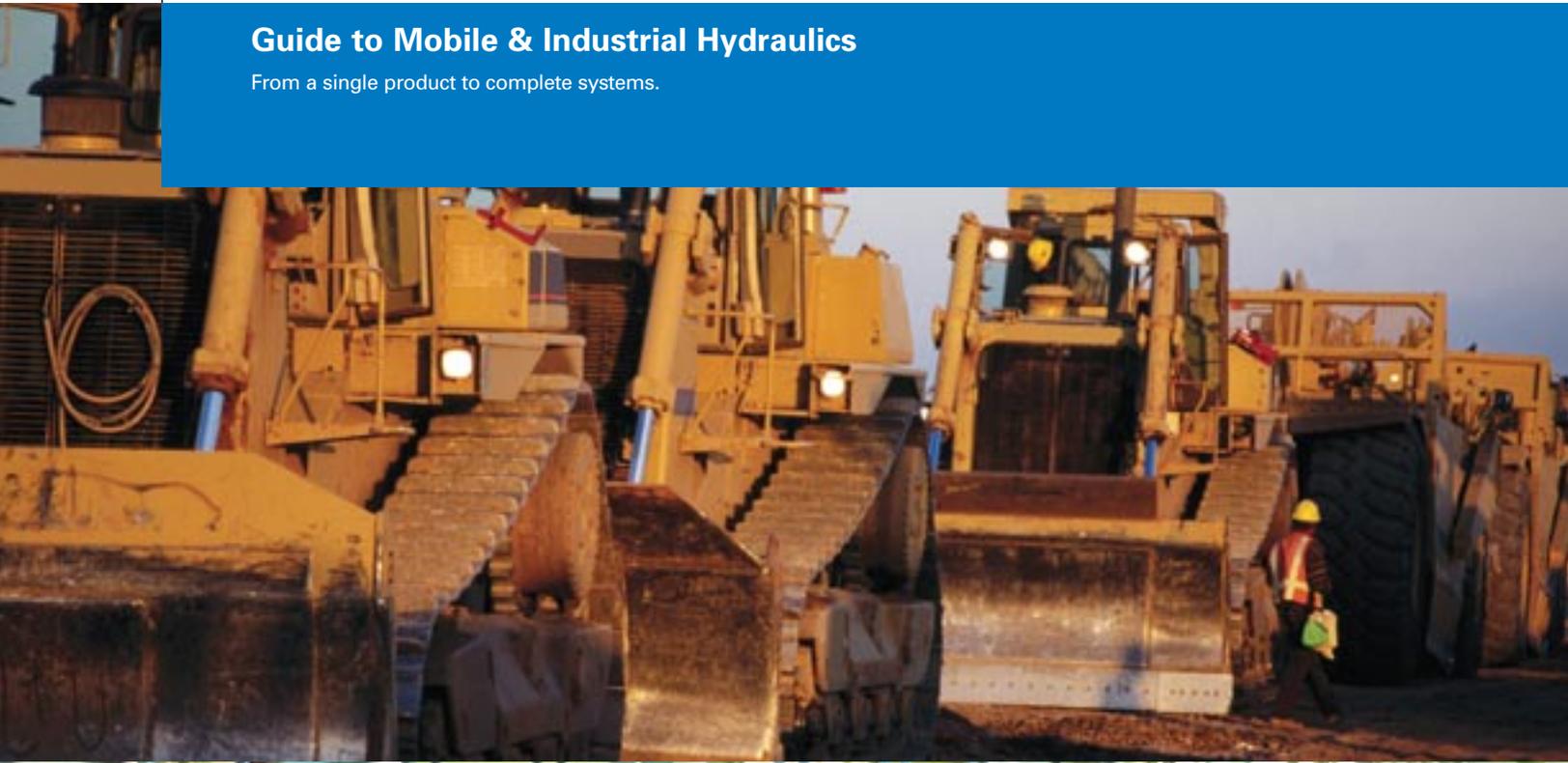




Hydraulics

Guide to Mobile & Industrial Hydraulics

From a single product to complete systems.



Brochure Highlights

- 3 Overview of Brands
- 4-5 Mobile Products and Capabilities
- 6-7 Industrial Products and Capabilities
- 8-15 Products

PRODUCTS	page number	MOBILE	INDUSTRIAL
Motors			
Spool Valve Hydraulic Motors	8	●	●
Disc Valve Hydraulic Motors	8	●	●
Valve-In-Star (VIS) Hydraulic Motors	8	●	
ME Series Hydraulic Motors	8		●
Hydrostatic Power Steering			
Series 5	8	●	
Series 10	8	●	
Series 20	8	●	
Series 25	8	●	
Series 40	9	●	
Steering Columns	9	●	
Vane Pumps			
VMQ	9	●	●
V10/V20	9	●	●
Open Circuit Piston Pumps			
PVB	9	●	
PVQ	9	●	
PVE	9	●	
PVH	9	●	●
PVM	10	●	●
PVXS	10	●	●
PVWS	10	●	●
Closed Circuit Piston Pumps and Motors			
Heavy Duty Series 2 Pumps	10	●	
Bent Axis Motors - Fixed & Variable	10	●	
Heavy Duty Series 1 Pumps	10	●	
Heavy Duty Motors - Fixed & Variable	10	●	
Medium Duty Manual Pumps	10	●	
Medium Duty Servo Pumps	11	●	
Medium Duty Motors - Fixed & Variable	11	●	
Light Duty Hydrostatics			
Light Duty Transmissions	11	●	
Light Duty Transaxles	11	●	
Gear Pumps and Motors			
Pumps	11	●	
Motors	11	●	
Valves			
Screw-in Cartridge Valves	11	●	●
Slip-in Cartridge Valves	11	●	●
Directional Control Valves	12	●	●
Flow Controls - Adjustable	12	●	●
Flow Divider Valves	12	●	●
Pressure Controls	12	●	●
Proportional Controls	12	●	●
Relief Valves	12	●	●
Self-Leveling Valves	12	●	
Servovalves	12		●
SystemStak™ Modular Valves	13		●
Hydraulic Remote Controls	13	●	
CMX Sectional Valves	13	●	
Monoblocks – 5 & 15 GPM	13	●	
Hydraulic, Pneumatic & Electrohydraulic Cylinders	13	●	●
Filtration	13	●	●
Integrated Motor Pump	13	●	●
Hose & Fittings			
MatchMate Plus™	13	●	●
Global Spiral	14	●	●
STC®	14	●	●
BRUISER™	14	●	●
PTFE	14	●	●
Thermoplastic	14	●	●
A/C & Transportation Products	14	●	
Constant Pressure	14	●	●
Socketless™	14	●	●
Adapters	15	●	●
Tube Fittings	15	●	●
Couplings	15	●	●
Swivels	15	●	●
Accessories	15	●	●
Tools & Crimp Machines	15	●	●
Performance Products	15	●	
Marine/Military	15	●	

Why Eaton Hydraulics?

