

# Over 35 New Products in this Catalogue

## Relief Cartridge Valves

Page 7: The **RDDA-3\*\*** (series 1) and **R DFA-3\*\*** (series 2) are non-adjustable direct-acting relief cartridges. They are normally closed, pressure-limiting valves used to protect hydraulic components from pressure transients. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling the flow to limit the pressure rise. These valves are smooth and quiet, with essentially zero leakage, dirt tolerant, immune to silting, and are very fast.

Page 8: The **RDDT-Q\*\*** (series 1) and **RDFT-Q\*\*** (series 2) are direct-acting relief cartridges. They are normally closed, pressure-limiting valves used to protect hydraulic components from pressure transients. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling the flow to limit the pressure rise. These valves are smooth and quiet, with essentially zero leakage, dirt tolerant, immune to silting, and are very fast. These CE marked valves are safety valves that meet the requirements of the European Directive for Pressurized Devices (PED) 97/23/EC.

Page 12: **RP\*S** are pilot-operated, balanced-poppet relief cartridges and are normally closed pressure regulating valves. When the pressure at the inlet (port 1) reaches the valve setting, the valve starts to open to tank (port 2), throttling flow to regulate the pressure. These valves are accurate, smooth, quiet, fast, and have low pressure rise vs. flow.

Page 11: The **RPET**, **RPGT**, **RPIT**, and **RPKT** are series 1, 2, 3, and 4 pilot operated soft relief valves which control the rate of pressure rise in a system as well as maximum pressure. These valves provide excellent pressure protection and reduced system shock.

Page 12: The **RQCB** is a series 0 kick-down, relief valve which works like a circuit breaker in an electrical system. When the pressure setting is reached, the valve kicks wide open, passing flow at low pressure. It stays open until flow to the valve stops.

Page 15: The **RBAN-X\*\*** is an electro-proportional, direct acting pilot relief valve which fits into the Sun T-8A cavity. This valve has an inverse operation, meaning the valve is at a maximum setting with no signal to the solenoid coil. The setting decreases as the signal increases.

Page 17: The **RP\*S-8\*\*** are seated-style, normally closed modulating valves with a T-8A cavity. When used with RBAP proportional relief fitted into this cavity, the RPES becomes a series 1 proportional relief with low main stage leakage.

Page 19: **RV\*S-\*\*\*** are vented, pilot operated, relief valves with a seated style main stage. When compared to a standard spool-type vented relief, this valve provides lower leakage, and faster response resulting in reduced overshoot and improved pressure control.

Page 20: The **RV\*T** is a vented, pilot operated, soft relief valve which controls the rate of pressure rise in a system as well as the maximum pressure. By providing a smoother, controlled pressure loading in the non-vented condition, this valve minimizes shock in systems.

## Sequence Cartridge Valves

Page 28: The **SQBB** is a series 0 kick-down sequence valve used to sequence a function in a system when pressure on the inlet reaches the valve setting. The valve goes wide open and stays open until flow to the valve stops.

## Reducing/Relieving Cartridge Valves

Page 42: The **PS\*T-\*\*\*** is a direct acting, pressure reducing/relieving valve mainstage piloted from port 4. This valve incorporates a damped construction for stable operation allowing the use of high reduced pressure.

## Counterbalance Cartridge Valves

Sun has added a number of fixed setting valves to its counterbalance line of products: **CBB\*-X\*\***, (Semi-restrictive, 40 L/min.), **CBA\*-X** (Restrictive, 10 L/min.), **CBB\*-X** (Restrictive, 20 L/min.) and **CBC\*-X** (Standard, 60 L/min.). Fixed-setting, 3-port, T-11A cavity, counterbalance valves with pilot assist function similar to the adjustable versions except the fixed setting is pre-set to a nominal value. These fixed-setting valves are meant to control an overrunning load. The check valve allows free flow from the directional valve (port 2) to the load (port 1), while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio. **See page 72. Also review these products at [www.sunhydraulics.com](http://www.sunhydraulics.com). Products: Counterbalance: Click View All Counterbalance Valves.**

## Load Control: Load Reactive Cartridge Valves

Page 64: **MB\*A-L\*\*** (3:1 pilot ratio), **MB\*B-L\*\*** (1.5:1 pilot ratio), **MB\*G-L\*\*** (4.5:1 pilot ratio) are load reactive, non-vented load control valves. This valve is functionally a 3 port counterbalance valve. It seats as a poppet valve and modulates as a spool valve.

Page 65: **MB\*A-X\*\*** (3:1 pilot ratio), **MB\*B-X\*\*** (1.5:1 pilot ratio), **MB\*G-X\*\*** (4.5:1 pilot ratio) are load reactive, non-vented, fixed setting, load control valves. This valve is functionally a 3 port counterbalance valve. It seats as a poppet valve and modulates as a spool valve.

Page 66: **MW\*A-L\*\*** (3:1 pilot ratio), **MW\*B-L\*\*** (1.5:1 pilot ratio), **MW\*G-L\*\*** (4.5:1 pilot ratio) are load reactive, vented, load control valves. This valve is functionally a 4 port counterbalance valve. It seats as a poppet valve and modulates as a spool valve.

