

DONALD ENGINEERING



HYDRAULIC SYSTEMS CAPABILITIES

Engineered. Built. Tested. Supported.

de
Partnership Driven Solutions



Why Donald Engineering?



For more than 60 years, Donald Engineering has helped OEMs and manufacturers solve complex hydraulic challenges through engineering expertise, in-house manufacturing, and world-class vendor partnerships.

From concept and circuit design through manufacturing, testing, startup, and long-term support, our team acts as an extension of your engineering department. Donald Engineering delivers complete hydraulic solutions.



Fluid Power Expertise

- Hydraulic specialists since 1963
- Decades of application experience
- Engineering-driven approach
- Solutions built around machine performance



In-House Capabilities

- Designed, assembled, and tested in the USA
- Dedicated hydraulic engineering team
- Custom manufacturing capabilities
- Complete documentation packages



Long-Term Support

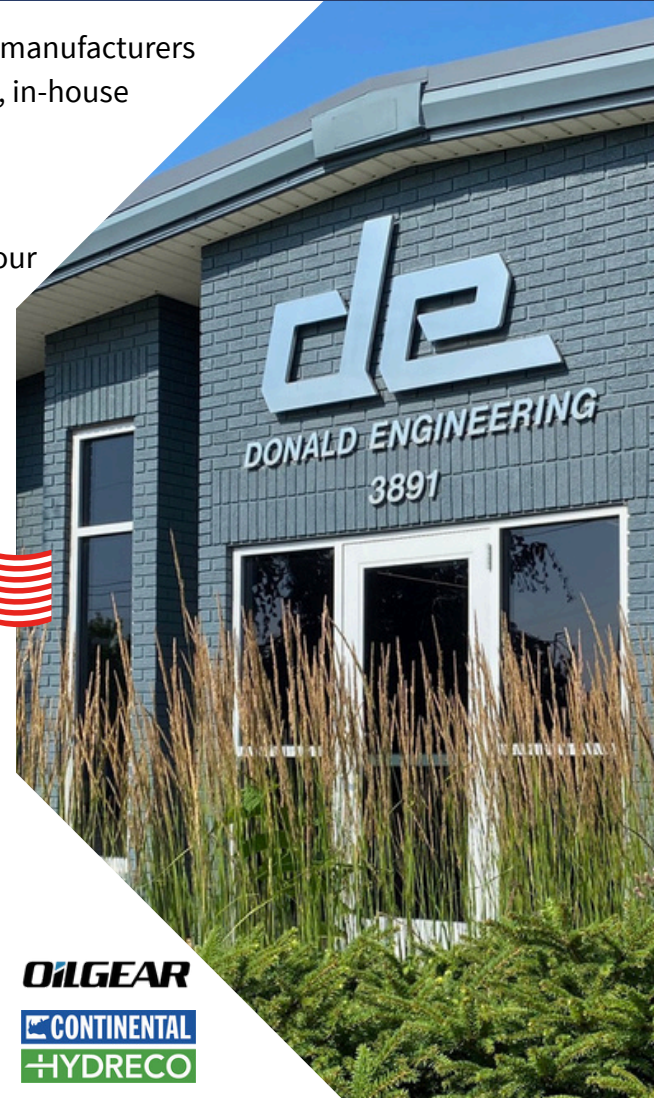
- Global support, local service
- 18-month/36-month Continental Hydraulics component warranty
- Ongoing technical support



Proven Vendor Partnerships

- Authorized Continental Hydraulics distributor
- Authorized Oilgear distributor
- Factory engineering support
- Genuine components only

OILGEAR



Working with Donald Engineering: What to Expect

Power units are more than just flow and pressure. Donald Engineering is here to be your consultants. The right solution starts with asking the right questions.