Eaton Hydraulics is the largest business segment of the Eaton Fluid Power Group and a direct result of Eaton's dedication to leadership in hydraulics for both mobile and industrial applications. Eaton produces not only some of the world's best hydraulic products, but also the best and most complete world-class hydraulic systems.

From off-road to in-line.

Eaton provides hydraulics to large on-road and off-road mobile OEMs in the agriculture, construction, mining, marine and lawn and garden markets. Eaton is also a major force in providing hydraulic components and systems to leading industrial OEMs.

From world-class engineering capabilities in system design assistance to comprehensive service and technical support after the sale, Eaton Hydraulics is committed to one clear objective – complete satisfaction with all Eaton products and systems, for both industrial and mobile users.

Designed to your exacting specifications.

Eaton supports the needs of design engineers with products that meet a range of specifications. According to the functional needs of the vehicle or machine, your engineers can consult with Eaton to determine the exact flow, torque and displacement needs of the required components.

Nationwide distribution.

With distribution through 1000 distributors with 1500 locations nationwide, Eaton meets your needs for ongoing support as well as easy availability of replacement parts. The Eaton distribution network is ideal for meeting the system and component needs of smaller OEMs, too.

So whether your designs require hydraulics that help turn, shape, mold, lift, dig, or haul, Eaton products and systems are engineered for reliable, continuous performance in the world's most demanding and rigorous applications.

World-class brands.

Eaton Hydraulics is comprised of five key brands: Aeroquip, Char-Lynn, Eaton, Hydro-Line, and Vickers, each with well-established reputations not only in North America, but around the world:



Aeroquip brand products serve the industrial, aerospace, and automotive marketplaces. Products include all pressure ranges of hose, fittings, adapters, couplings and other fluid connectors.



Hydro-Line industrial cylinder products complement the Hydraulics cylinder business by making available to customers a broader selection of single-source products that can be easily integrated into a complete Eaton system. Industrial cylinders are used by machine and equipment builders to transfer and apply fluid power in applications that range from automobile production to large hydro-electric projects and off-shore drilling platforms.



Char-Lynn brand products have continued the tradition of being a well-respected line of hydraulic steering units and general-purpose motors; Char-Lynn is also known for its spool-valve, disc-valve, and high performance motors.

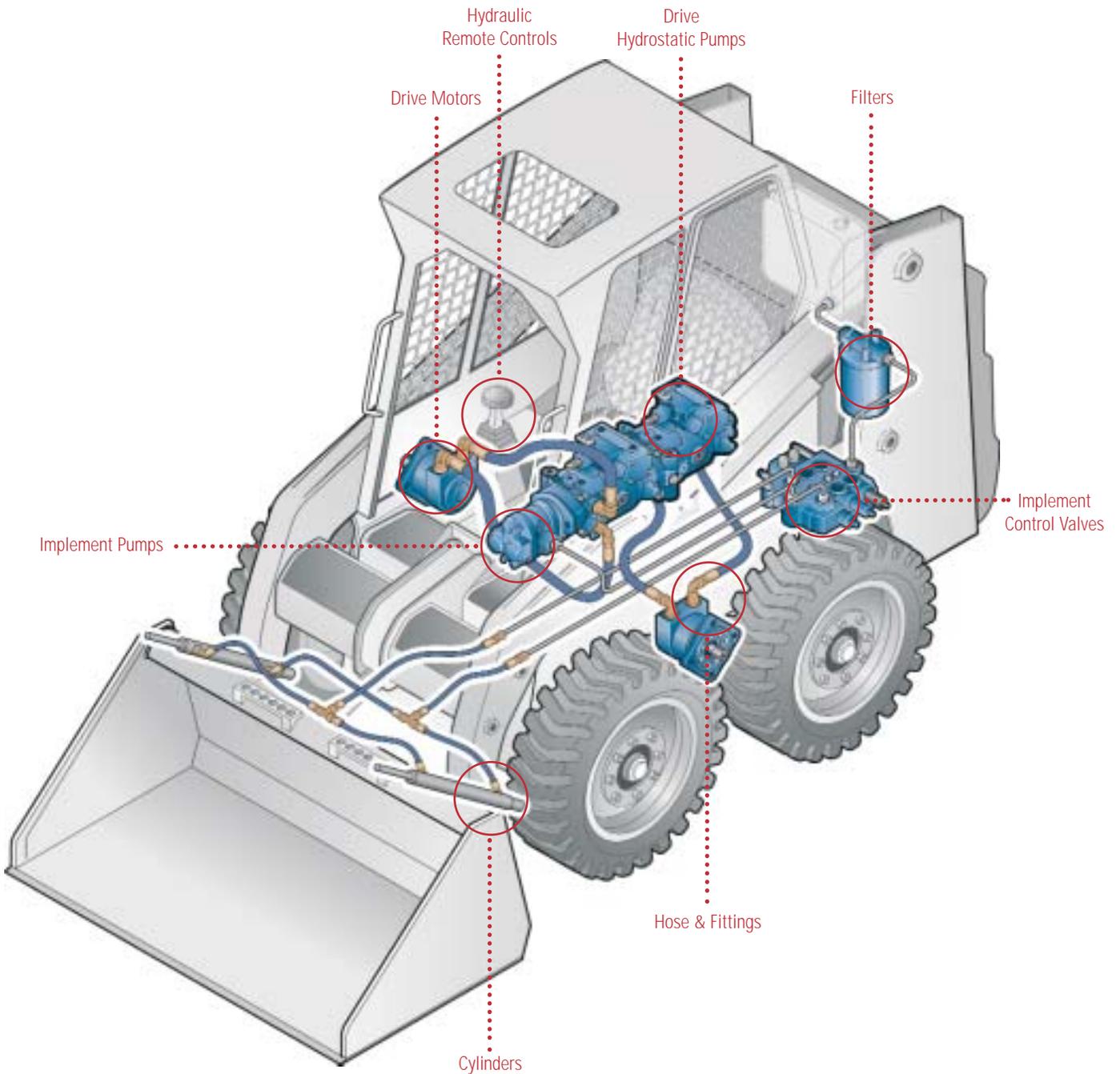


Vickers has long been a pioneer in providing power and motion control components including vane pumps, piston pumps, valves, cylinders and filtration products to the industrial, aerospace, marine and defense industries.



