



NR Series Reservoirs

Easy-to-maintain reservoirs for liquid-lubricated dual mechanical seals

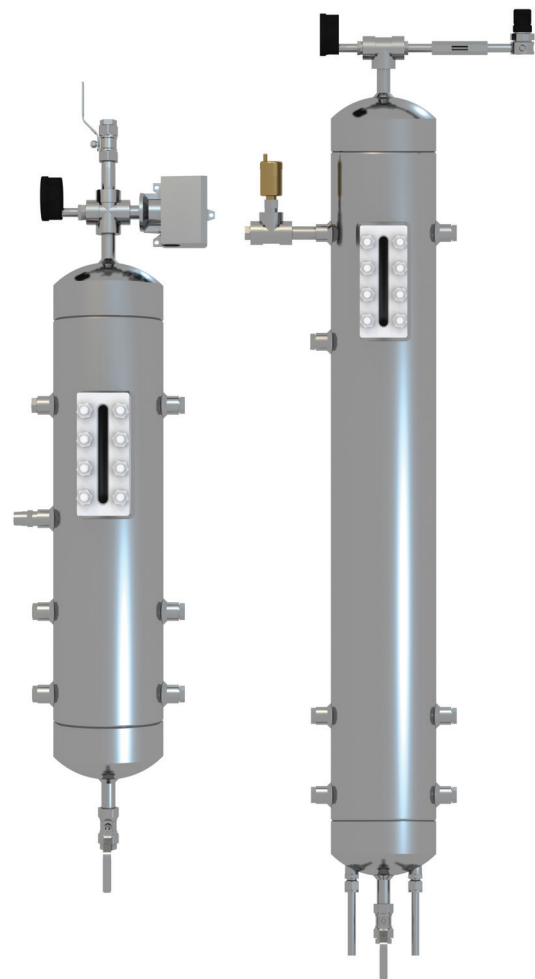
Enable optimum environments for dual mechanical seals for the highest reliability

Liquid-lubricated, dual mechanical seals require a continuous supply of clean, cool buffer or barrier fluid. Flowserve NR Series reservoirs are ideally suited for sustaining Plan 52 unpressurized and Plan 53A pressurized operations.

Available in many pre-engineered configurations or customizable to your requirements, these reservoirs are easy to install and maintain with water or other barrier/buffer fluids. NR Series reservoirs are specifically designed to meet the needs of a variety of industries, including chemical, food processing, pulp and paper, municipal water and wastewater applications.

Features and benefits

- Two convenient sizes, 7.6 L (2 gal) or 19 L (5 gal), are available for easy plant standardization.
- Robust weld pad level gauge is included for at-a-glance liquid level measurement.
- Water management system (optional) utilizes an air vent valve for easy automatic filling to the ideal liquid level from a plant water line and a visual flow indicator for easy identification of an inboard seal leak.
- Pressure indicator accurately displays barrier/buffer pressure in the reservoir.
- Optional cooling coils control the reservoir temperature by heating or cooling with water to maintain the optimum seal operating temperature.
- Optional pressure switch triggers an alarm if the reservoir pressure decreases on a Plan 53A system or increases on a Plan 52 system.
- Optional level switch monitors the barrier/buffer fluid level and activates a low- or high-level alarm, alerting the operator to adjust the fluid level.
- Optional stand securely supports the reservoir assembly.
- Reservoirs are designed in accordance with ASME VIII, Div 1 and PED.
- U-stamp, PED (2014/68/EU) Cat II, CRN, SELO, AS1210 are available.



Design parameters

| | |
|---------------------------|-----------------------------------|
| Reservoir material | 316 stainless steel |
| Reservoir pressure | Up to 34.5 bar (500 psi)* |
| Temperature | -29°C to 93.3°C (-20°F to 200°F)* |
| Volume | 7.6 L (2 gal) or 19 L (5 gal) |

*Limits vary by configuration; see BOM drawing for details.



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Standard and optional equipment

| Component | Plan 52 | Plan 53A | Plan 53A WM |
|---------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| MAWP | 10.3 bar (150 psi) @ 93.3°C (200°F) | 20.7 bar (300 psi) @ 93.3°C (200°F) | 10.0 bar (145 psi) @ 82.2°C (180°F) |
| Level indicator | Standard | Standard | Standard |
| Ball valve | Standard (2 valves) | Standard (2 valves) | Standard (1 valve) |
| Orifice | Standard | None | None |
| Pressure indicator | Optional | Optional | Optional |
| Pressure switch | Optional | Optional | Optional |
| Level switch | Optional | Optional | Optional |
| Cooling coil | Optional | Optional | Optional |
| Stand kit | Optional | Optional | Optional |
| Flow indicator | None | None | Standard |
| Pressure regulator | None | None | Standard |
| Air vent valve | None | None | Standard |

Model numbers

| | Model | Size | Piping Plan | Material of Construction | Cooling Coil | Pressure Gauge | Pressure Switch | Level Switch | Certifications | Stand |
|--|-----------|----------|-------------|--------------------------|--------------|----------------|-----------------|--------------|----------------|----------|
| Example: NR236Y12311 | NR | 2 | 3 | 6 | Y | 1 | 2 | 3 | 1 | 1 |
| NR | | | | | | | | | | |
| 2 or 5 (gal) | | | | | | | | | | |
| 0 (Bare), 2 (Plan 52), 3 (Plan 53 A), W (Water Management) | | | | | | | | | | |
| 6 (316) | | | | | | | | | | |
| Y (Yes), N (No) | | | | | | | | | | |
| 0 (None), 1 (0 to 60 psi), 2 (0 to 160 psi), 3 (0 to 300 psi) | | | | | | | | | | |
| 0 (None), 1 (Low), 2 (High) | | | | | | | | | | |
| 0 (None), 1 (Low), 2 (High), 3 (Both) | | | | | | | | | | |
| 0 (None), 1 (U-stamp), 2 (PED), 3 (CRN), 4 (SELO), 5 (Australia) | | | | | | | | | | |
| 0 (None), 1 (Yes) | | | | | | | | | | |

Piping plans and applications

| Piping plan | Description | Purpose | Application |
|-----------------|--|--|---|
| Plan 52 | Unpressurized buffer fluid circulation with an orifice in the vent line | Reduces process emissions by allowing the outboard seal to act as a safety back-up and directs emissions to vent for proper disposal | Critical process fluids in applications that require minimizing process leakage to the atmosphere and additional safety of a spare back-up seal |
| Plan 53A | Pressurized barrier fluid circulation set 1 to 2 bar (15 to 30 psi) above process pressure | Barrier fluid lubricates the mechanical seal faces, improving reliability and seal life while effectively isolating the process fluid for zero process emissions | Hazardous or dirty fluids, where leakage is not allowed or where process fluid affects the performance or life of the mechanical seal |

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