Performance Requirements

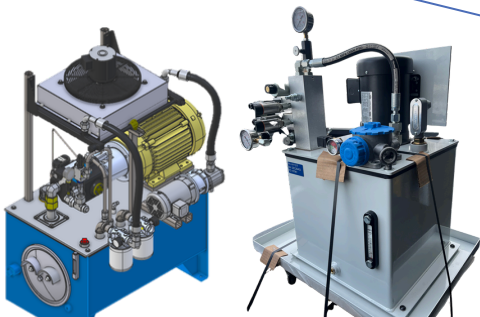
Cycle time?
Motion speed?
Volume to fill?
Sequencing of actuators?

Application Requirements

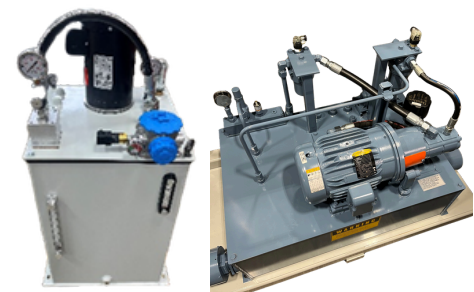
Pressing, clamping, cutting, positioning?
Continuous work or stall time?
Cylinder, motor, or tooling?
Positioning needs?

Safety Requirements

E-stop behavior? Accumulators?
CAT/PL defined by Risk Assessment?
Safe load holding?
Maintenance requirements?



YOUR CUSTOM POWER UNIT





Variety of Options to Meet Any Application



Power Units	Low Profile	Vertical	NFPA/JIC	L-Shaped	Custom
Size	10 to 30 gallons	3 to 100 gallons	10 to 210 gallons	10 to 210 gallons	5 to 5,000 gallons
Max	Up to 5,000 PSI	Up to 5,000 PSI	Up to 5,000 PSI	Up to 5,000 PSI	Up to 5,000 PSI
Flow Rate	.5-12 GPM	.5-35 GPM	1-75 GPM	1-75 GPM	Up to 500 GPM
Power	1-20 HP	.5-30 HP	1-125 HP	1-125 HP	.5-300 HP



Vertical Power Units

Power/Compact/Quiet Package



Vertical-oriented power units with a small footprint. The pump and motor are mounted vertically in the reservoir and submerged. This makes the pump quiet and provides positive inlet or flooded suction for long pump life.

Economical, easy-to-configure, and stocked components allow for fast delivery.

Can be configured with gear pumps, vane pumps, and piston pumps.

Key Features

- Vertical style tank, sizes 3 to 100 gallons for reduced footprint
- Motor sizes: 1/2 to 30HP 460/60/3. Single phase up to 3HP
- Submerged in oil for longer-lasting and quieter performance
- Integrated manifold options
- Pressure/flow adjustments through the reservoir wall
- In-tank and in-line filters available
- Case drain and return line heat exchangers
- Removable lid for easy maintenance