Eaton products are known for their excellence in engineering and production and include hydrostatic transmissions, valves, pistons and gear pumps and Valve-In-Star™ motors. Eaton brand products are generally more heavily used on mobile equipment.

Mobile Products and Capabilities



Lift. Dig. Haul...day in and day out. This is the work of Eaton Hydraulics products and systems. Engineered for reliable, continuous performance in the world's most rigorous applications.

Long recognized as a global leader, today Eaton is more powerful than ever. Now with an even wider range of reliable world-class products to serve virtually any mobile vehicle.

So whether you're specifying a single product, or an entire hydraulic system, make Eaton your global source for the fluid power products that'll move your world.



Mobile Applications

Agricultural

Eaton pumps, motors, transmissions, valves, cylinders, and controls, as well as hose and fittings, are ruggedly designed, and provide reliable performance in agricultural environments.

Construction

In demanding construction applications – where uptime is of major importance – Eaton hydraulic components provide the necessary functionality and durability.

Material Handling

Eaton hydraulic systems provide precise control and the solutions required for material handling use.

Utility

With a large range of products and solutions, Eaton is the desired supplier of hydraulic components and hydraulic systems to a large range of utility vehicles.

Forestry

In forestry applications, one of the most extreme applications around, Eaton hydraulics are the reliable answer for control, power, and durability.

Mining

Eaton is the preferred choice for many of the auxiliary systems on mining equipment. Eaton products can handle the harsh environments and the rigorous duty cycles, and can survive the tough applications.

Earthmoving

From propel motors and swing drives to auxiliary work systems, Eaton has many solutions to the demanding requirements of earthmoving applications.

Truck and Bus

Eaton hose and fittings and Eaton fan drive systems set a standard for truck and bus applications.

Highlights



W Series Motor with Integrated Brake

- Compact integrated design.
- Very low release pressure required.
- Self-contained, environmentally-protected brake.



STC Connectors

- Broadest range of threadless connectors in the industry!
- Eaton patented technology has been extremely successful in various rigorous mobile applications.



Series 5 Steering Control Unit

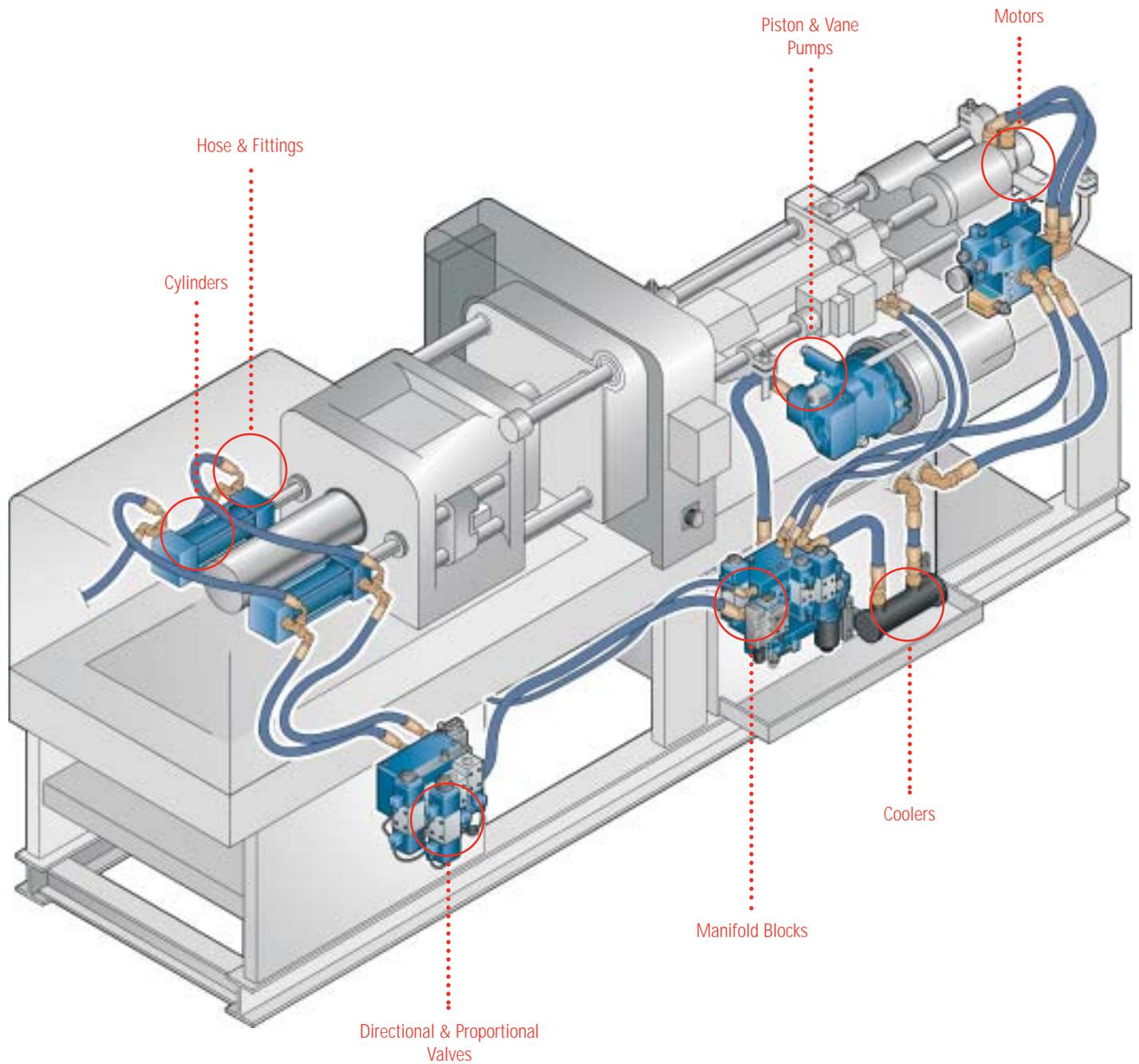
- Compact design and installation flexibility.
- Offering a variety of choices in mounting, port locations, configurations, and valve functionality.
- Provides lower pressure drop than competitive units.



Series 10 Steering Control Unit

- Robust design with balanced architecture.
- Several new, exciting features that result in smoother steering in a variety of conditions.
- Leadership performance in high pressure environments and is the only steering unit on the market capable of 275 Bar (4000 psi) continuous pressure rating.

Industrial Products and Capabilities



Cut. Groove. Bore...day in and day out. This is the work of Eaton Hydraulics products and systems. Engineered for reliable, continuous performance in the world's most demanding applications.

Long recognized as a global leader, today Eaton is more powerful than ever. Now with an even wider range of reliable world-class products to serve virtually any industrial application.

