

CASTEL 3032 CHANGEOVER VALVES WITH ORS CONNECTION FOR SAFER REFRIGERATION SYSTEMS



NEW
3032-ORS Series
CHANGEOVER VALVES
NO MORE NPT
CONNECTIONS: MOVE
TO O-RING SEAL

Castel Srl, a leading manufacturer of components for the refrigeration and air conditioning industry, continues to expand its product portfolio to meet the sector's evolving technological and regulatory needs.

The growing adoption of natural refrigerants in industrial and commercial refrigeration systems—particularly R744 (CO₂) and R290 (propane)—brings new technical challenges. R290, being a flammable gas, requires special attention not only during design but also throughout maintenance.

Relevant standards—such as ISO 24664 (“Refrigerating systems and heat pumps - Pressure relief devices and their associated piping — Methods for calculation”) - provide clear guidelines both for sizing safety valves and for their accessory components (changeover valves, inlet and outlet piping).

According to these standards, it is essential to ensure that the piping connected to the outlet of the safety valves is properly sized to avoid backpressure that could impair their operation. Furthermore, in systems using flammable refrigerants like R290, it is strongly recommended—and in some cases also mandated—that the safety valve outlets are routed to a safe area, away from the system and potential ignition sources.

This may involve metal ducts directed outside the technical room or toward controlled ventilation zones.

These requirements not only enhance the overall safety of the system but also impact the mechanical and logistical design of the installation, encouraging more integrated and easily inspectable solutions.

Castel 3032 Changeover Valves: Installation Efficiency and Long-Term Reliability

In light of the regulatory considerations associated with flammable refrigerants such as R290, it becomes strategic to focus on devices that enable safe maintenance and continuous system operation even during scheduled or extraordinary interventions. Among these, Castel's 3032 changeover valves for safety valves play a key role.

These three-way devices allow connection of two safety valves to a single system point, enabling switching between an active valve and a standby valve without depressurizing or shutting down the system. Their use permits safe and regulation-compliant replacement or testing of safety valves even on systems charged with refrigerant.

They are available in Castel's GoGreen line, dedicated to CO₂ (R744) systems, and in the Polyhedra line, designed for flammable refrigerants such as propane (R290).

Optimal Orientation: A Benefit for Manufacturers and Maintenance Technicians

A properly oriented changeover valve offers concrete advantages both in design and installation phases. A configuration developed with an OEM mindset can reduce assembly time and complexity, minimize the use of bends and extensions in piping, and optimize component accessibility for subsequent maintenance.

From a maintenance perspective, ergonomic and interference-free positioning facilitates quick access to components, reducing system downtime. This translates into direct economic benefits for end users and operational simplification for service teams.

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Correct orientation also reduces the risk of errors during switching operations: clearly visible and accessible operation levers contribute to the overall safety of the system.

ORS Connections: Technology Serving Tightness

When using flammable refrigerants, the quality of connections plays a decisive role in ensuring leak-tightness and preventing potentially dangerous leaks. Castel's 3032 changeover valves are available with ORS (O-Ring Seal) connections, which guarantee superior sealing compared to traditional tapered NPT fittings.

Widely used NPT connections require external sealants such as PTFE tape or anaerobic adhesives to ensure tightness but are more prone to assembly errors, leaks over time, and difficulties during disassembly.

ORS connections, on the other hand, provide greater tightening repeatability, are more tolerant of minor misalignments, and allow faster and safer maintenance—especially in systems where environmental safety is a priority.

Castel 3032 Changeover Valves with ORS Connection: At the Heart of System Strategy

Castel's 3032 changeover valves should not be regarded as mere accessories but as strategic components in the design of safe and efficient refrigeration systems. Their selection, correct orientation, and integration with advanced connections such as ORS represent a key technical lever to improve system performance, reduce operating costs, and increase long-term reliability.

A well-designed system, where accessibility and safety are central, sends a message of trustworthiness to the final customer. In this context, the Castel 3032 changeover valve with ORS connection becomes the core around which a valuable technical and commercial solution is built.