Supporting Technologies

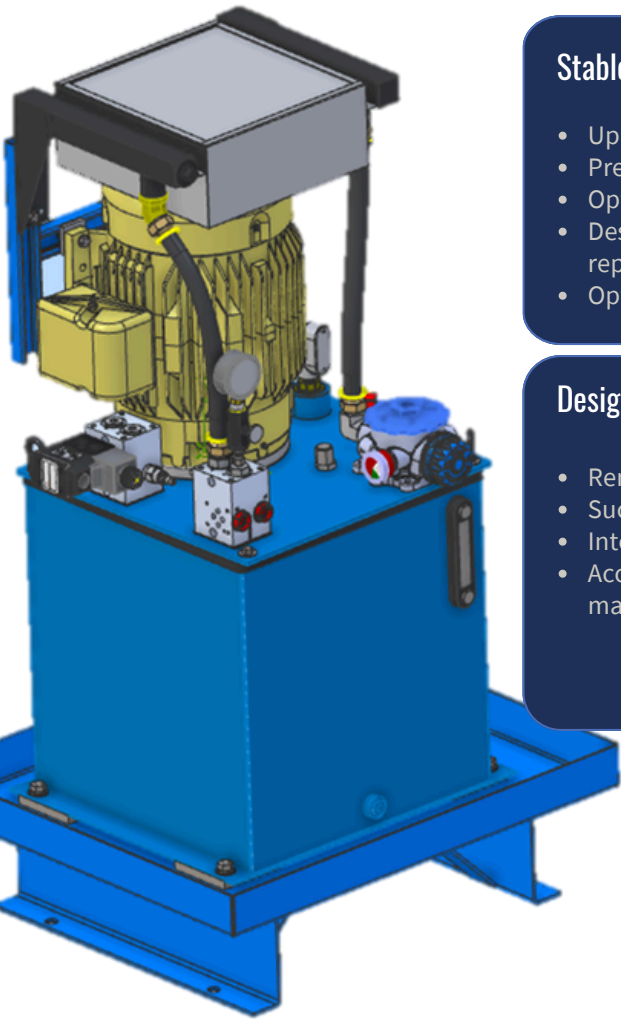
- Variable frequency drives
- Closed-loop pressure control
- Delta Motion controllers
- Remote valve assemblies
- Custom manifolds
- IO-Link monitoring
- Predictive maintenance integration



Stocked Power Units



Donald Engineering vertical HPUs combine proven Continental Hydraulics platforms with custom engineering, diagnostics, and integration support to deliver more than hydraulic power, they deliver machine performance.



Stable Hydraulic Performance

- Up to 5,000 PSI operating pressure
- Pressure-compensated piston pump
- Optional air/oil cooling
- Designed for consistent pressure and repeatable machine performance
- Optional integrated kidney loop

Integrated Monitoring & Protection

- Liquid-filled pressure gauges
- Electric and visual contamination indicators
- Pressure monitoring options
- Fluid level and temperature monitoring

Designed For Serviceability

- Removable top plate for easy access
- Suction filtration sized for system flow
- Integrated return-line filtration
- Accessible component layout for maintenance

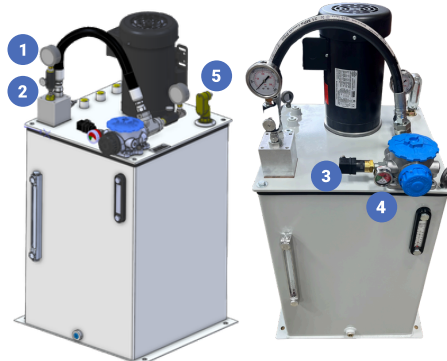
OEM-Ready Integration

- Multiple valve and port configurations
- Optional motor starters and electrical packages
- Custom labels, connectors, and I/O options
- Component stocking agreements for common configurations to reduce lead times.
- Custom Paint available to match machine frame

Featured Standard Platform

20/30 Gallon Vertical HPU

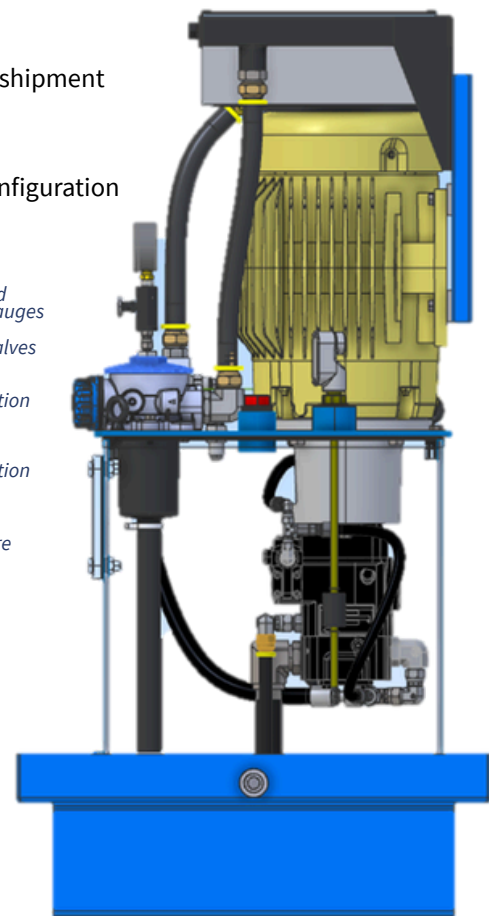
- Fully assembled and tested before shipment
- Continental Hydraulics fabrication
- Oilgear world-class pumps
- Donald Engineering assembly & configuration



