

Durable motors

Rineer Hydraulics has developed the 37, 57, and 125 series Code 62 high-performance motors. The compact motors offer continuous pressure ratings to 4500 psi (310 bar), displacements from 12 to 250 in³ (200 to 4100 cm³), and wide speed capabilities for high-power



requirements. The motors offer additional benefits of built-in high-capacity axial and radial bearing as standard. Shaft selections include single-ended, double-ended, female connections, hollow shafts, and API type drill motors throughout the series. With four-port capability in the series, multi speeds are also possible.

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Hydraulic options

OilAir Hydraulics, a division of the **Olaer** Group, offers a range of hydraulic control products that include diaphragm, bladder, and piston-type accumulators; surge arrestors; pulsation dampeners; transfer barriers; hydraulic racks and skids; filters; safety shut-off valves; and many other items. Seamless



and welded-type vessels are available in a variety of materials that include carbon, stainless steel, Monel, and Hastalloy. The company also offers products for heat-transfer and temperature-maintenance applications that include a range of air-to-air, air-to-liquid, and liquid-to-liquid coolers and heat exchangers.

Units can include ac or dc hydraulic- or electric-motor controlled fans to increase heat-transfer capabilities. Construction consists of bar and plate, brazed plate, and shell and tube design out of materials that include aluminum, stainless steel, and titanium. OilAir also offers repair services that include re-honing, flushing, replacing parts, re-pressurizing, testing, and certification.

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Relief valve

Sauer-Danfoss' PRV electro-proportional relief valve and PSV electro-proportional four-way direction control valves offer smooth propor-



tional functionality for hydraulic circuits. The valves meet the needs of aerial-lift and material-handling vehicles and can be used in custom manifolds to create hydraulic integrated circuits that offer less plumbing, easier installation, fewer leak points, and easier service than traditional valve systems. They are PLUS 1 compliant for integration into a customized electronic control system.

For more information, circle 58

Hydraulic fan drive systems

Haldex hydraulic fan drive systems offer advantages to cooling system designers when compared to traditional belt and electric fan drive systems. Advantages include precise control of coolant temperature, fan



speed independent of engine speed, on-demand cooling capability for reduced power consumption, reduced noise, lower emissions, and enhanced flexibility in cooling system design. The drive offers systems with integrated valves, onboard application-specific integrated circuits, and CAN bus interface. Fan system power range is from static to 150 kW output, and speed range is from 0 to 11,000 rpm.

For more information, circle 59

Hydraulic proportional valve

Type PSL/PSV proportional spool valves from **HAWE Hydraulics** include a size two that is scaled down 25% and features the same functionality



as larger models. The delivery flow is 3 to 60 L/min (0.1 to 2.1 ft³/min), with a maximum operating pressure of 420 bar (6091 psi). Its compact design takes up less space in the hydraulic system and reduces component weight. Combinations of both manual and electrohydraulic actuators are available. The option of controlling this valve via wireless and cable remote control has advantages such as enabling the operator of a truck-mounted crane to control the movement from a position where the loading process can be observed easily.

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Planetary gear drive

When developing its planetary drives, the hydraulics technology group of **Bosch Rexroth** included taper roller bearings to accept large external loads, cylindrical roller bearings in each planetary gear, case-hardened planetary gears, and surface-hardened ring gear. Gear



geometry is based on computer calculations to ensure optimal life. Bosch Rexroth's GFT planetary drive is offered in sizes based on nominal output torque ratings. Standard product range includes output torque ratings from 5160 lb-ft (7000 N·m) to 295,000 lb-ft (400,000 N·m). For larger applications, custom drives are available in sizes up to 1,100,000 lb-ft (1,500,000 N·m).

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on the hose and the boss on the fitting. A hexagon construction allows use of a wrench during installation and helps pre-

vent hose damage that can occur by torquing the hose during installation. The fittings are suitable for use in corrosive environments for chemical or water transfer applications as well as for high-temperature atmospheres in low- and medium-pressure hydraulics. The fittings can also be used to transfer gas and liquid in cryogenic systems.

For more information, circle 64

Adjustable port stud

An adjustable port stud from **Parker Hannifin's** Tube Fittings Division provides easier field assembly while eliminating the potential for damage to the backup washer, which can lead to leaks. The device features a longer locknut that covers the threads and provides more gripping area for locknut tightening. Interchangeable with current **SAE** adjustable connectors, the Robust Port Stud also features a three-step assembly and requires no retrofitting of parts.



