

# Pursuing the Perfect Counterbalance Valve

## New LoadAdaptive™ valves:

The stability you need, the efficiency you want

Sun Hydraulics continues its pursuit of the perfect counterbalance valve, introducing our next-generation cartridge family that offers an average energy savings of 30% over standard counterbalance valves and offers stability across many applications. Yes, energy savings AND stability.

These new patent-pending LoadAdaptive™ counterbalance valves – an evolution of and direct replacement for Sun’s industry-proven CB series of valves – are multi pilot-ratio valves that provide improved stability and highly efficient operation. By adapting to operating conditions – providing high pilot ratios for efficiency when possible and low pilot ratio and low flow gain for stability when

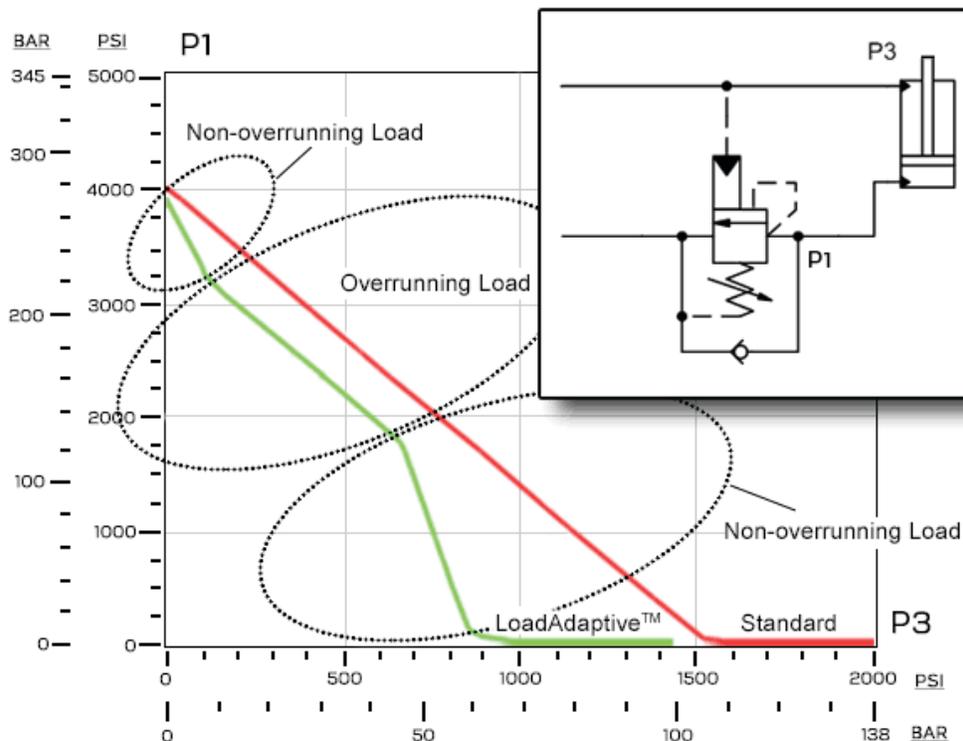
required – this new family offers the best solution for many load-holding applications.

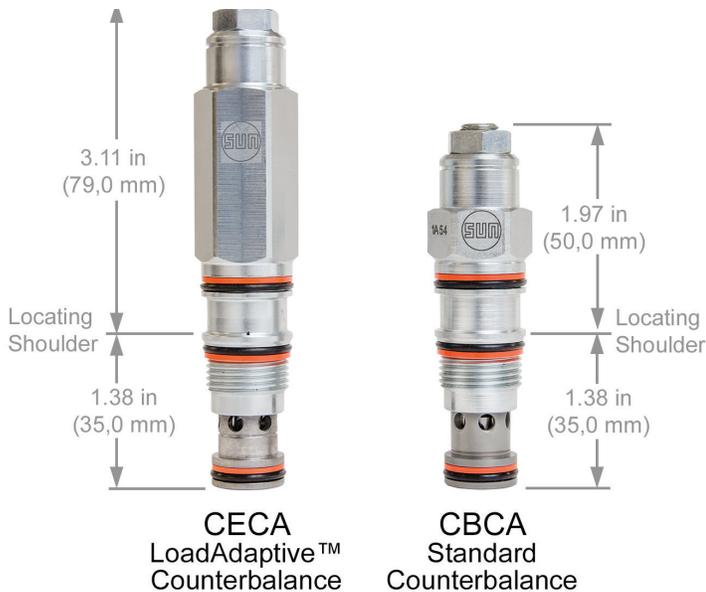
And it works like this (see the graph below):

As pilot pressure (P3) increases, the effective setting (P1) decreases, as with our standard CBCA counterbalance valve (the red curve). With the new LoadAdaptive CECA valve (the green curve), however, the valve requires less pressure to drive a motor or cylinder.

With a 4000-psi (280-bar) setting, pilot pressure required to take the effective setting to 0 psi (0 bar) is reduced from 1500 to 900 psi (105 to 60 bar). And where you have an overrunning load, the pilot

Highlight





## Models Available Now

- **CECA** - 15 gpm (60 L/min), standard capacity, 3:1 pilot ratio
- **CEBA** - 10 gpm (40 L/min), semi-restrictive capacity, 3:1 pilot ratio
- **CEBC** - 5 gpm (20 L/min), restrictive capacity, 3:1 pilot ratio

A series of 1.5:1 pilot ratio LoadAdaptive counterbalance valves will be available soon.

ratios are the same for our LoadAdaptive and our standard counterbalance valves, ensuring stability.

Using the three different pilot ratios across the operating range creates the performance you need, delivering the highest possible pilot ratio and flow gain while maintaining stability. The LoadAdaptive counterbalance valve can replace a standard CB series counterbalance valve wherever energy savings are important.

What this means is you can improve either efficiency or stability without having to trade one for the other. You can now use a new LoadAdaptive valve in systems with cylinders that require lower pilot-ratio counterbalance valves for stability, effectively reducing cylinder pressure by about 20% before the valve begins to control the cylinder movement. Or you can replace a higher pilot-ratio counterbalance valve with a 3:1 LoadAdaptive valve for more stability and not sacrifice efficiency.

And compared with standard counterbalance valves, you can realize a range of system benefits:

- Run actuators faster under no-load conditions
- Increase battery life
- Reduce heat generation
- Use smaller prime movers in your system

In the pursuit of the perfect counterbalance valve, Sun continues to innovate, introducing new load-holding solutions for the hydraulics industry while providing the quality, reliability and quick delivery you expect from Sun Hydraulics. The LoadAdaptive family continues to expand our broad, industry-leading selection of counterbalance valves, ensuring that when you need a high-reliability load-holding solution, we have the best match for your application.

For an overview of all Sun's counterbalance valve families, read our "Guide to Sun's Counterbalance Families."

Contact your local distributor to place your order.