1. Liquid-filled pressure gauges
2. Isolation valves
3. Electric contamination indicator
4. Visual contamination indicator
5. Level & temperature monitoring



Washdown option available for food industry or other applications



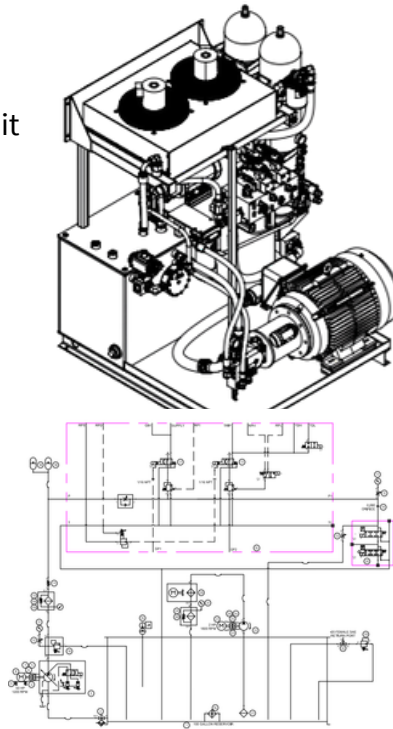


Hydraulic Valve Test System Example:

Custom hydraulic power unit and manifold circuit engineered by Donald Engineering for hydraulic valve testing applications.

System Highlights

- 25–5,000 PSI adjustable pressure
- Up to 50 GPM flow capacity
- Oilgear PVG piston pump
- Safe accumulator discharge via Continental Hydraulics block and bleed assembly
- Customer-specified paint finish
- Hydraulic valve performance and functionality testing.

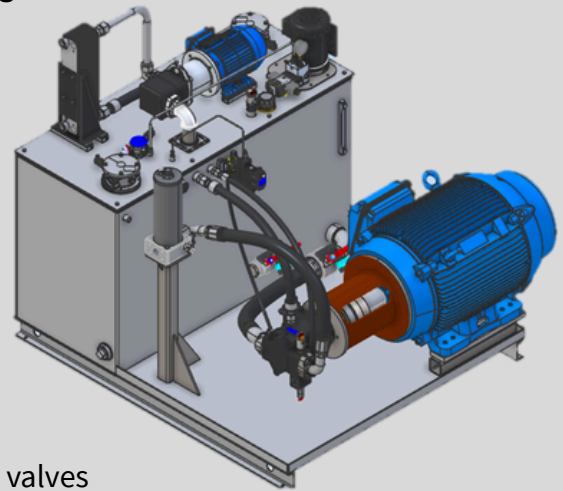


Rollform High Speed Cutoff HPU

Custom engineered for a high-speed rollform cutoff application.

System Highlights

- 200-Gallon Reservoir
- 125 HP Motor
- 54 GPM Piston Pump
- Triple-Pressure Circuit
- Kidney-Loop Filtration
- Remote accumulator stand
- Dual monitored block and bleed valves

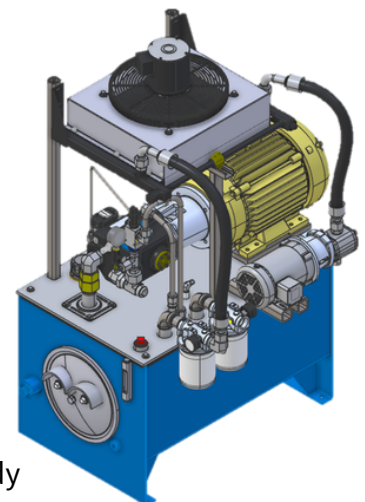


Custom Hydraulic Power Unit

Designed for reliable operation and easy maintenance, this custom 50-gallon hydraulic system combines integrated cooling, filtration, and monitoring in a compact, service-friendly package.

