

No. 24/2020

FLASH



Corporate Social Responsibility at ARGO-HYTOS India
Smart L.E.A.F - Final Spurt for the Digital Factory
EXAPOR[®]MAX 3: Innovation in Filtration

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Dear Reader,

After three quite successful years, the year 2020 began for the hydraulics industry under difficult conditions. The German Fluid Power Association predicted -5% in growth and many industry peers were even more pessimistic. But then Covid-19 entered our business environment and destroyed all the projections and plans we had for 2020. Since then, we have been running our companies „on sight“ from month to month.

Nevertheless, I am optimistic about the future, because our main customers in the agricultural and construction machinery sector see their development as quite positive after Corona and are recovering relatively quickly, even if a clear outlook for 2021/22 is difficult. On the other side, we have a full project pipeline and ARGO-HYTOS can benefit from its international set-up to compensate for the different developments in the various countries. We can proof our reliability in supply and availability to support our customers worldwide in improving their products through integrated system solutions from ARGO-HYTOS. This is one of the reasons why ARGO-HYTOS was awarded the highest Supplier's Partner status by the AGCO Group.

2020 will also be an important year for ARGO-HYTOS, since we will open our new digital production facility at our German location at Kraichtal-Menzingen. A commitment to our German high-tech location and an investment to expand our core competence in filter elements.

The introduction of the new and patented filter element generation EXAPOR®MAX 3 represents another major step towards a more efficient filter element with a significantly higher dirt holding capacity and lower differential pressure. For details, please see our article about this innovation.

Please also read the article about our sensor innovations, which leads you directly to our products for preventive maintenance; a topic that is attracting increasing interest from our customers. For this reason, the VDMA and the Hannover Messe will create a new space especially for this topic during the Hannover Messe 2021! Visit us at the special area for digital solutions in hydraulics in the VDMA Forum. With new sensor ideas combining different sensor technologies in one sensor, we also open the discussion about new trends in the hydraulics industry!

ARGO-HYTOS in the USA successfully participated in the Conexpo 2020 in Las Vegas, the world's second largest trade fair for construction machinery, to present our products to our customers in this industry. It was the last major trade show before the lockdown.

I hope this Flash - issue no. 24 - is informative and entertaining for you, because we would also like to use this format to inform you a little about our corporate culture and activities in addition to our daily business. Enjoy reading about our Corporate Social Responsibility activities at our plant in India and an interview with one of our employees in China!

Visit us in December at the WindEnergy trade fair in Hamburg, get more information on our website or simply drop by at one of our companies worldwide!

A handwritten signature in black ink, appearing to read 'Christian H. Kienzle', written in a cursive style.

Christian H. Kienzle
CEO ARGO-HYTOS Group

With Smart L.E.A.F. into the future



With the ground-breaking ceremony in May 2019 and the completion of the filter element factory in summer 2020 as an extension of the Kraichtal site, ARGO-HYTOS has reached a milestone in the digitization of its own value chain.

In 2019 we already gave you an insight into the extension building, the digital filter element factory "Smart L.E.A.F.".

We are pleased to announce in this Flash issue that the construction measures were completed on 30.04.2020.

After eleven months of construction, which is on schedule and on budget, the installation of the operating equipment can now begin before the official move-in is planned for August 2020.

Until then, in addition to the storage technology and various other operating equipment, the hardware for the digitalization of the production processes will also be installed and the new processes will be tested. Smart L.E.A.F. stands for lean, digital processes for the production of filter elements.

"The Smart L.E.A.F. filter element factory is an essential component of an overall concept for the further development and digitization of the Kraichtal-Menzingen site, and is the prime example of a digital factory for the entire ARGO-HYTOS Group", says Dr. Marcus Fischer, COO of the ARGO-HYTOS Group.

Not only the interior of the filter element factory is efficient, but also the building itself. Reversible air-to-water heat pumps are used to control the temperature of the halls and rooms, which, supplemented by a modern ventilation system with heat recovery, ensure a good climate in the long term. The energy concept is rounded off with a thermal sandwich wall facade for the building insulation.