For more information, circle 62

Compact motors

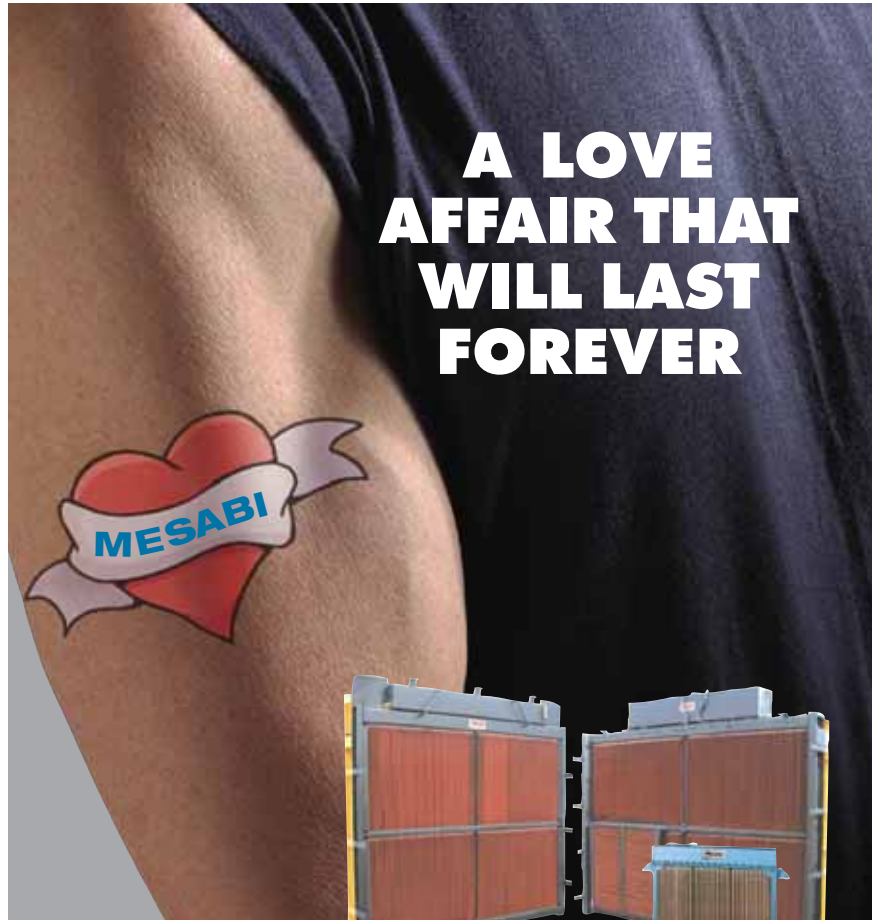
The MK12 and MKE12 compact motors from **Poclair Hydraulics** have displacements of 627 to 1356 cm³ (38.2 to 82.7 in³) and feature higher bearing capacity to accommodate a trend in asphalt compaction vehicles toward increased vibration force and direct mounting on the drum without the use of vibration isolators. The motors come with a hollow-shaft option to allow simplified same-side mounting of the vibration motor, and the MK09 is offered with customizable adaptor plates for chassis and drum mounting.



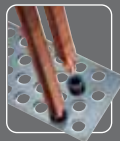
For more information, circle 63

Hose fittings

A weld-on hose fitting line from **Brennan Industries** features an airtight connection created by welding the tapered end of the fitting to the hose. Space between the tapered end and the hose builds up a weld bead of filler material between the end cap



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Hydraulic caliper brakes

The modular hydraulic caliper by **Ausco Products** gives design engineers more flexibility in configuration and mounting for off-highway vehicles. The brake is offered in either fixed-mount, dual opposed piston design; or floating-mount, single-piston design. Neither design requires a separate mounting bracket, and the designs can be bolted directly to the vehicle



frame or to mating components. No modification or disassembly of the brake is required for mounting. Both brakes feature a self-retracting seal, which ensures positive piston retraction, long life, and drag-free operation. Above-bridge mounting of the stator pads allows the brake to mount to any rotor that is 8 in (203 mm) in diameter or greater.

For more information, circle 65

Load-sensing valves

AMCA and **Nordhydraulic** have entered into a joint-venture agreement with focus on the Chinese market. The Advanced Proportional Valve-16 is the first result of this collaboration. The valve's control section is standardized, and all options and variants are integrated in cost-effective



connection blocks for mounting on top of the control sections and/or to the inlet and/or the endplate of the stacked valve. The spring- and end-caps are configured such that changing cartridges results in changing control method, without dismounting the complete valveblock from the equipment. Options include an anti-saturation function, LS-amplifier for pump control, and compensator with damping function.

For more information, circle 66

High-pressure hydraulic filters

The ALH series of high-pressure bypass filters from **EP NTZ Micro Filtration** eliminates a high level of particles most likely to cause damage to hydraulic systems. The filters use bypass filtration and a micro depth filter element to achieve optimal system cleanliness in systems using a maximum pressure of 210 bar (3046 psi). In bypass filtration, an average of 1 to 2 L/min (0.035 to 0.071 ft³/min) of fluid, vs.