So whether you're specifying a single product, or an entire hydraulic system, make Eaton your global source for the fluid power products that'll keep you up and running.



Industrial Applications

Machine Tools *Metal Cutting and Metal Forming*

Eaton Hydraulics enable machinery to deliver high productivity and consistent accuracy for metal cutting machinery.

High pressure and flow components – piston pumps, cylinders and cartridge valves, provide the muscle and control required for metal forming machinery.

Molding *Plastics Injection, Rubber, Blow and Die Cast*

Strong application support coupled with a full range of hydraulic products – wide range of cylinders, vane and piston pumps, cartridge valves and manifolds – provides you with a single source solution.

Primary Metals *Steelworks*

Eaton high pressure pumps, cylinders and valves are the ideal components for delivering the muscle required in these rugged applications.

We can handle the heat and provide long life in mill environments.

Automotive *Engine and Transmission Plants*

Eaton products are trusted and specified by the world's leading automakers.

You can count on Eaton aftermarket support anywhere in the world.

Power Generation *Thermal, Hydro and Wind*

Eaton specialized products provide reliable operation with minimal routine maintenance.

Whether you build hydro-electric plants or wind turbines, Eaton has the specific solution for your needs.

Port Machinery *Ship to Shore Cranes and Container Handlers*

Eaton understands the fast paced action of dockyards.

You can rely on Eaton components to provide high productivity with maximum efficiency.

Entertainment *Motion Systems*

Eaton Hydraulics provide a natural look and feel to amusement park creature motions.

High masses and inertias developed on rides, are controlled with accuracy and simplicity.

Highlights



Open Circuit Piston Pumps

PVM

- Designed as a quiet, medium pressure pump for industrial applications.
- The cradle swashplate design pumps were created with low noise in mind.
- Design features reduce both the structure-borne and fluid-borne noise levels to market leading levels.



Vane Pumps

VMQ

- The latest state-of-the-art Vickers VMQ fixed displacement vane pumps.
- Set new standards of performance and efficiency for both industrial and mobile applications.
- Features design enhancements in all areas, resulting in a unique combination of higher pressure capabilities and outstandingly low noise levels.



Filters

Pro Guard Series

- Vickers filters handle flows to 300 USgpm and pressures to 6000 psi.
- A wide range of port sizes, bypass valves, pressure drop indicators and media grades facilitate filter installation and achievement of desired system cleanliness levels.
- Inch or metric ports are available.
- Reservoir vent filters feature a visual indicator and corrosion-resistant housing.
- In addition to particle control, these filters also feature water/moisture control.

Motors



Spool Valve Hydraulic Motors

Spool valve motors transmit high torque at low speeds by means of a cylindrical valve and a gerotor or Geroler®, which are special drive members that turn the output shaft.

Applications: Machine tools, drilling and tapping machines, seed drills, augers, conveyors, textile machinery, sweepers, fans, scissors lifts and commercial mowers.

Specifications: Speed Range: Up to 1000 RPM. Torque Range: Up to 565 Nm (5000 lb-in). Options: Variety of optional shafts, ports, mountings and displacements. Output Shafts: Straight with Woodruff key, splined, tapered or straight with cross holes (.315 or .406 dia.).

Disc Valve Hydraulic Motors

Disc valve hydraulic motors operate similarly to spool valve motors but use Gerolers® exclusively. They are designed with a flat, disc-shaped valving system and are reversible. These products are effective at very low speeds.

Applications: Conveyors, augers, screws, spreaders, mixers, grinders, winches, reel drives, sweepers and various propel applications.

Specifications: Speed Range: Up to 900 RPM. Torque Range: Up to 3390 Nm (30,000 lb-in). Options: Wide variety of optional shafts, mountings, ports, displacements, speed sensors- and bolt-on valves. 2-Speed Models: Available in Series 2000 and 10000.



Motors



Valve-In-Star (VIS) Hydraulic Motors

High performance VIS 30 and 45 motors deliver high torque in a compact envelope, plus superior volumetric and mechanical efficiencies. Patented design reduces leakage by incorporating a flexible, pressure-balanced wear plate. VIS design helps extend the performance life of the motor.

Applications: Skid steer loaders, crop sprayers, grape harvesters, specialty harvesting equipment, construction equipment, compactors, augers, forestry equipment, road rollers and trenchers.

Specifications: Speed Range: Up to 500 RPM. Torque Range: Up to 5085 Nm (45,000 lb-in).

ME Series Hydraulic Motors

Double swash plate, opposed-piston, low-speed, high-torque hydraulic motors. These motors operate smoothly at low speed within the maximum ratings and cause very little torque ripple. Available with a brake, counter-balance valve, two speeds and geared motor options.

Applications: Swing drives, winches and propel drives for large vehicles.

Specifications: Pressure Range: 248 and 276 Bar (3600 and 4000 psi). Torque Range: Up to 16136 Nm (11,900 lb-ft).



Hydrostatic Power Steering



Series 5

The Series 5 features a compact design and installation flexibility. These units offer a variety of choices in mounting, port locations, configurations, and valve functionality. Series 5 units provide lower pressure drop than competitive units.

Specifications: Displacement: 31.5-120cm³/r (1.92-7 .33in³/r). Flow: 11-19l/m (3-5gpm). Pressure: 140 Bar (2030 psi).

Series 10

A robust design with balanced architecture offering several new, exciting features that result in smoother steering in a variety of conditions. The Series 10 has leadership performance in high-pressure environments and is the only steering unit on the market capable of 275 Bar (4000 psi) continuous pressure rating.

Specifications: Displacement: 58.7-739 (3.58-45.1). Flow: 3.8-60 (1-16). Pressure: 275 Bar (4000 psi).



Hydrostatic Power Steering



Series 20

The Series 20 steering unit features two of Eaton's patented technologies to provide the best-in-class steering for high flow, high pressure applications. Target markets for the Series 20 include articulated vehicles and rigid frame vehicles.

Specifications: System pressure (Max.): 3500 psi. Back pressure (Max): 145 psi. Flow (Max): 33 gpm.

Series 25

The Series 25 steering unit continues Eaton's tradition of innovative design and high quality. This unit includes two patented designs that make it even more responsive, reliable, and cost effective. Target markets for the Series 25 include Articulated Vehicles and Fixed Frame Vehicles.

Specifications: System pressure (Max.): 3500 psi. Back pressure (Max): 300 psi. Flow (Max): 40 gpm.



Hydrostatic Power Steering



Series 40

The Series 40 steering unit is designed for the highest flow, high pressure applications, and is the most capable steering unit on the market. This unit features patented Eaton technology and has design attributes that result in smoother, more stable steering.