These are not yet the only interesting facts about the construction:

- The building covers an area of approx. 3,850 m² ...
- ... and created approximately 3,940 square meters of net floor space.
- For the foundation, 591 vibratory tamping columns were erected, ...
- ... as well as 1,775 m drill lengths for the bored piles.
- A total of 3,500 m³ of earth was moved.
- 598 m³ of concrete were placed for the hall floor alone.
- 52 tons of steel construction trusses were used for the supporting structure.
- 23,560 m of cables & wires were laid in and around the building.



Benjamin Faulhaber,
Production Process
Technology &
Project Manager Smart
L.E.A.F.

"With smart processes, we will digitalize the value chain of the filter element factory and thus increase our efficiency and open up new exciting fields of activity."

**YOU CAN STILL
FOLLOW THE CURRENT PROJECT
PROGRESS DIGITALLY, SIMPLY SCAN
OUR SMART L.E.A.F. LOGO**



Smart L.E.A.F.
Lean Element Assembly Factory

AGCO grants “Partner Status” to ARGO-HYTOS



AGCO and ARGO-HYTOS have enjoyed a long-standing and professional partnership.

AGCO (Allis-Gleaner Corporation) is a global manufacturer of agricultural machinery with headquarters in Duluth (Georgia, USA). AGCO combines the brands Challenger, Fendt, Massey Ferguson and Valtra.

AGCO currently has approximately 3’700 suppliers. As part of the “virtual AGCO Supplier Day” (attended by over 500 suppliers), AGCO awarded ARGO-HYTOS “Partner Status” on May 14, 2020 as one of only ten suppliers. This is the highest level a supplier can achieve in the AGCO Supplier Model.

The requirements a supplier must meet to be included in this elite group of suppliers are:

- Recognizes AGCO as a top customer
- Provides leading innovation
- Serves as a world-class benchmark
- Global growth
- Joint innovation

The trust placed in us is a great incentive for us to continue to work in partnership with AGCO in the future in order to meet the high quality and innovation standards of the group of companies.

Special thanks go to the entire ARGO-HYTOS team. Exceptional dedication and commitment to high customer satisfaction have made this award possible. We would also like to express our greatest thanks to our long-standing partner AGCO.

We are very pleased about this status, which also illustrates the successful cooperation between the employees of our two companies.



Thomas Langer,
Global Key Account
Manager

„Because of the high demands that AGCO places on us, we are constantly developing in all areas.“



Social Responsibility



As part of our Corporate Social Responsibility Initiative - after exploring a number of options - we finally decided to focus our efforts on the area of "Safety" and "Education".



Shrikant Shankardas Bairagi,
Managing Director India

As the honorable late Mr. Nelson Mandela once said: "Education is the most powerful weapon with which one can change the world."

Why should we not start by creating a better learning environment for disadvantaged children? With this in mind, we decided to "adopt" a state primary school, Sandegoundenpalayam, which is located near our Coimbatore plant.

To date we have carried out various activities in this school such as:

- Distribution of school uniforms, bags, shoes, water bottles, ties etc. to each student
- Recognition of academic excellence by awarding certificates and medals
- Repair and maintenance of roofs & buildings
- Design, development and production of a project storyboard to present the students' project work
- Inauguration of the "Smart Classroom" (digital classroom)

At every event, a smile is seen on the lips of every child. This joy is invaluable. A number of other activities are already being planned with the aim of improving the school environment and providing students with a supportive and participative learning atmosphere.

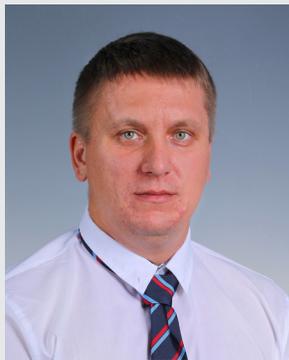
ARGO-HYTOS would like to thank all employees and partners for their efforts, support and encouragement in this project.

System Solutions

Creating added value with sophisticated solutions



„As a system supplier, you must have the know-how, components and human potential to provide the required support. Not only until the contract is signed, but also for subsequent service.“



Maksym Sukovach,
 Product Manager
 FMC Systems

“I am your direct contact for questions regarding hydropneumatic suspension system and hydraulic system solutions in Central Europe and the Eastern markets.”

The technical standards for machines in commercial vehicles and in industrial applications today place high demands on the qualification of development personnel. Customers usually do not have experts for every technology used in their machines. Therefore, they are not prepared to buy simple components that solve the mechanical, hydraulic, pneumatic and electronic problems. Today's companies focus on what they call "core business" - the process or know-how in which their specialization takes place. Customers are interested in buying and implementing systems where the majority of the problems are already solved by the system supplier.