10 to 20 L/min (0.35 to 0.71 ft³/min) in a full-flow filter, passes through the filter. The specially designed manifold incorporates a compensating valve that allows for a low flow rate with no pressure drop in the original system. This allows the filter to be much more restrictive. In addition, the radial micro depth filtration is effective at capturing 99.96% of particles 2 µm (79 µin) and larger, along with absorbing water or water-linked acids.

For more information, circle 67

Axial piston pump

The variable displacement axial piston pump type V60N from **HAWE Hydraulik** is intended for open-circuit operation in mobile hydraulics. It works according to the swash-plate principle, where the delivery flow can be varied by the angle of the swash plate. The pump features a good



performance:weight ratio, rugged construction, high self-priming rate, and low noise level. It is designed for direct mounting at the auxiliary drive of commercial vehicles as well as for standard mounting via a **SAE-C** flange.

For more information, circle 68

Hydraulic supercharger

Kapich Engineering's hydraulic superchargers are low-cost and mass-producible. Zero maintenance is required, and the system's life exceeds that of an average turbocharger. Turbine hydraulic efficiency is greater than 80%.



Turbine speed and power are matched to a wide range of commercial turbocharger compressors. Hydraulic pressure and flow are matched to commercial hydraulic gear pumps with greater than 90% efficiency. The 20-mm (0.79-in) KE6 production turbine is rated 75,000 rpm at 20 hp (14.9 kW); the 25-mm (0.98-in) KE10 turbine is rated 60,000 rpm at 30 hp (22.38 kW).

For more information, circle 69

Port fitting system

The Uniport 10K Port/Fitting System from **Fluid Line Products** provides protection against fluid leakage in high-pressure hydraulic systems associated with diesel fuel injection. The double seal, metal-to-metal cone seal, and radial O-ring seal offer in-

creased reliability and security against a potential leak. Zero gap realized by cold deformation of the bottom of the cone prevents the O-ring from extruding at any pressure. The swivel nut allows for selected positioning, closer ports, and smaller component size.

For more information, circle 70

Pressure transmitter

WIKA Instrument's Type MH-2 pressure transmitter offers pressure ranges of 400 to 8000 psi (27.58 to 55,158 kPa) to meet standard mobile hydraulic applications. The unit offers shock and vibration resistance per IEC 68-2 and ingress protection per IP67 to IP69K (steam jet protection). Additional features include a hermetically welded thin-film measuring cell to ensure long-term leak tightness and eliminate the need for additional sealing elements. Made of



stainless steel using sputtering technology, the measuring cell provides long-term stability under dynamic load changes.

For more information, circle 71

Pressure gauge

Ashcroft Type 3005 pressure gauges from **Dresser Instruments** stand up to the shock, vibration, and pulsation that fluid power installations are subjected to. Its PowerFlex movement and optional



FlutterGuard protection enable the unit to provide dependable performance. The 2.5-in (63-mm) gauges come in dry or liquid filled with either stainless steel or ABS plastic case. Ranges are available from vacuum to 15,000 psi (103,000 kPa) and can be either panel or stem mounted.

For more information, circle 72



Compact, yet powerful earthmover.



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Tractor hydraulic fluid

TRANSGARD tractor hydraulic fluid from **Citgo** is a multifunctional transmission hydraulic fluid that provides a reliable medium for the correct drive gear friction, and heat transfer for proper operation of wet brakes, wet clutches, and power takeoff units. It contains a blend of select base stock oils to ensure dependable protection of seals and gaskets. The fluid provides extreme pressure characteristics, minimizes brake chatter, and offers favorable transmission anti-wear performance for power units requiring **Allison C-3**, **Caterpillar TO-2**, and **John Deere J20C**.

For more information, circle 73

Hydraulic pumps

Two pump sizes have been added to the PVM line of medium-duty axial piston hydraulic pumps from **Oilgear** for mobile and industrial applications. The PVM-065 offers a theoretical maximum displacement



of 3.96 in³/rev (65 cm³/rev), and the PVM-075 provides 4.58 in³/rev (75 cm³/rev). Both pumps offer a maximum peak pressure of 4250 psi (293 bar). Available control options include pressure compensation, adjustable or fixed load sense, and electrohydraulic proportional pressure compensation.

For more information, circle 74

Pressure-reducing valves

Thomas Magnete's next-generation proportional pressure-reducing valve is suited to electrohydraulic valve designs for mobile and automotive hydraulic applications. It provides proportional pressures, fast response, minimal electrical power, and compact design. Thomas



Magnete's high-flow proportional pressure-reducing valve contains the pilot stage in the solenoid and the main stage as a cartridge. This design, which provides higher flow in a small package, is used for shift transmissions, large clutches and brakes, and hydraulic valve and pump control.