System Highlights

- 50-Gallon Reservoir
- 20 GPM Piston Pump
- 25 HP Motor 230/460/60/3
- Kidney-Loop Filtration & Cooling
- Air/Oil Cooler with Thermostatic Fans
- Filter with Dirt Indicator
- Protected Sensor Locations
- Removable Top Cover
- JIC Standard Reservoir Design
- Expansion & Future Upgrade Ready



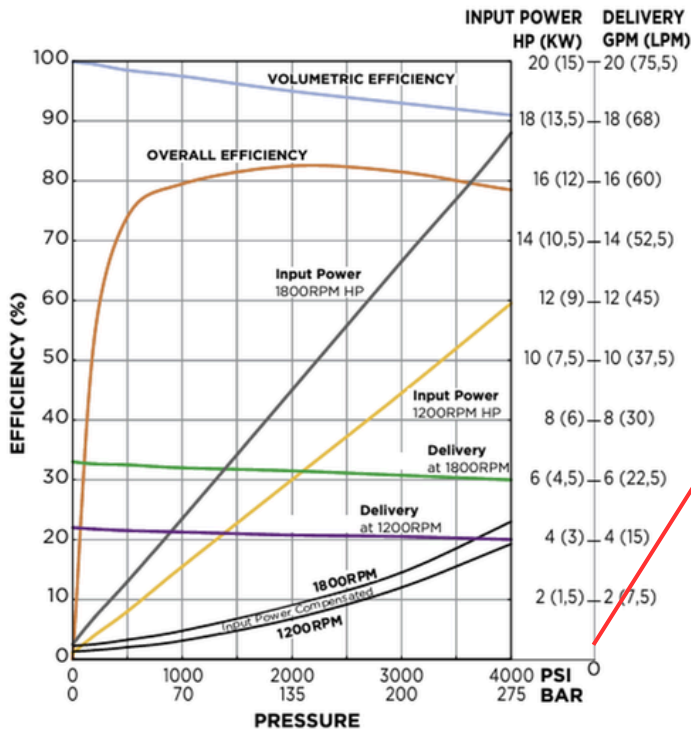


Reduce Energy Consumption Without Sacrificing Reliability

Many hydraulic systems reduce horsepower demand by unloading the pump when full pressure isn't required. Done incorrectly, this can shorten pump life and create long-term reliability issues.

Donald Engineering designs multi-pressure systems that reduce power consumption while maintaining proper pump lubrication and system readiness.

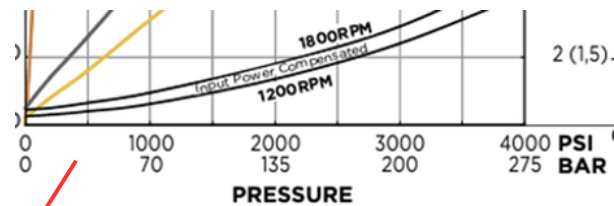
PERFORMANCE DATA



Why dual pressure?