In these situations, the customer is not really looking for suppliers, but rather for a system partner. The delivery of a subsystem is not only the sale of a product, but also the provision of pre- and post-sales service including the commissioning of the machine. The supplier is expected to be able to support the design and test team during the prototype phase of the new machine.

In order to be able to be on the market quickly, maintain a reasonable price level and achieve quick results when testing prototypes, it is possible to have pre-developed components that are commonly used in specific application areas and to place them as prototypes or even as series products. A good example of this approach is the **MHPS** or **MSC** system.

Take a closer look at these systems in detail on the following page.



Modular Hydro-Pneumatic Suspension

Hydro pneumatic systems generally improve the comfort and productivity of vehicles by insulating the vehicle's chassis and cab. This protects the driver and equipment from unwanted vibrations caused by uneven terrain. The Health and Safety Directive 2002/44/EU strictly limits the permissible daily vibration exposure of the driver. Especially when working off-road, the use of our hydro pneumatic suspension system extends the possible working time and the working comfort of the driver. The driver is more relaxed and can therefore complete the work process faster, safer and more precisely. Higher productivity and extended machine life are further significant advantages.

The **MHPS** system has proven itself on the market and is used on various mobile machines in agriculture (sprayers, tractors) and in transport vehicles (tunnel transport vehicles). It consists of:

- hydraulic standard manifolds
- accumulators
- an Electronic Control Unit (ECU) and parameter setting display
- a set of sensors



Midspec Suspension Control System

In the final phase of development, ARGO-HYTOS will launch a new suspension system: the **Midspec Suspension Control System** for applications where only basic level and damping controls are required.

The **MSC** system is mainly used in applications where there is no demand for proportional height control. Many applications request only a basic ON/OFF levelling, no advanced real-time setting of the suspension parameters. In addition, there is strong demand for easy implementation and setup.

The **MSC** system also brings improvements in mobile vehicle communication and helps application engineers and customers to implement the system faster.

We are now in the final phase of system testing in the field and will bring first industrial test versions to market in a few months.

Innovation in Filtration

EXAPOR®MAX 3 - Filter performance redefined



Steffen Kemmling,
Head of product portfolio
and project management
for filter systems

“The use of EXAPOR®MAX 3 saves about 50 kWh of energy per year for an average machine*.”

* ... Volume flow 150 l/min through the hydraulic filter, operating hours 1,000 h/year.

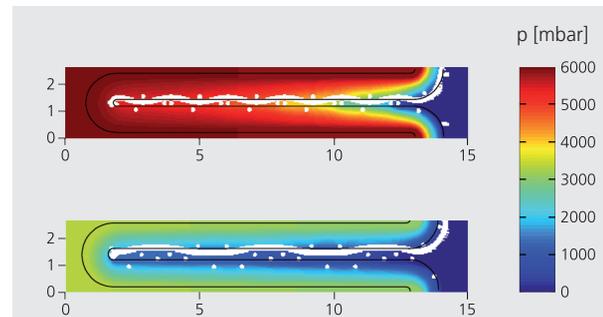
As one of the world’s leading manufacturers of innovative solutions for the hydraulics industry, ARGO-HYTOS not only needs intensive contact with key customers and partners, but also knowledge of the physical and technical possibilities. Demands for ever higher machine availability, longer maintenance intervals, more favorable spare parts and lower operating costs are always present in mobile and industrial hydraulics and were therefore once again a motivation for the development of the new EXAPOR®MAX 3 filter element generation, the introduction of which is now starting in summer 2020.

Filter performance in a new dimension

In order to improve the performance density of the filters, it is necessary not only to increase the dirt capacity but also to reduce the pressure drop. Calculations have shown that the specific flow resistance depends on the filter materials used and on the structure and depth of the spaces between the pleats, the so-called pleat channels.

The deeper a pleat channel is, the greater the specific flow resistance in the pleat. The reason for this is that the hydraulic medium cannot flow freely through the pleat channel.

EXAPOR®MAX 3 continues to use the hybrid support fabric made of synthetic and stainless steel wires, which is produced using a special weaving technique. It ensures that the pleat channels are optimally kept open. The pressure loss in a pleat can thus be reduced by up to 50%.



