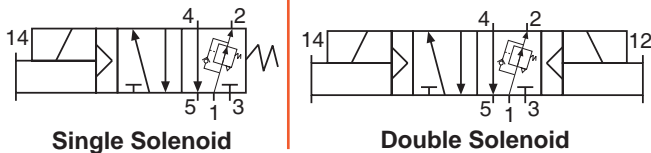


# New Product Information

## ENERGYSAVER® Valve 5/2 Single and Double

### Solenoid Pilot Valves for ISO 5599/I

Reduce compressed  
air usage up to 30%



Single Solenoid

Double Solenoid

#### 5/2 Single Solenoid Models

ISO Size*	Model Number	Average C <sub>v</sub>	Weight kg
1	W6076A2957	0.8	0.7
2	W6076A3957	1.9	1
3	W6076A4957	3.8	0.9

#### 5/2 Double Solenoid Models

ISO Size*	Model Number	Average C <sub>v</sub>	Weight kg
1	W6076A2961	0.8	1.6
2	W6076A3961	1.9	1.2
3	W6076A4961	3.8	1.6

\* Bases and manifolds not included, please order separately.

#### Dimensions mm

Model Number	Length	Width	Height**
W6076A2957	141	42	112
W6076A3957	162	53	90
W6076A4957	183	65	127
W6076A2961	173	42	117
W6076A3961	195	53	90
W6076A4961	214	65	132

\*\* Height of valve with electrical connector installed. Connectors sold separately.

#### STANDARD SPECIFICATIONS

**Solenoid:** Rated for continuous duty.

**Standard Voltages:** 100 – 110 volts 50 Hz;  
100 – 120 volts 60 Hz; 200 – 240 volts 50/60 Hz;  
24, 110 volts DC.

**Power Consumption:** 8.5 VA inrush, 6 VA holding  
on 50 or 60 Hz; 6 watts on DC.

**Ambient Temperature:** 4 to 50° C.

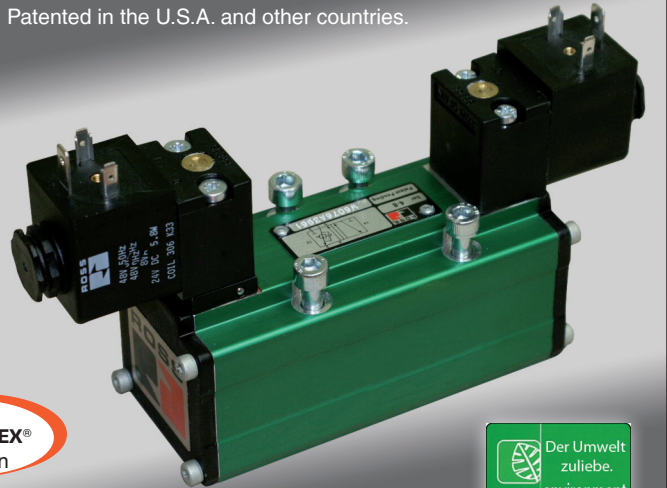
**Media Temperature:** 4 to 80° C.

**Flow Media:** Compressed air, filtered (5 micron).

**Inlet Pressure:** 4 to 8 bar.

**Manual Override:** Non-locking (standard).

Patented in the U.S.A. and other countries.



A  
ROSS/FLEX®  
Solution

ENERGYSAVER® Valve  
(Double Solenoid Model Shown)



Traditionally, standard valves apply the same pressure for extending **and** retracting double acting cylinders. However, this new ROSS **ENERGYSAVER®** valve revolutionizes the way cylinders are controlled, by reducing the cylinder retract pressure.

The Series W60 **ENERGYSAVER®** valve is a 5-port, 2-position, sub-base mounted valve that supplies full line pressure to port 4 and reduced pressure 2 bar to port 2. This provides full cylinder force to move the load, but returns the cylinder with less pressure thus reducing your compressed air consumption by up to 30%. Although reduced, the pressure in port 2 is enough for quick return of the cylinder. The energy saving function is accomplished by action of the spool and works as quickly as a pressure regulator.

#### ADVANTAGES:

- Reduces compressed air consumption up to 30%.
- Replaces conventional ISO 5599/I valves without any adaptation.
- Spool & sleeve construction for long valve life.
- Leakage in cylinder and fittings reduced due to low applied pressure.
- Noise reduction.
- Extends life of cylinders and other equipment.