Example:

- System pressure is 2000 PSI
- Standby pressure is 270 PSI



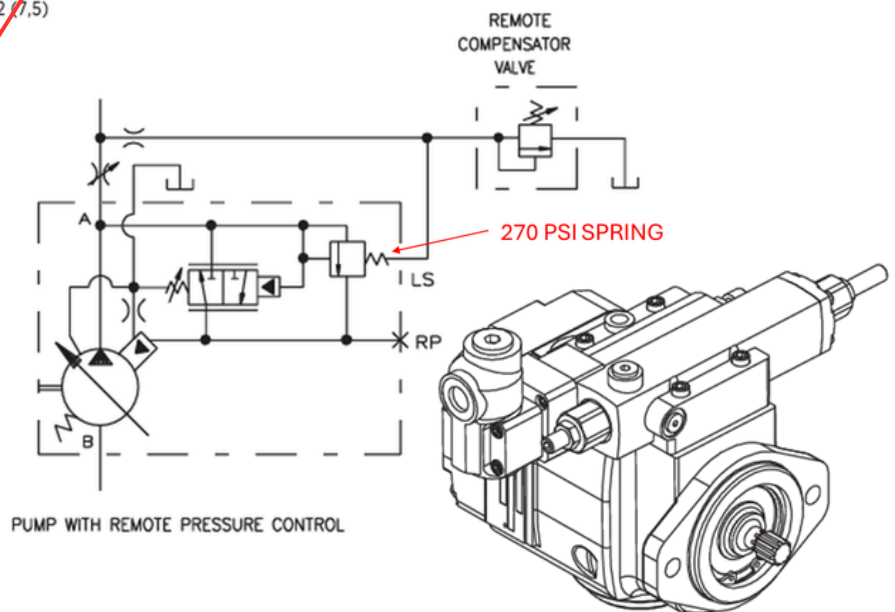
Horsepower draw at 2000 PSI compensated: 1.9 HP

Horsepower draw at 250 PSI compensated: 0.3 HP

The tank itself can dissipate close to 0.3 HP!!

By bypassing the remote relief and run the sensing line to the tank, the pump will automatically idle at 270 PSI.

This is critical for internal lubrication and reduced heat generation.



Engineered For Long-Term Performance

Our hydraulic systems are designed around the complete application, balancing pressure requirements, energy consumption, thermal management, and component longevity to maximize machine performance and service life.



Beyond The Power Unit

A hydraulic power unit is only one piece of the system. Donald Engineering designs and integrates the hydraulic components that connect motion, control, safety, and machine performance into a complete solution.

Complete Hydraulic Integration Capabilities



Custom Manifolds

Designed to reduce leak points, simplify plumbing, and improve serviceability while packaging hydraulic control into a compact footprint.

Remote Valve Assemblies

Valve systems engineered and mounted where the machine needs them, reducing hose runs and improving response times.

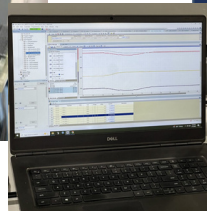
Custom Cylinders

Application-specific cylinders designed around load requirements, stroke lengths, mounting constraints, and environmental conditions.

Closed-Loop Motion Control

Precise positioning and motion control using Delta Motion technology for applications requiring accuracy, synchronization, and repeatability.

CONTINENTAL
HYDRECO



milwaukee
Cylinder

DELTA
MOTION

PROJECT SPOTLIGHT

Modernizing A 40-Year-Old Extrusion System

Customer Challenge

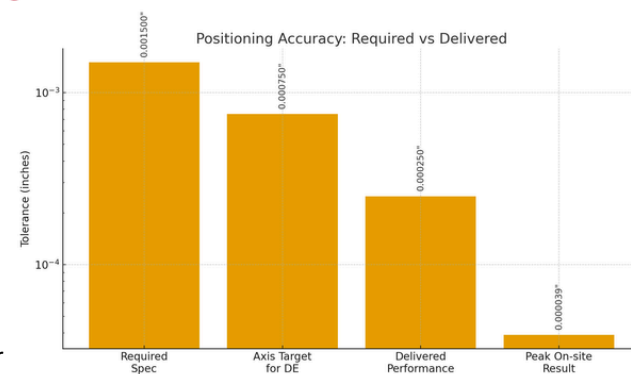
A legacy extrusion machine was struggling with inconsistent performance, aging hydraulic controls, and limited process visibility.