Pressure drop simulation of single pleats

Above: Conventional steel mesh

Below: Hybrid support fabric with optimized weave

The knowledge gained from flow simulations was impressively put into practice and confirmed by numerous experiments. Simulations thus made a significant contribution to quickly optimizing the pleated channel and, in addition, the pressure drop in the pleated filter material for the entire ARGO-HYTOS product portfolio.

The pressure loss of the filter elements could be reduced by up to 20% compared to EXAPOR®MAX 2. Conversely, this means that with EXAPOR®MAX 3 filter elements, an approx. 25% higher volume flow can be achieved without exceeding the previous pressure loss.

In future, smaller filter sizes can be used in the design of hydraulic systems depending on the application, thus saving weight, resources and costs.

In existing systems, reducing the pressure drop means that the bypass valve is opened less frequently and for a shorter time to protect the filter elements. As a result, fewer particles get through the bypass to the clean oil side and the risk of malfunctions caused by unfiltered oil is significantly reduced.

For the performance-optimized structure of the new filter material of the EXAPOR®MAX 3 filter elements, nonwovens with a multi-phase structure are used for the first time. These are characterized by a multiple gradation of the fineness in the filter bellows structure. Since this is no longer limited by the number of material layers, premature blocking of individual layers is prevented and a more uniform and, above all, better utilization of all nonwovens is achieved. This new, precise adjustment of the filter material leads in practice to a greatly improved dirt holding capacity and, in conjunction with this, to longer service lives. The dirt-holding capacity and thus the service life has been increased by up to 15%.

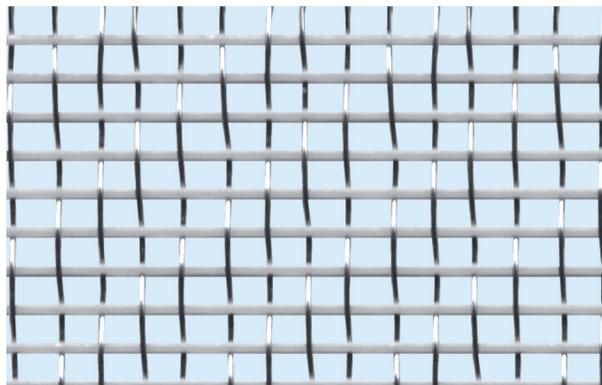


Multiphase glass fiber filter media

Depending on the application, filter elements are exposed to strong bending stresses due to volume flow fluctuations. This is caused by speed fluctuations of drive motors, cylinder ratios, e.g. in excavators, and by the use of regulating pumps in modern machines. Due to the volume flow fluctuations, differential pressure changes occur at the filter element, which lead to the so-called flexural fatigue stress.

Conventional filter elements have a supporting fabric made of metal or plastic on the downstream or clean oil side. Metal threads offer the advantage of high tensile strength and electrical conductivity, but have a tendency to fatigue fracture, especially in connection with long maintenance intervals. Functional failures due to loose wire pieces in the hydraulic medium are often the result. This is where the strengths of synthetic fabrics lie, whose threads are insensitive to alternating bending stresses, but have the disadvantage of extremely low tensile strength and electrical conductivity.

To counteract these material-specific disadvantages, ARGO-HYTOS relies on the specially developed and patented hybrid fabric, which combines all the advantages of metal and plastic fabrics by blending stainless steel and polyester threads and completely eliminates the disadvantages of pure metal or plastic fabrics.



Hybrid fabric (patented)

The longitudinally arranged stainless steel threads can absorb the forces generated by filtration or differential pressures and dissipate electrostatic charges, effectively preventing damage to the filter material and the associated deterioration in oil cleanliness. The polyester threads arranged transversely to the metal threads ensure optimum flexural fatigue strength and prevent fatigue fractures.

EXAPOR[®]

Spark Protect

EXAPOR[®] SPARK PROTECT is suitable:

- for hydraulic oils with low electrical conductivity (< 500 pS/m at 20 °C)
- to avoid electrical discharges in the filter element

In order to achieve an even lower charge of the filter element and the hydraulic medium, EXAPOR[®]MAX 3 is optionally also available in the Spark Protect version. Without changing the installation space and performance data, ideal electrostatic properties are thus combined with outstanding filter performance. The unprecedented flow fatigue properties, differential pressure stability and the dissipation of electrostatic charges contribute significantly to the long service life of the filter elements.