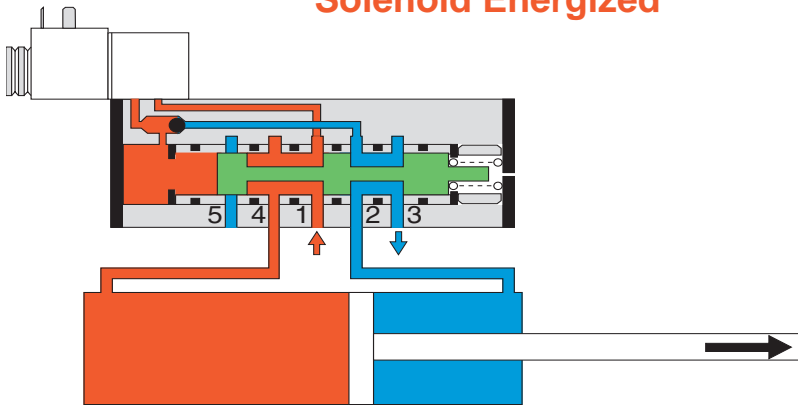
ROSS EUROPA GmbH

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# FUNCTIONAL DESCRIPTION

## Solenoid Energized



**NOTE:** This functional description is specific to the single solenoid **ENERGYSAVER**® valve. The double solenoid models operate similarly, but as a double solenoid type valve. If you have specific questions about the operation of the double or single solenoid **ENERGYSAVER**® valves, please contact ROSS (see contact information below) for more information.

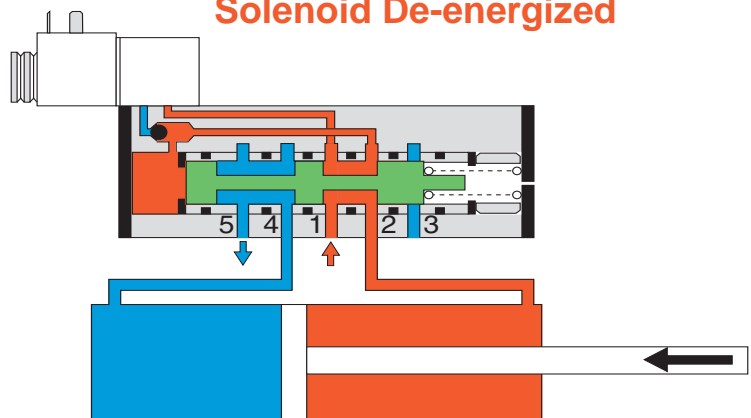
When the solenoid is energized, the **ENERGYSAVER**® valve operates as a standard valve. Supply pressure is directed from the inlet port to port 4 extending the cylinder at full pressure and force. Air in the rod end of the cylinder is exhausted via port 3.

Upon de-energizing the solenoid, the pilot valve starts to exhaust the pilot signal from the end of the spool. Momentarily, the spool shifts back to a "normal" de-energized position directing inlet air to flow to the rod end of the cylinder (port 2 of the valve) and exhausting the cap end.

The shuttle now has higher pressure on the opposite side causing it to shift. Shifting the shuttle closes the connection from the spool to the pilot exhaust and opens the cavity at the end of the spool to feedback pressure from port 2.

Meanwhile the cylinder has begun to retract.

## Solenoid De-energized

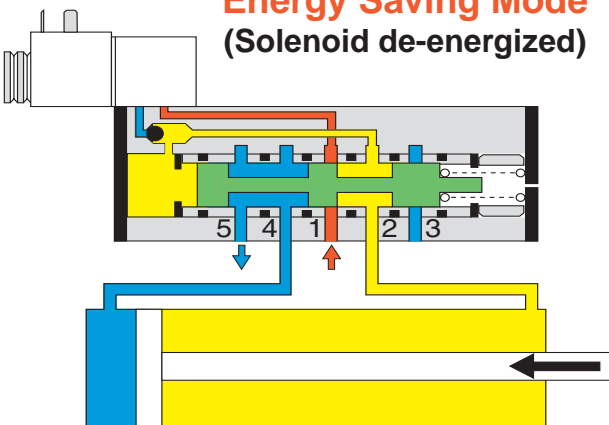


Because the actuating end of the spool now has high pressure applied, the spool starts to shift to the right again closing off the inlet port. Closing the inlet prohibits the air supply from maintaining pressure on the rod end of the cylinder and as the cylinder continues to retract, the pressure drops.

This pressure drop reduces the amount of force available to keep the spool actuated against the valve return spring. So, the spool starts to shift back thus allowing an influx of pressure to help retract the cylinder.

The **ENERGYSAVER**® valve operates as a fixed spring regulator when in the energy saving mode, maintaining the cylinder return pressure at approximately 2 bar. Retracting and holding the cylinder with only 2 bar pressure consumes much less air than the standard method of using full pressure to shift and retract.

## Energy Saving Mode (Solenoid de-energized)



**APPLICATION WARNING:** When inlet pressure is 3 bar or less, the double and single solenoid **ENERGYSAVER**® valves will pressurize port 2 and exhaust port 4, regardless of applied solenoid signals. This feature, which occurs when inlet pressure is below 3 bar, must be taken into consideration in your application design in order to avoid the potential for personal injury or property damage.



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**WARRANTY and CAUTIONS**  
Standard ROSS warranty and cautions apply,  
details available upon request.

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