Donald Engineering Solution

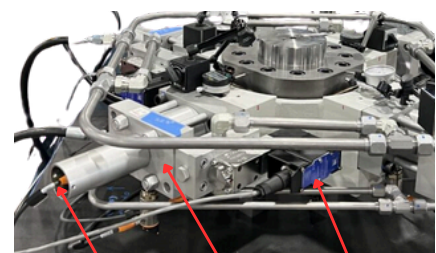
- Redesigned hydraulic control architecture
- Integrated Delta Motion closed-loop controls
- Updated valve technology
- Improved system feedback and diagnostics
- Engineered complete hydraulic integration

Result

Improved machine performance, greater process consistency, increased reliability, and a modern control platform capable of supporting future upgrades.



On-site tuning pushed XY performance to an astonishing ± 1 micron (0.000039") positioning accuracy!



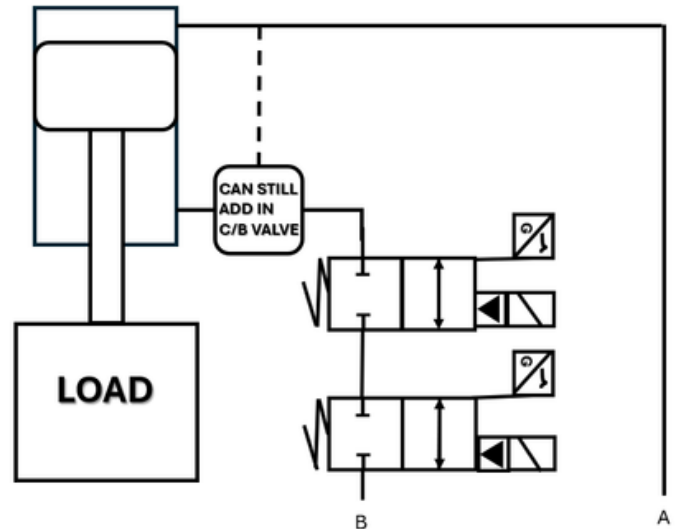
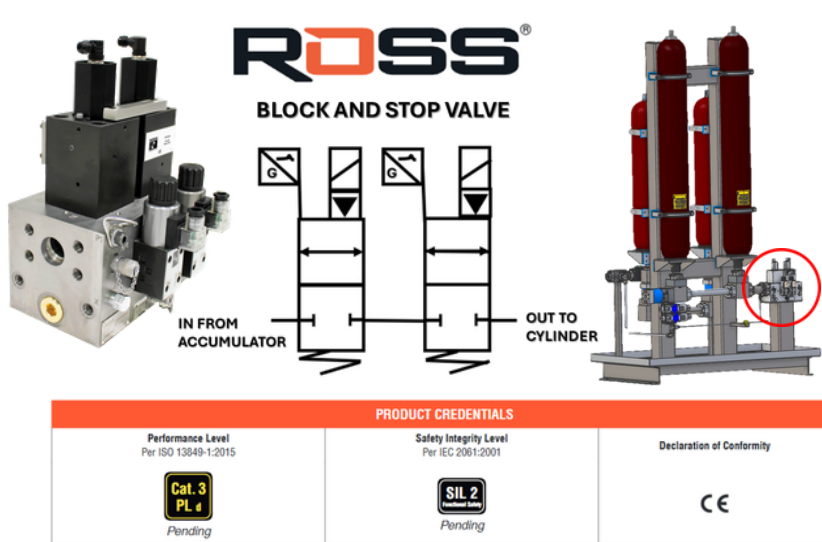
Balluff
Transducer