Individual printing of the protective cover

EXAPOR[®]MAX 3 filter elements are produced exclusively in Germany. At the Menzingen plant, ARGO-HYTOS has the expertise to carry out the special plant construction of core technologies in-house, to bring future technologies in the field of production to series maturity and thus to enable unique product solutions.

One example of this is the EXAPOR[®]MAX 3 protective cover, which is glued around the filter elements on a newly designed system and printed in parallel using four-color printing.

The commissioning of this new system and the introduction of EXAPOR[®]MAX 3 into series production takes place in the digital factory, also known as the "Smart Lean Element Assembly Factory" (Smart-LEAF). These new premises allow the sophisticated production methods to be optimally networked with the digital possibilities.

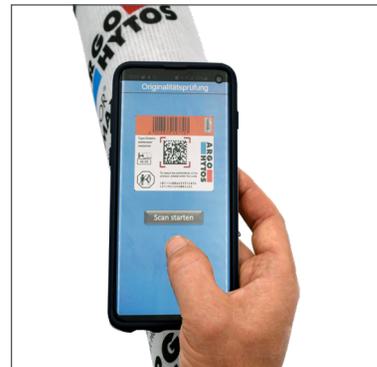
In future, all EXAPOR[®]MAX 3 filter elements will be equipped with the new protective cover for visual enhancement, which underlines the quality of the products and significantly increases their recognition value. Originals can then be easily distinguished from copies, even on the outside.

With the help of the new printing technology, full-surface, colored printing is also possible at any time at the customer's request. In general, almost everything is possible with the new technology and this in very good print quality and color strength. In addition to customer logo and type designation, further product information or, for example, assembly or maintenance instructions can also be printed on the label surface.

Smart filter elements for smart systems

Replica elements of inferior quality are often offered on the market. The introduction of the new premium filter element generation EXAPOR[®]MAX 3 offers a further future-oriented option for identifying such copies: The attachment of a digitally readable product protection feature in the form of a 2D code.

This code enables simple and worldwide online authentication of the original product via smartphone, reducing machine damage caused by counterfeit products as well as image damage or product liability risks. The enforcement of e.g. trademark rights and patents is simplified.



The fully automatic decoding of the code information then shows in a very short time whether it is an original or a replica. Other object-specific information can also be made digitally accessible. Examples are documents that can be helpful for maintenance (maintenance instructions, spare parts lists, ...) up to advertising.

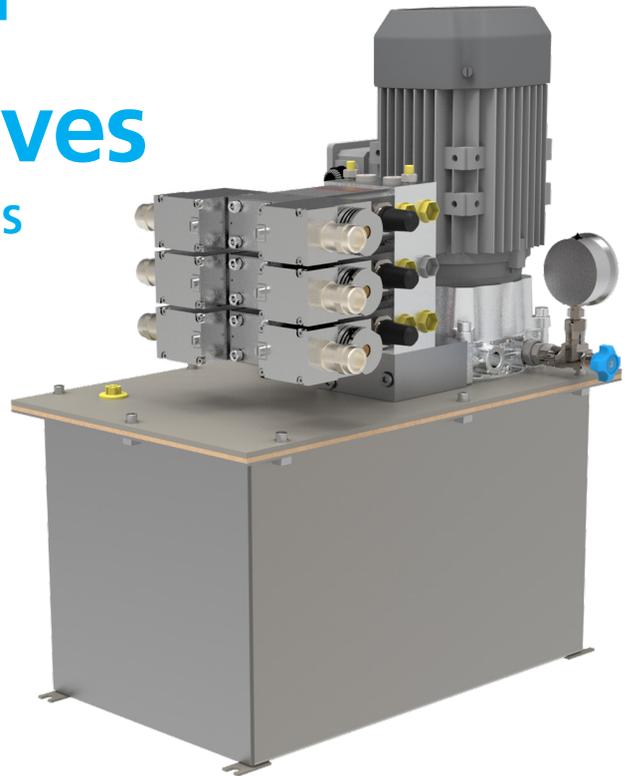
Conclusion of a successful innovative leap

- Increase of the dirt capacity by up to 15%
- Increase of the practice service life in all applications
- Reduction of the pressure loss by up to 20%
- Excellent resistance to flow alternation
- Improved optical appearance
- Flexible four-color printing according to customer requirements
- 3 standard filter finenesses: 5 µm, 10 µm, 16 µm

Newly developed premium filter element generation EXAPOR[®]MAX 3, introduction start: summer 2020

Explosion-proof Proportional Valves

New explosion-proof ARGO-HYTOS
proportional valves with
high IP protection class IP66/68



Zdenek Fronek,
Product Manager

“Sales successes make us happy and bring us other ideas for improvement.”



