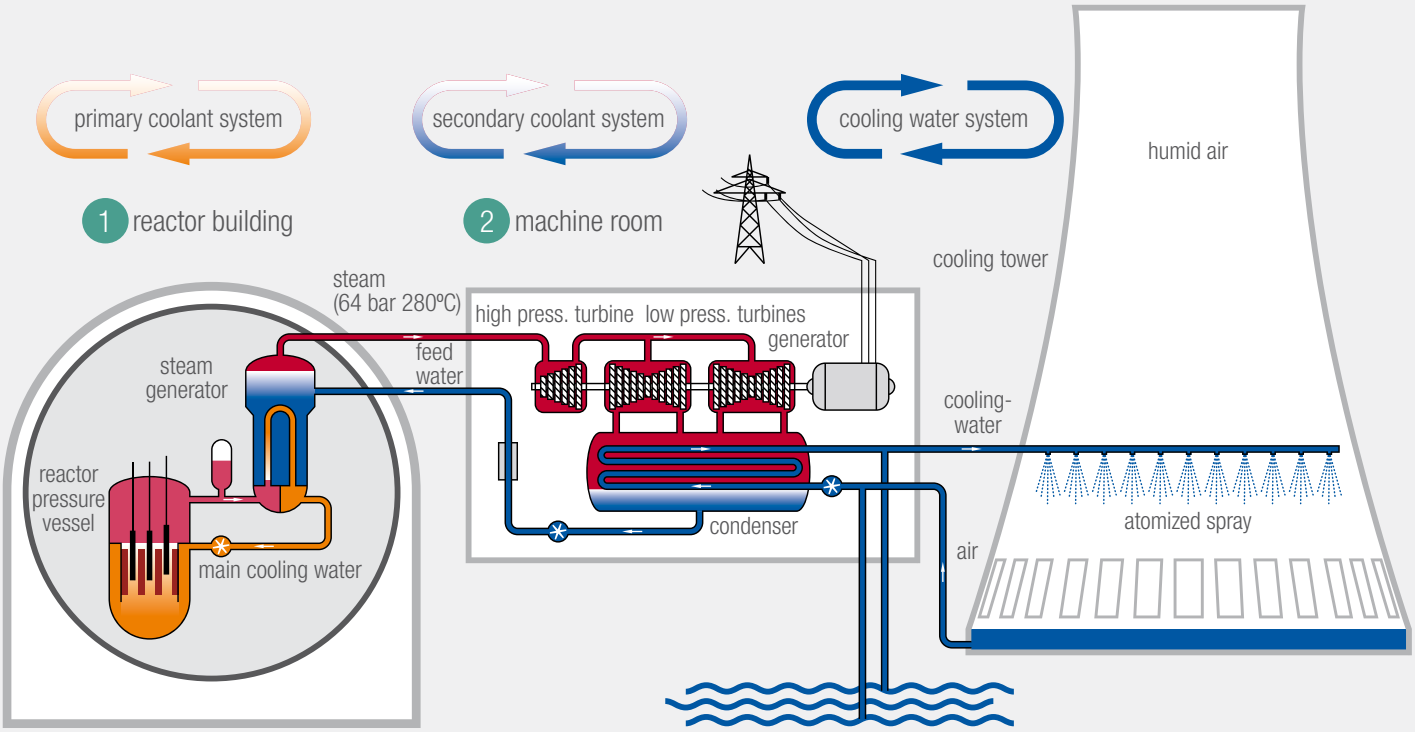
Proven solutions for the nuclear industry

IMI Precision Engineering has intimate applications knowledge and proven technology to design and manufacture nuclear class valves (To ASME, RCC-M, I-EEE, KTA AND OTT) for safety related applications on Nuclear Power Plants globally. With worldwide reputation for quality, service and reliability we have Nuclear class product in service for over 30 years.

IMI Precision Engineering is recognized as global provider of instrumentation and automation control solutions.

Our products include:

- Solenoid Valves to control critical different type of process valves
- Process solenoid valves to control different type of mediums
- Bellows Sealed and Gland Packed Globe Valves
- Bellow Sealed and Gland Packed Instrumentation Valves and Manifolds
- Check Valves
- Pressure Regulators
- Excess Flow Valves



Delivering value through our valves

Our valves are located and used around the following systems:

- Boron fast shut down system
- Moderator system isolation
- Primary circuit instrumentation isolation
- Reactor auxiliary systems
- Gas collection and monitoring system
- Coolant storage and treatment system
- Gaseous Waste Processing System
- Nuclear Component Drain & Vent Systems
- Hydrogen Monitoring System
- Control & Instrumentation Systems
- Cooling degassing system
- Hydrogen monitoring system
- Electro-deionisation / Steam Generator system
- Feedwater recirculation system
- Steam Generator Nitrogen Blanket System
- Primary, Secondary and Auxiliary circuit instrumentation line breakage protection

Quality assurance

IMI Precision Engineering has dedicated technical expertise and comprehensive nuclear capabilities.