Specifications: System pressure (Max.): 3500 psi. Back pressure (Max): 300 psi. Flow (Max): 56 gpm.

Steering Columns

Eaton offers a complete line of Char-Lynn columns that can be custom built to your exact specifications. The column and mounting flange have a sturdy single weldment design, and have high thrust and side load capacity with low shaft torsional friction.



Vane Pumps



VMQ

The Vickers VMQ is the world leader in pressure capacity and noise levels and is available in a complete range of singles, doubles, triples and thru-drives. The unique wafer plate design of the VMQ allows for the increase in viscosity and pressure rise during cold start-up — something that competitors do not have. The Vickers VMQ 30th design is the highest pressure, lowest noise fixed vane pump available.

Applications: Marine and railway winches, oil field and drilling equipment, earthmoving and construction equipment, high-pressure plastic injection molding machines, large press machines, trash compactors and large balers.

Specifications: Displacements: From 10 cc/rev (.60 in³/r) to 463 cc/rev (28.2 in³/rev) using triple pump combined flow. Pressure Range: Up to 4250 psi (293 Bar). Speed Range: Up to 3000 r/min.

V10/V20

Available in single and double models, variable and fixed displacement. Double pumps provide a single power source capable of serving two separate hydraulic circuits, or provide greater volume through the combined delivery of both sections.

Applications: Marine and railway winches, earthmoving equipment, trash compactors and power steering mechanisms.

Specifications: Displacement: Up to 5.1 in³/r (83.6 cc/r) for the double V2020 pump. Pressure Range: Up to 2500 psi (172 Bar). Speed Range: Up to 4800 r/min.



Open Circuit Piston Pumps



PVB

One of the most widely known industrial open circuit piston pumps on the market. The large number of control options provides for extreme flexibility in applications.

Applications: Factory automation, hydraulic power supplies, and small mobile equipment auxiliary circuits.

Specifications: Displacements range from 10cc to 94cc, 1800 RPM maximum and up to 210 Bar.

PVQ

Based on the industrial versions of PVB and PVE Open Circuit Piston Pumps, the Q Series greatly improves operating noise levels. The design of the PVQ reduces sound levels by 4 dBA. The large number of control options provides for extreme flexibility in applications.

Applications: Factory automation, hydraulic power supplies, food processing machines, and machine tools.

Specifications: Displacements range from 10cc to 45cc, 1800 RPM maximum and up to 210 Bar.



Open Circuit Piston Pumps



PVE

The PVE Open Circuit Piston Pump was designed with mobile hydraulics in mind. The robust design often exceeds the life requirements of the machines it is applied in.

Applications: Farm tractors, agriculture equipment, utility vehicles, construction equipment, and many other mobile applications.

Specifications: Displacements range from 25cc to 45cc, 3000 RPM maximum and up to 210 Bar.

PVH

The H Series Open Circuit Axial Piston Pumps provide power for a wide range of mobile and industrial applications meeting customer requirements for performance. These cradle type swashplate pumps have rapid response to hydraulic circuit dynamics.

Applications: Mobile: wheel loaders, graders, scrapers, utility vehicles, dozers, forestry harvesting machines, and rock drills. Industrial: metal-forming equipment, hydraulic power supplies, press, factory automation, and machine tools.

Specifications: Displacements from 57cc to 141cc, speeds up to 2600 RPM and pressures up to 250 Bar continuous.



Open Circuit Piston Pumps



PVM

The M Series Piston Pump family was designed as a quiet, medium pressure pump for industrial applications.

The cradle swashplate design pumps were created with low noise in mind. Design features reduce both the structure-borne and fluid-borne noise levels to market leading levels.

Applications: Metal forming, tube bending, machine tools, precision sawing, factory automation, press, and hydraulic power supplies.

Specifications: Full 280 Bar continuous, 320 Bar intermittent pressure. Electric motor speeds. Mineral-oil-based and fire-resistant fluid compatibility. Displacements from 18cc to 141cc. Pressure compensation and pressure/flow compensation controls.

PVXS

The Hydrokraft PVXS design pumps are high pressure (350 Bar) axial piston pumps designed for industrial markets. The PVXS are widely used where their range of specialized pump controls can optimize circuits.

Applications: Metal forming, tube bending, press, marine and off-shore winches, chemical mixing grinding/shredding, and hydraulic power supplies.

Specifications: Full 350 Bar (5000 psi) continuous pressure. Electric motor speeds. Mineral oil based and fire resistant fluid compatibility. Displacements from 66cc (4.0 in³) to 250cc (15/2 in³).



Open Circuit Piston Pumps



PVWS

The Hydrokraft PVWS design pumps are high pressure (350 Bar) axial piston pumps. These products are designed for industrial markets and have a perpendicular style control mechanism allowing tandem pump combinations with short lengths. These high displacement pumps have a very long list of optimized control options that allow operation in many unique customer applications.

Applications: Metal forming, tube bending, press, marine and off-shore winches, chemical mixing grinding/shredding, and hydraulic power supplies.

Specifications: Full 350 Bar (5000 psi) continuous pressure. Electric motor speeds. Mineral oil based and fire resistant fluid compatibility. Displacements from 250cc (15.2 in³) to 750cc (45.7 in³).

Closed Circuit Piston Pumps & Motors

Heavy Duty Series 2 Axial Piston Pumps

Series 2 pump meets the market's demands for compact, quiet hydrostatic power. The power-dense, axial-piston design and wide range of controls are suited for mobile and industrial applications. Series 2 offers durability and high power density, plus a variety of options and controls.

Applications: Agricultural, crop sprayers, lift trucks, timber harvesters, road rollers, wheel loaders, road building, construction equipment and industrial applications.

Specifications: 430 Bar (6250 psi), 5 displacements from 54 to 105cc. Speeds up to 4510 RPM. Integral charge pumps. A, B, B-B, C auxiliary through-drives.



Closed Circuit Piston Pumps & Motors



Bent Axis Motors - Fixed & Variable

Eaton's family of Bent Axis Motors offer designers greater flexibility than ever before. Capable of operation in open or closed circuits, these motors are well suited to a wide range of stationary and mobile applications. Available configurations include fixed and variable displacements, flange or gearbox mounts. Motors can be tailored with controls, ports, and valving to optimize productivity, efficiency, and cost effectiveness.

Applications: Earthmoving machines and construction equipment, agricultural and forestry vehicles, marine and off-shore equipment, industrial conveying, mixing and other stationary in-plant uses.

Specifications: Eleven fixed displacement options from 11cc (.66 cir) to 225cc (13.73 cir). Five variable displacement options from 55cc (3.34 cir) to 225cc (13.73 cir). Rated pressure 350 Bar (5100 psi), peak pressure to 450 Bar (6500 psi). Speeds up to 5590 RPM.