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## Load Control: Load Reactive Cartridge Valves (Continued)

Page 67: **MW\*A-X\*\*** (3:1 pilot ratio), **MW\*B-X\*\*** (1.5:1 pilot ratio), **MW\*G-X\*\*** (4.5:1 pilot ratio) are load reactive, vented, load control valves. This valve is functionally a 4 port counterbalance valve. It seats as a poppet valve and modulates as a spool valve.

## Load Control: Balanced Cartridge Valves

Page 70: The **MB\*M-X\*\*** is a balanced, non-vented, non-relieving load control valve. This valve displays characteristics of a pressure compensating flow control valve. Performance is best in the meter-out mode with port 1 being the load and port 2 being tank.

Page 71: The **MW\*M-X\*\*** is a vented, balanced non-relieving, load control valves that combines a balanced modulating element with a reverse flow check. This valve displays characteristics of a pressure compensating flow control valve. Performance is best in the meter-out mode with port 1 being the load and port 2 being tank.

## Check Cartridge Valves

Page 74: **CXAA-XB\*** is a free flow, nose-to-side, check valve which fits into T-8A cavity.

## Logic Element Cartridge Valves

Page 110: **LO\*C-ZD\*** is a balanced poppet, pilot-to-close, spring biased closed, logic element with position indicating switch.

Page 111: **LO\*O-ZD\*** is a balanced poppet, pilot-to-close, spring biased open, logic element with position indicating switch.

Page 116: The **LH\*A-X\*\*** is a bypass/restrictive, priority modulating element.

## Solenoid Operated Cartridge Valves

Page 132: The **DTDA-S\*\*** is a 2-position, 2-way direct operating poppet-type directional solenoid valve with soft shift armature.

Page 133: The **DAAL-S\*\*** is a 2-position, 2-way, spool-type pilot solenoid valve with soft shift armature.

Page 134: The **DLDA-S\*\*** is a 2-position, 2-way spool-type directional solenoid valve with soft shift armature.

Page 135: The **DWDA-X\*\*** is a 2-position, 3-way poppet-type directional solenoid valve.

Page 136: The **DBAL-S\*\*** is a 2-position, 3-way, spool-type pilot solenoid valve with soft shift armature.

Page 137: The **DMDA-S\*\*** is a 2-position, 3-way spool-type directional solenoid valve with soft shift armature.

Page 138: The **DNDA-S\*\*** is a 2-position, 4-way spool-type directional solenoid valve with soft shift armature.

Page 139: The **DNDC-X\*\*** is a direct acting, solenoid-operated, 4-way, 3-position spool valve that is spring centred to the neutral position.

## Pilot Control Cartridge Valves

Page 146: **DAAL-X\*\*** is a 2-way, solenoid operated, directional spool-type, pilot valve.

Page 146: **DAAL-S\*\*** is a 2-position, 2-way, spool-type pilot solenoid valve with soft shift armature.

Page 150: The **DBAL-X\*\*** is a 3-way, 2-position, solenoid operated, directional spool-type, pilot valve.

Page 150: **DBAL-S\*\*** is a 3-way, 2-position, solenoid operated, directional spool-type pilot valve with soft shift armature.

## Corrosion Resistant Cartridge Valves

Sun is continually adding to its line of corrosion resistant valves. These valve have stainless steel and titanium external components with heat treated internal components in carbon and alloy steels. These valves are recommended for marine, oil and gas industries and for use in stationary aero-drives. All external components are qualified by a 1,000 hour salt spray test to ASTM B117-03. In all cases, the internal working components remain the same as the standard Sun valve. Where the cartridge product is offered in corrosion resistant materials, you will see a note in the bottom right corner of the page. Visit [www.sunhydraulics.com](http://www.sunhydraulics.com) for complete information on our Corrosion Resistant Cartridges. Products: Cartridges: Corrosion Resistant: View All Corrosion Resistant Cartridges for complete information about these cartridges.

## Weatherized Coils and Weatherized Coil Kits

Page 190, 191: Sun's new weatherized coils and kits are designed for Sun's full flow solenoid operated and electro-proportional cartridge valves. They are protection against high-pressure wash-downs or marine environments for Sun's electrically-actuated cartridge valves. These coil kits are only available with the Metri-Pack Series 150-2M connector with a choice of four voltages.

A weatherization kit is required in conjunction with a weatherized coil and a modified cavity (consult the Sun website to view cavity modification instructions for the use of each kit). The coil is not included in the kits and must be purchased separately. Weatherization kits are cartridge model code and cavity dependant. **These kits are intended for new installations only and are not suitable for retrofitting existing equipment or for standard Sun bodies.**

Consult [www.sunhydraulics.com](http://www.sunhydraulics.com) for complete details on weatherized coils and weatherized coil kits. Go to Products: Cartridges: Coils: View All Coils: Weatherized Coils. View individual Weatherized Coil Seal Kit page for detailed installation instructions.