- Proven in Safety
- Proven in Reliability
- LOCA tested
- Proven in use at harshest conditions and environments
- Development and supply Solutions for high performance power stations
- Dedicated facilities
- Legislation aware
- Applications expertise
- Valve selection and specification through single source for stop shopping for fluid systems

Globally Installed Base

IMI Precision Engineering offers ASME N-Stamp accreditation, with a globally installed base in the nuclear industry – US and Chinese AP 1000´s Chinese CPR – 1000´s and VVER´s. On-going support on originally supplied product continues on UK´s AGR fleet and PWR plant for their Plant Life Extension and General Maintenance needs.

Additional reactors abroad include:

- CANDU PHWR´s (Canada, Romania, China, Argentina and South Korea)
- BWR´s (Sweden and Finland)
- PWR´s (Belgium, China and Slovenia)
- VVER´s (China, Czech Republic, Finland and Slovakia)

Instrument needle valves, globe valves and manifolds

Instrumentation needle valves and manifolds

Bellows saled globe valves

Pressure regulator

Solenoid Valves

IMI Herion solenoid valves are used to control different applications within the VVER (pressurized light water cooled reactors) in many nuclear power plants, since the first installation in the early 1970. Typically in use for different ball-/ globe-/gate-valve packages operated with high pressure actuators controlled with IMI Herion pilot operated solenoid valves, to ensure safe water-, and steam circuits with typical valve packages of global recognized manufacturers.

Type overview

- **1090048:** 5/2WV, DN 12, CV
- **1090050:** 3/2 WV, DN 8, CV
- **1090051:** 3/2 WV, DN 8, CV, PR
- **1090052:** PR, DN 8 (Pressure Regulator)
- **1090053:** 3/2 WV, DN 8, CV, SV, PR
- **1090054:** 5/2 WV, DN 25, CV, SV, PR
- **1090055:** 5/2 WV, DN 25, CV
- **1090056:** 5/2 WV, DN 25
- **1090057:** 5/2 WV, DN 6, CV
- **1090058:** 5/2 WV, DN12, CV, SV, PR
- **1090059:** 3/2 WV, DN 12, CV
- **1090060:** PR, DN 12 (Pressure Regulator)
- **1090064:** 5/2 WV, DN 12, CV, y1 redundant

Check Valve (CV) – Ensure pressure maintenance in case of an accident.
Safety Valve (SV) – Guard against exceeding the max. pressure.
Pressure Reducer (PR) – Ensure a constant inlet pressure.

Certificates/Approval

- DIN EN ISO 9001
- German KTA 1401
- OTT87 (design in accordance or complies)
- IEEE qualified Solenoid Valve
- Pressure Equipment Directive (97/23/EC)
- PAKS – Quality Assurance Certificate

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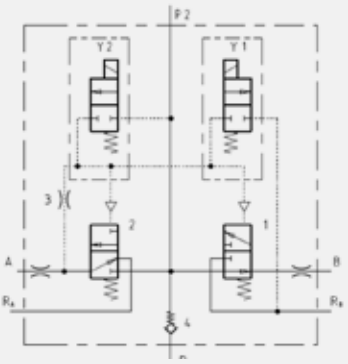

- 3/2 way pilot operated valve
- DN 12
- Operating pressure 75 bar

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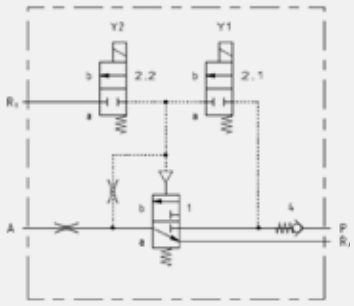

- 3/2 way pilot operated valve
- DN 12
- Operating pressure 75 bar

Process Valves

Process solenoid valves are applied in different applications across diagnostic and measurement systems. One of the most extended applications is the radiation monitoring system where the valves are used as isolation safety shut off valves.

Solenoid valves have great advantage via function ,,normally closed" which means when the coil is de-energized valve is quickly closed and provides isolation. Most of the process solenoid valves are equipped with position indicators to provide feedback closed or open.These valves are produced in different versions and there is high flexibility in terms of end-connections.

IMI Precision Engineering operates four global centres of technical excellence and a sales and service network in 75 countries, as well as manufacturing capability in the USA, Germany, China, UK, Switzerland, Czech Republic, Mexico and Brazil.

For information on all IMI Precision Engineering companies visit **www.imi-precision.com**

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