Heavy Duty Series 1 Axial Piston Pumps

Series 1 offers durability and high power density, plus a variety of options and controls.

Applications: Agricultural, transit mixer drum drives, industrial applications, lift trucks, timber harvesters, road rollers, wheel loaders and construction equipment.

Specifications: Six displacements from 54 cc/r (3.34 cir) to 125 cc/r (7.62 cir). Speeds up to 4510 RPM.



Closed Circuit Piston Pumps & Motors



Heavy Duty Axial Piston Motors - Fixed & Variable

Eaton offers a complete line of piston motors for all types of hydrostatic drives. Product range includes fixed and variable displacement, axial and bent axis designs. Complete families of control, shaft, valve block, mounting and porting options offer unparalleled flexibility to systems designers.

Applications: Agricultural, construction, lawn and turf, utility equipment.

Specifications: Six displacements from 54 cc/r (3.34 cir) to 125 cc/r (7.62 cir). Pressure up to 430 Bar (6250 psi). Speeds up to 4510 RPM.

Medium Duty Axial Piston Manual Pumps

Different valve plate options provide a range of control efforts that can closely match your application needs. A square control shaft reduces control linkage wear. A flexible pump design, with single, tandem, and back-to-back versions available. When your application calls for a robust, manually controlled pump this product is the choice.

Applications: Agricultural, construction, lawn and turf, utility equipment.

Specifications: Model 70360 – Displacement (Max.): 20,3 cc (1.24 cid). Speed (Max.): 3600 RPM. Continuous Rated Pressure: 210 Bar (3000 psi). Intermittent Pressure (Max.): 345 Bar (5000 psi). Model 70160 Displacement (Max.): 40,6 cc (2.48 cid). Speed (Max.): 3600 RPM. Continuous Rated Pressure: 210 Bar (3000 psi). Intermittent Pressure (Max.): 345 Bar (5000 psi).



Closed Circuit Piston Pumps & Motors



Medium Duty Axial Piston Servo Pumps

For ease of operation or electronic pump controls this product is the choice. A versatile, pump with many features and options. For example, five different charge pump displacements are available. A flexible design configured to meet your needs with many features and options.

Applications: Agricultural, construction, lawn and turf, utility equipment.

Specifications: Displacement (Max.): 40,6 cc (2.48 cid). Speed (Max.): 3600 RPM. Continuous Rated Pressure: 210 Bar (3000 psi). Intermittent Pressure (Max.): 379 Bar (5500 psi).

Medium Duty Axial Piston Motors - Fixed & Variable

Match these motors up with the appropriate pump for a robust hydrostatic transmission. They offer opposite, same and rear port configurations with many optional spline and keyed shafts. Available with shuttle valve, back pressure valve for improved loop cooling and flushing. Also offer speed sensors and a through-shaft option for brake mounts. Variable motors are available with manual, hydraulic destroke or servo control.

Applications: Agricultural, construction, lawn and turf, utility equipment

Specifications: Displacement Range: 1.50, 2.01, 2.48, 3.02 cu. In. Speed (Max.): 3600 RPM. Continuous Rated Pressure: 210 Bar (3000 psi). Intermittent Pressure (Max.): 370 Bar (5400 psi).



Light Duty Hydrostatics



Light Duty Transaxles

Eaton manufactures Models 751, 771, 778 and 851 transaxles with integral ball piston pumps, motors and axle with planetary gears. This design provides a strong and durable compact drive package. Several gear reduction ratios are available.

Applications: Lawn tractors, utility vehicles and ZTR mowers.

Specifications: Output Speeds (Max.): Model 751–110 RPM (@ 3600 RPM Input), Model 771–153 RPM (@ 3600 RPM Input), Model 778–121 RPM (@ 3600 RPM Input), Model 851 – 112 RPM (@ 3200 RPM Input).

Light Duty Transmissions

These transmissions combine a variable displacement, radial-ball-piston, and hydraulic pump with a fixed displacement, radial-ball-piston, and hydraulic motor in one housing.

Applications: Lawn tractors (8-20 HP) and seeders, commercial mowers, golf course maintenance equipment, concrete saws, utility trucks, garden tractors and ZTR (zero-turn radius) mowers.

Specifications: Models 6 & 7 – Speeds (Max.) Input 3600 RPM, Output 2150 RPM. Torque Output: Continuous, 14 Nm (120 lb-in), Intermittent, 20 Nm (180 lb-in), Peak, 27 Nm (240 lb-in). Model 11 – Speeds (Max.): Input 3600 RPM, Output 0 - 1950 RPM. Torque Output: Continuous, 41 Nm (360 lb-in), Intermittent, 61 Nm (540 lb-in), Peak, 81 Nm (720 lb-in).



Gear Pumps and Motors



Gear Pumps

Gear pumps use internal spur gears to both provide oil flow and respond to pressure demands within hydraulic systems. These products are manufactured with three-piece die-cast aluminum housings.

Applications: Garden and utility tractors, backhoes, combines, road graders and hay swathers.

Specifications: Speed Range (Max.): 2250 to 4000 RPM. Rated Pressures: 207 – 241 Bar (3000 to 3500 psi).

Gear Motors

Gear motors transfer fluid power from hydraulic pumps to rotational drive equipment. They are usually remote-mounted and available in rear-ported models.

Applications: Large golf course mowers, trenchers and hay swathers.

Specifications: Speed Range (Max.): 3000 to 4000 RPM. Maximum Torque (Range): 12, 4 - 52,2 Nm (110 – 460 lb-in). Rated Pressure: 207 Bar (3000 psi). Pressure (Max.): 241 Bar (3500 psi).



Valves



Screw-in Cartridge Valves

Screw-in cartridge valves provide many advantages over traditional hydraulic valves. While offering the same control functions as traditional hydraulic valves, screw-in cartridge valves are compact, reliable, and economical. Combining multiple valves in a common manifold offers the user substantial cost-saving advantages that cannot be achieved with traditional valving.

Specifications: Pressure: Up to 6000 psi. Flow: Up to 150 USgpm.

Slip-in Cartridge Valves

Typically associated with relatively high flows, i.e. 40 USgpm or higher, slip-in cartridge valves are targeted at more efficient, faster and more compact hydraulic systems. Eaton cartridge valve system technology meets the changing needs of new generations of hydraulically operated machinery and equipment. Today's machines need controls that are exceptionally cost effective and energy efficient. Vickers cartridge valves fulfill these needs.

Applications: Compatible with computer or programmable controls via electrically modulated pressure and flow control models. Simple on-off solenoid pilot controls, as well as air operated types, are also available.