Milwaukee
Cylinder

Continental
MX Valve



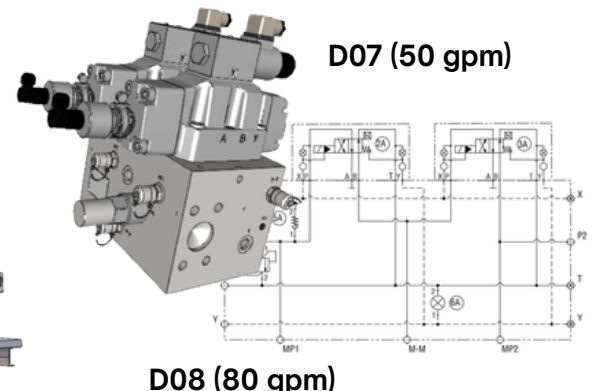
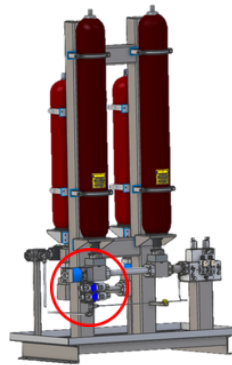
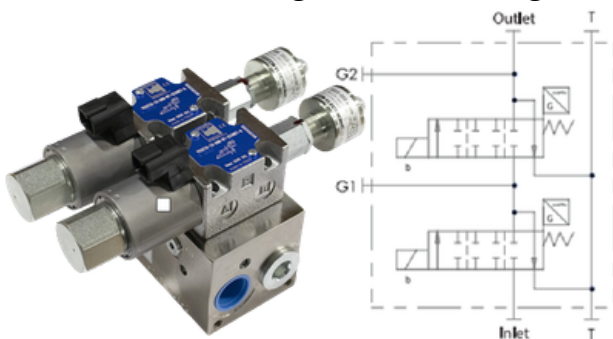
Very few companies offer advanced hydraulic safety solutions. Even fewer have the experience to properly apply them. Donald Engineering helps OEMs and manufacturers safely manage stored energy, load holding, accumulator circuits, and machine motion through engineered hydraulic safety systems.



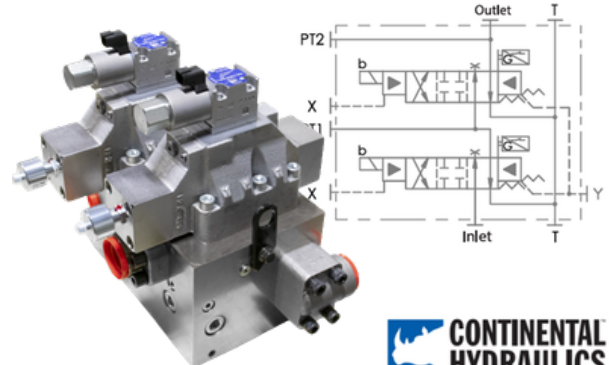
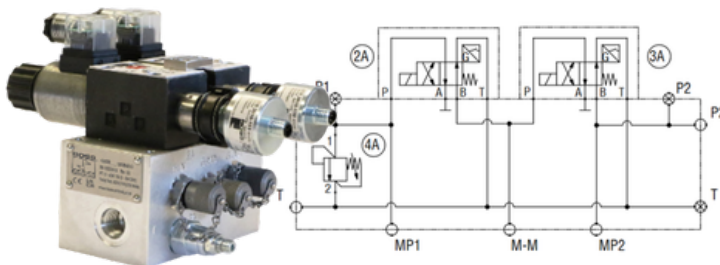
Cylinder stop and hold with block and stop valve.

Dual Monitored Block and Bleed Valve Assemblies

D03 (10-15 gpm) D05 (20-30 gpm)



D08 (80 gpm)



Why Application Matters

The right safety component installed incorrectly can create the same risk as having no safety component at all. That's why we start by understanding the machine, the hazard, and the required safety function before recommending a solution.

Anyone can sell the valve. Few can engineer the safety function.





LET'S BUILD IT TOGETHER!

Ready to discuss your hydraulic requirements?
Contact our sales engineering team today.

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