



HYDRAFORCE

POWER FORWARD

Pressure Balanced™ Boom Suspension

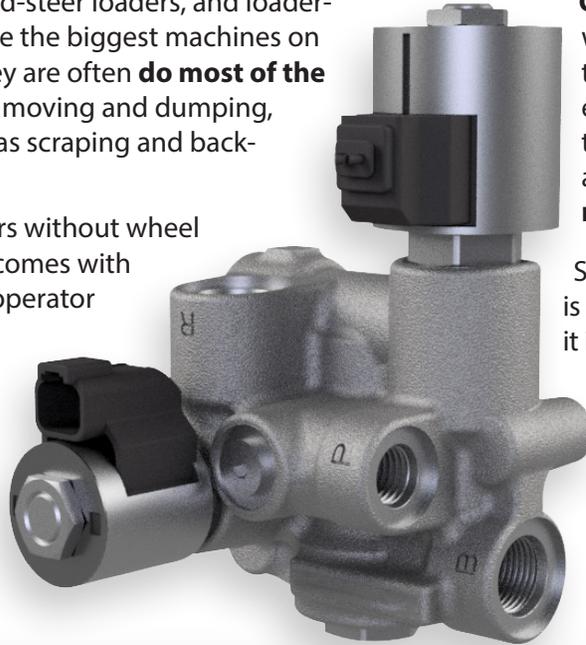


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RIDE CONTROL IS NO LONGER OPTIONAL

Compact wheel loaders, skid-steer loaders, and loader-equipped tractors may not be the biggest machines on the construction site, but they are often **do most of the work**, from scooping, lifting, moving and dumping, to minor grading tasks such as scraping and back-dragging.

For small and mid-size loaders without wheel suspension, the **rough ride** comes with the territory. We rely on the operator to **adjust working habits to accommodate machine performance**. This means working more slowly and deliberately, limiting tight turns, extending braking distances, and avoiding difficult terrain. **This is a drag on productivity.**



Cushioning the movement of the boom while traveling over difficult terrain is key to **load stability** and **vehicle safety**. An effective **boom suspension** system can act to prevent loss and shifting of the load, and a vehicle with a controlled load is **easier to maneuver** and **safer to operate**.

So in today's machines, boom suspension is not just a matter of operator comfort, it is critical to working quickly and efficiently. Loaders equipped with boom suspension **perform tasks faster** and operators can **focus more on moving material** instead of spilling it.



Keep the Load
In the bucket with
Pressure-balanced™ Boom
Suspension

BALANCE IS KEY

The HydraForce pressure-balanced boom suspension system offers a **more responsive control** for compact loaders. At the heart of the system is the **patent-pending PB08-E40** pressure-balanced **accumulator charging** valve. What makes this system **perform better** is the ability to **charge the accumulator without borrowing oil** from the boom cylinder. This means the **boom doesn't drop** during travel, or **jerk suddenly** when the system is activated, and **no mushy performance** when digging into a pile of material. It simply **performs the way the operator expects**.



ADAPTS TO YOUR VEHICLE

The available proving manifold includes solenoid enable valves to allow **deactivation for grading tasks**. It can be **plumbed directly** into the boom circuit for testing. At production time, the optimized circuit can be **integrated into the vehicle hydraulic system**, or the components can be placed in a **custom manifold** and **remotely mounted**.

Orifices in the proving manifold can be changed to tune the following performance characteristics:

- Accumulator charge/discharge rate
- Pilot circuit damping
- Cylinder rod-end metering

MAKE PERFORMANCE STANDARD EQUIPMENT ON YOUR VEHICLE

The HydraForce pressure-balanced boom suspension system offers operators a **better overall experience** because it **performs reliably** under **all operating conditions**. It offers a more **responsive load-balanced control** that is able to maintain accumulator charge even when the system is disengaged. Even **skid-steer and compact loaders** can employ an **economical suspension system** that competes with larger machines. This **flexible all-cartridge solution** can be mounted close to the boom or integrated into a complete vehicle hydraulic system manifold. Operators are able to **work more quickly and efficiently** because vehicle stability is greatly improved. **Safer and more efficient machines get the job done faster**.



Features

- Pressure-balanced accumulator charging
- Load does not move when system is activated
- Leakdown protection
- Charges using pump flow / discharges to reservoir
- Two solenoid enable valves
- Quick system tuning



PERFORMANCE IS PROVEN

HydraForce engineers developed this system to fit a **broad range** of vehicles and boom configurations. During development, HydraForce was able to see **marked performance improvement in load balancing and leakdown protection** over existing systems. The ability to observe and document actual **machine performance** in our **Innovation and Technology Center** gives HydraForce a distinct advantage in developing components and systems that **solve real world problems**.

Advantages of using a pressure-balanced boom suspension:

- Keep the load in the bucket
- Increase operator comfort
- Increase working efficiency
- Reduce wear on vehicle components
- Increase travel speeds
- Decrease braking distances
- Adapt easily to any system
- Standardized hardware available for proving

Operate with confidence
Smooth and Safe
Fast and efficient

WHY CONSIDER HYDRAFORCE?



SYSTEM EXPERTISE

- World's largest privately owned cartridge valve manufacturer focused on EH system controls
- Broadest range of cartridge valves
- Designed EH systems for mobile equipment in every industry



SIMPLIFIED PACKAGING

- All manifolds are end-of-line function tested
- Use of Lean and Six Sigma practices
- Five year warranty on valves and manifolds



REPUTATION FOR QUALITY



SUPPORT FROM PROTOTYPE TO PRODUCTION

- Free design support
- Simulation software
- Fast prototypes

- Integrate sensors, fittings, ancillary valves, and other custom components into a single manifold
- Simplified circuit design
- Consolidated or distributed hydraulic systems



RoHS COMPLIANT HydraForce valve and manifold products comply with the European Council and Parliament RoHS directive 2002/95/EC limiting the use of hazardous substances. For all other products, consult factory.