Specifications: Pressure (Max.): 5000 psi for all cartridges.



Valves



Directional Control Valves

Available as pressure-compensated and non-pressure compensated, plus selector valves with or without relief and shuttle valves, directional control valves are designed for flexibility, easy application and performance. Available in various sizes and operators – solenoid, hydraulic, air, cam or lever – to meet a wide range of applications.

Applications: Many common connectors such as Packard Weatherpak, DIN/EN, Amp and Deutsche (single & double spade). Sure suppression is available as standard on applicable valves.

Specifications: Rated Flow: 19 - 95 L/Min. (5 - 250 GPM). Rated Pressure: 172 – 241 Bar (2500 – 3500 psi).

Flow Controls – Adjustable

Temperature and pressure-compensated flow controls allow precise volumetric control. Suitable for pressures up to 3600 psi, flow controls are available with (bypass type) or without (restrictor type) integral relief valves. Adjustable flow control valves are suited for applications requiring flow regulation without pressure compensation.



Valves



Flow Divider Valves

Priority-type, pressure-compensated flow divider valves are made in adjustable and non-adjustable models up to 379 L/Min. (100 GPM).

Pressure Controls

Remote and standard relief valves mount between the pump and valve system to protect from overloads. A sensitive adjustment mechanism allows the setting of the pressure in fine increments over a wide range – up to the maximum rating of the valve.

Specifications: Pressure Range: 75 to 1000 psi up to 1500 to 3000 psi. Maximum flow: Up to 180 USgpm.



Valves



Proportional Controls

Proportional controls include directional and throttle controls with separate drive amplifiers/controllers, directional controls, with or without electrical feedback, electrohydraulic proportional pressure relief valves, electrohydraulic proportional flow control valves (Valvistor) as well as auxiliary function modules for proportional valves.

Specifications: Various spool options are available for rated flows up to 190 USgpm. Working pressures are to 4500 psi.

Relief Valves

Pilot-operated relief valves are manufactured in adjustable and non-adjustable models. Cartridges, tees, and elbows, with port sizes for most applications are available.



Valves



Self-Leveling Valves

These linear flow divider valves for automatic leveling of bucket or attachments are used on skid steer or agricultural loaders. Available in single direction (raise only) or new dual direction.

Specifications: Rated Flow: 20 GPM. Rated Pressure: 3500 psi.

Servo Valves

These two-stage, four-way, flapper nozzle valves provide system closed loop control with exact positional accuracy, repeatable velocity and predictable force or torque regulations.



Valves



SystemStak™ Modular Valves

These compact hydraulic systems feature modular valves that are “sandwich” mounted between a directional control valve and a standard mounting surface. All circuit flow paths are contained within the control valve and modules. These valves provide a compact hydraulic circuit at a reduced cost, eliminating interconnecting piping. Each valve “stack” can be configured to provide the specific system functions.

Specifications: Rated Pressure: 4500 psi.

HRCs – Hydraulic Remote Controls

Low effort, precise control means less operator fatigue and more productivity. Excellent pressure metering capability allows precise control and less wear-and-tear. Freedom of system design means single-station control of widely placed directional valves can be readily achieved. In a vehicle, an HRC is easily mountable in the cab or elsewhere because it is compact and eliminates the cumbersome mechanical linkage found in many applications.

Applications: Wheel loaders, skid steer loaders, backhoe loaders, excavators, cranes, lift trucks and forestry machines.

Specifications: Rated Input Flow: 4.2 GPM. Pressure Rating: 1600 psi.



Valves



CMX Sectional Valves

CMX sectional valves provide hydraulic or electrical actuation, allowing generous flexibility for location and installation in a vehicle. Phasing between meter-out and meter-in can be pre-selected to easily match valve metering to type of load and cylinder area ratio and permit lowering without using pump flow. Pressure compensated meter-in provides good metering when two or more functions are operated simultaneously and permits priority to be accomplished in pilot circuit.

Applications: Forestry equipment, wheel loaders, rough terrain lift trucks and boom man lifts.

Specifications: Rated Flow: 26 & 42 GPM. Pressure Port Rating: Up to 5075 psi depending on port configuration.

Monoblocks – 5 & 15 GPM

Excellent monoblock design results in fewer leakage paths. Hardened and plated spools provide superior impact and corrosion resistance. Two-point mounting prevents spool binding.

Applications: Trenchers, sweepers/scrubbers, stand-up lift trucks, aerial work platforms, small ag loaders, garden tractors, golf course maintenance equipment and highway mowers.

Specifications: Rated Flow: 5 and 15 GPM. Pressure Rating: 2500 to 3000 psi.



Hydraulic, Pneumatic & Electrohydraulic Cylinders



A broad range of single and double acting cylinders is available for industrial and mobile markets, with standard and custom design and manufacturing capability to meet every need.

Applications: Applications include plastic blow and injection molding equipment, machine tools, steel mills, tube benders, packaging and material handling equipment, food processing, off-shore, planters and pickers.

Specifications: Rated Pressures to 4,600 psi (320 Bar) Standard, to 10 ksi Custom. Available Sizes: 3/4 to 60 inch (20 to 1500 mm) bore sizes. 5/16 to 50 inch (8 to 1270 mm) rod sizes. Strokes to 65 feet (20 meters).

Filtration

Vickers filters handle flows to 300 USgpm and pressures to 6000 psi. A wide range of port sizes, bypass valves, pressure drop indicators and media grades facilitates filter installation and achievement of desired system cleanliness levels. Inch or metric ports are available. Reservoir vent filters feature a visual indicator and corrosion-resistant housing. In addition to particle control, these filters also feature water/moisture control.



Integrated Motor Pump



A unique combination of a conventional AC induction motor cooled with system hydraulic oil and hydraulic pump, either fixed vane pump or variable piston type, housed in a special sound reduction enclosure. This combination provides an exceptionally quiet and small pumping package for any industrial application requiring up to 125 horsepower (92 kilowatts) of continuous hydraulic power.

Hose and Fittings

MatchMate Plus™

Aeroquip's MatchMate Plus “3 Minute Crimp Hose Assembly System” is tailor made for high-speed assembly processes. Hoses are color-coded for the ease of identification. An error-free selection exists for fittings – the number of rings on the fitting sockets matches-up with the number of rings on the hose laylines.

Applications: General hydraulic systems, construction equipment.

Specifications: 6 hose styles; 1/4" thru 2" size range that meet a variety of DIN/EN and SAE specifications.