Jan Vanicek,
Sales Manger

“We don’t like uncontrolled explosions, therefore we developed our Explosion-proof valves!”

In the year 2019, ARGO-HYTOS launched some new explosion-proof proportional valve families to extend the existing range of Ex-proof solenoid-operated directional control valves. The following proportional versions are now available:

- Direct-acting, proportional control valve acc. to ISO 4401, DIN 24340 (CETOP 03) standards
- Direct-acting, proportional control valve, cartridge design for size SAE10, 30 l/min, 350 bar
- Proportional pressure reducers up to 40 l/min, 350 bar

The magnet certifications have been extended to include the higher certification classes IP66/68 and now cover the certifications:

ATEX 94/9/EC certification

- I M2 Ex e mb I Mb
- II 2G Ex e mb IIB T4, T5, T6 Gb
- II 2D Ex tb IIIC T135°C, T100°C, T85°C Db

Worldwide IECEx certification

- Ex e mb I Mb
- Ex e mb IIB T4, T5, T6 Gb
- Ex tb IIIC T135°C, T100°C, T85°C Db

The design of ARGO-HYTOS provides the user with **advantages** through reliable and excellent technology:

- Five-chamber CETOP housing with reduced dependence of hydraulic power on fluid viscosity
- Wide range of interchangeable spools and manual overrides
- Improved surface protection available for the mobile sector (ISO 9227, 520 h salt spray tested)
- Terminal box instead of pig tail cable allows for a variety of connections
- Robust solenoid design (proven impact resistance (mining))
- Integrated overvoltage protection
- AC and DC types with low 10 W and high power 18 W versions
- Ambient temperature up to +70 °C

Application example

The Ex-proof solenoid-operated valves can be used in various areas where there is an increased risk of electromagnetic discharges and the resulting explosion of flammable gases or dust.

The Czech sales team of ARGO-HYTOS, together with the manufacturer of machines and equipment for the pharmaceutical and chemical industry, has implemented several applications in which the proportional valves **PRMX3** have been successfully used. The valve system controls the closures of the centrifuge, as well as the handling or separation of the material from the drum of the device.

Inside the complete power unit assembly there were used:

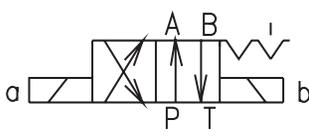
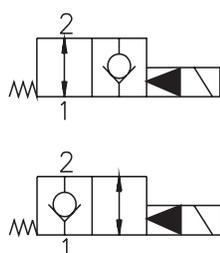
- Proportional directional and pressure relief valves
- Solenoid-operated valves with safety position control

A complete hydraulic unit with three functional sections was equipped and tuned based on customer requirements for precise proportional control of the linear actuators. Thanks to the outstanding hydraulic performance of our Ex-proof proportional valves size NG 06 we achieve extremely high transmitted power in the smallest installation space.

Symbol	Type Code	Size	Flow l/min (GPM) / Pressure bar (PSI)	Product Photo	
Explosion Proof, 4/2 and 4/3, Directional Control Valve - Spool Position Monitoring					
	RPEX3-06*S6 HA 4094	Size 06 (D03)	60 (16) / 350 (5100)		
Explosion Proof, 4/2 and 4/3, Directional Control Valve - Spool Position Monitoring					
	SD2PX-B4 HA 5186	7/8-14 UNF	25 (7) / 250 (3630)		
Explosion Proof Proportional Directional Control Valve					
	PRMX2-06 HA5183	Size 06 (D03)	28 (7.4) / 350 (5100)		
Explosion Proof Proportional Directional Control Valve, Pilot Operated					
	PRMX8-06 HA 5185	Size 06 (D03)	140 (37) / 350 (5100)		
Explosion Proof Proportional Pressure Control Valve, Reducing - Relieving, Direct Acting					
	PVRMX3-103 HA 5184	M24 x 1.5	40 (11) / 90 (1300)		