For more information, circle 75

Hydraulic seals

Simrit's 92AU21100 polyurethane material for hydraulic sealing applications protects against temperatures as low as -50°C (-58°F) and water degradation. Sealing begins immediately when the application is turned on, resulting in no starting leakage. Compared to conventional polyurethane materials, the material softens less at temperatures of 120 to



140°C (248 to 284°F), thus providing superior high-temperature capabilities. The firm also offers Disogrin 7695, used for fluid power seals, which is resistant to water up to 250°F (121°C)—making it an alternative to chloroprene and ethylene propylene rubbers. It is resistant to acidic and basic solutions (pH 2 to 13) up to 220°F (104°C). It is also compatible with both water- and vegetable-based hydraulic fluids.

For more information, circle 76

Piston pump

The 420 Series Piston Pump from **Eaton** supplies hydraulic power for applications that require pressure-limiting and load-sensing controls for both primary and auxiliary circuits. The series benefits off-highway machines due to their compact



size, lower power consumption at standby, and high-pressure capability. The units are open-circuit, axial-piston designs. Applications include loader backhoes, dump truck lifts and agricultural tractors, railroad equipment, mining machinery, log loaders, and crawler dozers.

For more information, circle 77

Mobile hydraulic position sensors

MTS Sensors' mobile hydraulic position sensors provide users with an enhanced version of the company's MH sensor. Solutions will also be included for smaller-diameter cylinders (less than 1.5 in/38 mm) and a sensor for applications requiring extended performance and features,



such as programmable velocity outputs. The MH sensor, designed for 2-in (50-mm) diameter cylinders or larger, provides a measuring range of 2 to 78 in (50 to 2000 mm), doubling the stroke length. It provides three position output options: 0 to 5 V, 4 to 20 mA, or PWM (16 recirculations). The M-Series family is designed for embedded application within hydraulic cylinders.

For more information, circle 78

Hydraulic system solutions

Sauer-Danfoss' H1 servo-controlled hydrostatic pumps, PVG 100 electrohydraulic proportional valves, and the PLUS 1 electronic communications network provide connectivity and performance enhancements for mobile machinery. H1 products are compatible with PLUS 1

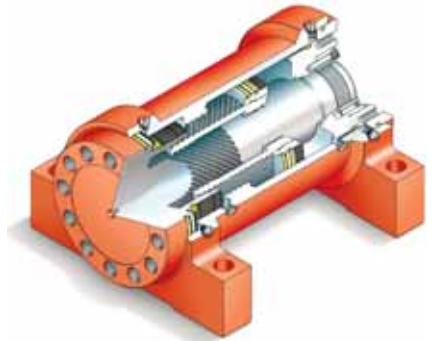


microcontrollers. H1 is suited for medium- and high-power mobile markets in industries including construction, agriculture, materials handling, and forestry. Initial products are single-pump devices with displacements of 147 cm³/rev (9 in³/rev) and 165 cm³/rev (10.1 in³/rev), followed by 78-cm³/rev (4.8-in³/rev), 45-cm³/rev (2.7-in³/rev), and 53-cm³/rev (3.2-in³/rev) devices. The 45- and 53-cm³/rev devices are available in both single and tandem pump configurations. The company's PVG 100 valve is designed as a smart valve and performs in open-circuit applications that require maximum control. PLUS 1 uses digital signal processing and CAN communication to enable OEMs and end users to customize mobile machinery control. Its foundation is a microcontroller and I/O modules, along with joysticks and graphical terminals.

For more information, circle 79

Rotary actuators

The L30 Series helical hydraulic rotary actuators from **Helac** feature large, integral bearings that support heavy radial, moment, and thrust loads without the need for additional, external bearings. An innovative sliding gear distributes loads equally and offers improved resilience to



shock loads. Exclusion seals minimize ingress of contaminants, while grease ports enable contaminants to be flushed from bearings. The actuators are available in 10 sizes with torque output ranging from 1415 to 61,660 lb·ft (1920 to 83,600 N·m) at 3000 psi (207 bar). A wide variety of standard mounting options are available.

For more information, circle 80

Tube fittings

Brennan Industries' line of double-ferrule instrumentation-grade tube fittings promise to provide leak-proof and torque-free seals at all tubing connections. When installed, the nut, back ferrule, front ferrule, and the body become a five-piece connection with the addition of the tubing providing a leak-free joint. The line reduces the



risk of hazardous leaks in instrumentation, process, pneumatic, hydraulic, gas, and other tubing systems. Resistant to temperature change, the fittings do not reduce flow area and work with a variety of tube materials. They can be remade several times and can withstand heavy impulse and vibration in both vacuum and pressure systems.

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