Hose and Fittings



Global Spiral

Aeroquip's Global Spiral TTC (Through-The-Cover) fittings are ideal for use with Aeroquip's four and six wire spiral hose styles. Available throughout the world, this new Global Spiral TTC fitting sets the standard for high-pressure hose fittings. Featuring micro-alloy steel and no-braze technology, Global Spiral TTC fittings provide you with superior strength and extended cycle-life performance in a one-piece fitting design.

Applications: Hydrostatic drives, oil rigs.

Specifications: Available in a wide array of fitting terminal end connections and bend angles to support equipment platforms from around the world. In sizes 3/4" up to 2". Hose assemblies meet a variety of DIN/EN and SAE specifications.

STC®

The broadest range of threadless connectors in the industry! Eaton patented technology has been extremely successful in various rigorous mobile applications.

Applications: Truck/bus platforms and construction/agricultural equipment.

Specifications: Connections are offered in 3/8" up to 1". Pressures: Up to 5000 psi.



Hose and Fittings



BRUISER™

A hose cover ideally suited for high-abrasion applications. The BRUISER cover has the highest resistance to abrasion of any known polymer-covered hose and can be found on a variety of Aeroquip branded hose products.

Applications: Forestry equipment, heavy construction.

Specifications: 1/4" thru 2". Used on hoses that meet a variety of SAE specifications, like 100R2 and 100R12.

PTFE

A broad range of hoses and matched fittings are available for use in a wide variety of applications. PTFE fits the bill when high temperature meets the entire spectrum of fluid pressures.

Applications: Ranging from self-contained breathing apparatus to high temperature engine hose.

Specifications: Meet SAE 100R14A and B specifications. Pressures: Up to 5000 psi.



Hose and Fittings



Thermoplastic

Choose from a full line of hydraulic thermoplastic hoses. The versatility of thermoplastics allows for non-conductive hoses to be used on utility truck applications.

Applications: Forklifts and agricultural equipment.

Specifications: Hoses with ID's that range from 1/8" thru 1". Pressures: Up to 10000 psi.

A/C & Transportation Products

Engineered components and assemblies for a wide range of fluid power systems. Hose materials range from high temperature AQP to PTFE to nylon veneer products for A/C applications.

Applications: Hose and fittings for air conditioning and refrigeration, fuel and lube oil, engine and transmissions, oil cooler lines, airbrake, and power steering applications.

Specifications: A/C = multi-refrigerant; Transportation = truck hose for every application.



Hose and Fittings



Constant Pressure

Available in a variety of cover materials including BRUISER. One pressure and one part number equals simplified inventory and selection.

Applications: Skid steers, backhoes.

Specifications: 3,000, 4,000 and 5,000 psi hose with 1/2 SAE bend radius capabilities in all sizes for ease of routing.

Socketless™

A broad range of hose styles for a variety of application needs. Available in various colors.

Applications: In-plant air, low pressure hydraulic systems.

Specifications: 1/4" thru 3/4".



Hose and Fittings



Adapters

An extensive selection of standard and non-standard configurations to meet every need. Available in carbon steel, brass, and stainless steel.

Applications: General hydraulic systems use.

Specifications: 1/8" thru 2". Meet dimensional specifications outlined in SAE. J512, J513, J1926, and J1453.

Tube Fittings

Designed to match up with tube dimensions that are offered in a variety of end configurations – ISO, BSP, and NPT to name a few popular standards.

Applications: General hydraulic systems use.

Specifications: Available in sizes 1/8" up to 2".



Hose and Fittings



Couplings

A broad range of products encompassing the simple (air couplings) to the complex (hydraulic applications) to the most complex (SCBA).

Applications: Hydraulic attachments, SCBA.

Specifications: Full range of pneumatic, hydraulic and fluid transfer. Couplings that meet a variety of SAE abs ISO specifications.

Swivels

Offering compact and robust designs while offering a wide variety of end configurations with the flexibility to perform in many dynamic hydraulic applications.

Applications: Hose reels, scissor lifts.

Specifications: Can be used in a full range of pneumatic, hydraulic and fluid transfer applications.



Hose and Fittings



Accessories

A full range of clamps, protective sleeves, hose cleaning services and hose routing aids.

Specifications: Able to be used with all sizes of hose and metal products.

Tools & Crimp Machines

A wide variety of crimp machines are available for every requirement (low and high volume hose assembly) for both distributors and OEMs. Select from the complete line of popular crimp machines: FT1380P, FT1380, FT1390, and the FT1370.

Specifications: Ability to crimp hose of all sizes (1/8" up to 2").



Hose and Fittings



Performance Products

High performing hose, fittings and adapters for discriminating motorsport enthusiasts and professionals around the world. Aeroquip Performance Products...There is a Difference!

Specifications: Fuel, oil, coolant, gauge, and brake lines.

Marine/Military

Wide variety of hose, fittings and adapters that meet many marine, military and government specifications. Aeroquip Marine/Military...there is no equal!

Specifications: Lube, fuel, water, and air. A detailed catalog specifically listing the Mil spec part numbers is available for the customer's use.



Learn from the hydraulics experts with Eaton Fluid Power Training.

Knowledge is power. And nowhere can your team strengthen its knowledge more effectively than with Eaton Fluid Power Training.

Our field and industry specialists combine the very best resources of Eaton with the impressive legacy of Vickers and Aeroquip Training. Our training team delivers truly practical insight about design, contamination and troubleshooting of hydraulic and pneumatic circuits.

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by reducing unplanned downtime and maximizing the effectiveness of planned downtime. More than 2,500 people each year attend training at Eaton Fluid Power Training Centers in Eden Prairie, MN, and Maumee, OH, or through customized on-site programs.

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- INVEST, an electrohydraulics home-study program
- Easy-to-read professional publications



Find out how your hydraulics maintenance staff can benefit from Eaton Fluid Power Training. For an up-to-date class schedule and list of training materials, visit www.hydraulics.eaton.com (go to Training) or call 800-413-8809.

Courses

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- Mobile Hydraulics
- Troubleshooting
- Systemic Contamination Control
- Circuit Design
- Pneumatics
- Electrohydraulics
- Cartridge Valves
- Proportional Valves

- Customized training at your location
- Product Training

Materials Manuals:

- Industrial Hydraulics
- Mobile Hydraulics
- Electrohydraulics
- Contamination Control

CD-ROMS:

- Industrial Hydraulics Training Systems

Videos:

- Aeration/Cavitation Demonstration
- Introduction to Hydraulic Technology Set
- Test and Repair Series

Cut-aways:

- Pumps
- Valves
- Motors

Simulators

- FPT-4e: Double-sided workstation, accommodates 4–6
- Desktop: Self-contained, compact
- Electrohydraulic: Single-sided workstation, accommodates 3–4

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