New Products

Fluid Motion Control

Product Photo	Product Designation	Order Code	Parameter	Symbol
 	4/2 and 4/3 directional control valve, solenoid operated, Lightline	RPEL1-06 HA 4056	Size 06 (D03) Q_{max} 50 l/min (13 GPM) p_{max} 250 bar (3600 PSI)	J15 
    	Explosion-proof 2/2 directional control valve, solenoid operated, poppet type, piloted	SD3EX-C2 HA 4089	1-1/16-12 UN Q_{max} 150 l/min (40 GPM) p_{max} 350 bar (5100 PSI)	

Brand New Sensor: LubCos Guard

Maintenance of mobile and stationary machines is not always easy, as the components to be inspected are often difficult to reach. Often the whole plant has to be shut down to get to the components to be maintained. This leads to production downtimes and thus to high costs. In order to keep these costs as low as possible, components that are difficult to access, such as gears and pumps, are only checked during major maintenance work. The disadvantage of this maintenance method is that any damage that occurs in the meantime is detected late, so that long downtimes and possible consequential damage to other components cannot be avoided.

ARGO-HYTOS has been successfully offering condition sensors for several years to prevent this type of failure. In recent years, customers have had to use two different sensors from ARGO-HYTOS to monitor the above-mentioned pumps and transmissions: the LubCos H₂O+ II condition sensor and the OPCom FerroS wear sensor.



Christopher Schütz,
Sales Engineer Condition Monitoring,
Fluid Management & Electronics

“I am at your disposal as your direct contact person for questions concerning LubCos Guard and Condition Monitoring.”



In the past, there was sufficient installation space for both of these sensors. However, both stationary and mobile hydraulic systems are becoming increasingly compact, which makes it difficult to install two sensors. In order to be able to offer a sensor for monitoring the systems in a compact installation space in the future, ARGO-HYTOS developed and tested a new sensor last year. The new development is called LubCos Guard and is a combination of the LubCos H₂O+ II and the OPCom FerroS.

The combination of the two sensors makes it possible to monitor critical oil parameters such as oil humidity and temperature as well as wear in systems with only one sensor.

In addition to the features mentioned above, the LubCos Guard measures both permittivity (polarity of the oil) and conductivity. This allows oil mixtures and the degradation of additives to be detected.

These two parameters are also used to calculate the remaining service life of the oil in order to extend oil change intervals and to plan downtimes in a targeted manner.

Modular Valve System

The **modular valve system RPEK1-03/B** is a flexible system with a wide range of applications in mobile and stationary machinery. The **RPEK1-03** sectional directional valve in size 03, with a maximum flow of 20 l/min per section is the basic component of the assembly. Thanks to a large number of horizontal and vertical sections, combined with screw-in valves, numerous schematics for open-center circuits can be created.

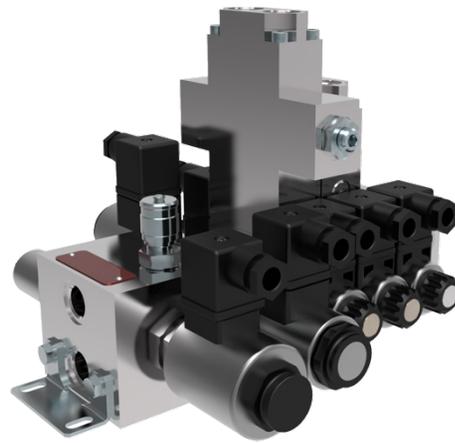
Customers appreciate the flexibility offered by the modular design when developing hydraulic systems, implementing various system modifications or making repeated design changes. Due to the ease of modification and extension, customers save development time and financial expenditure, including labor costs.



Radek Němeček

Product Manager
Fluid Motion Control

“The bankable modular valve assembly is the best solution for all designers who are looking for an optimal configuration of a new hydraulic circuit or need to work with a few design variants.”



The total manifold assembly consists of four sub-sections:

1. The **inlet section** connects the entire manifold assembly to the pressure and tank lines of the hydraulic system. It is possible to realize pressure reduction or an unloading circuit by using 7/8-14 UNF (B2, C-10-2) valves. The inlet plate can be installed at the center of the assembly and the module manifolds with valves can be connected to it on both sides. In this way, up to 16 sections can be connected. The modular **inlet manifold** can be used for operating pressures of up to 250 bar and a total flow rate of 60 l/min. BSPP and SAE industrial standard threads are available for connection to the circuit.
2. **Horizontal sandwich plates** with cavities for any screw-in valve in size 3/4-16 UNF (A2, C-08-2) allow for a wide range of control functions in ports A and B, which lead to the connected actuators. The following valves can be used:
 - Check valves and pilot-operated check valves
 - Flow control valves and flow regulators
 - Pressure control valves
 - Overcenter valves for load motion control
 - Any other solenoid-operated valves for directional control of the flow

3. **Vertical sandwich plates:** Here, we offer throttle valves with bypass check valve, pilot-operated check valves and a number of cover plates with horizontal and vertical ports to connect the actuators to individual sections.
4. The basic sectional directional control valves mentioned above, end plates and end plate valves complete the modular RPEK1-03 assembly.

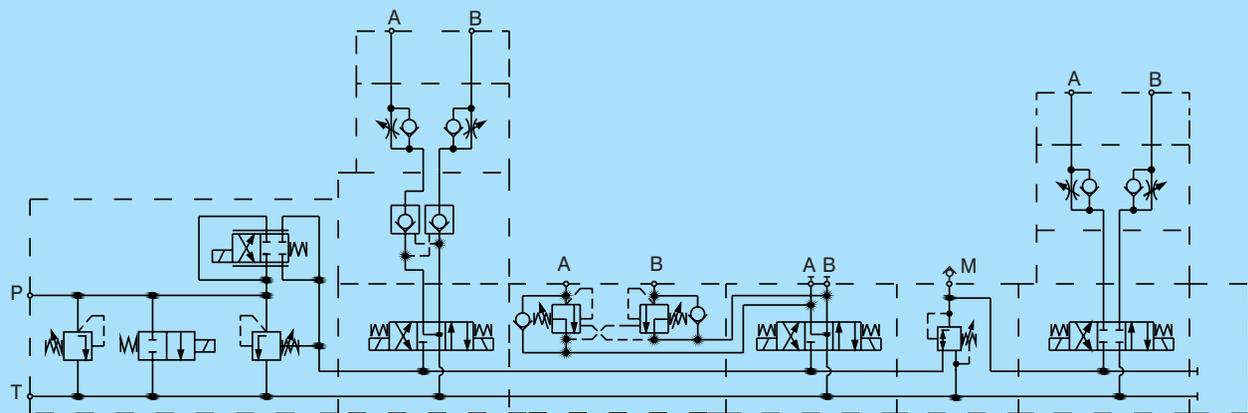
These products are typically used for

- cylinder functions in stationary and mobile systems
- open center auxiliary functions in mobile and stationary machinery (crab steering & blade control)

Advantages & Benefits

- Cost- and space-saving concept
- No in-line body needed
- Can be used separately or in combination with SMA 05 power packs
- Horizontal and vertical plates, cavities for standard screw-in valves
- Available connectors: DIN, AMP, DEUTSCH-DT04-2P

Example of a compact, multi-functional modular manifold assembly for the control of three actuators:



Who is... Angela?



Angela Mi is marketing and sales manager for power units at ARGO-HYTOS China.

We would like to take the opportunity to introduce Angela a little bit more precisely and ask her a few questions:

Angela, since when have you been working at ARGO-HYTOS and what exactly are your tasks?

I became a member of the ARGO-HYTOS team in Beijing, China, in December 2009. First, I worked in the internal sales and customs clearance. In 2014, I moved to the Yangzhou plant as Internal Sales & Marketing Manager. Since 2017 until now, I have been working for the customers service of power packs and in the marketing department.

What was the most incredible moment in your life?

To enjoy all the simple and beautiful things, such as the feeling of having very tasty food when you are hungry.

Which dream has not yet been fulfilled?

Travelling around the world.

What do you like to do outside of the business?

Doing yoga & going on short trips to meet people and enjoy the beautiful landscape.

What is your motto in life?

Life is full of challenges - attitude is everything.

Thank you very much Angela, have a great time, fun and enjoy life the most – in your private life as well as at work.

Our Participation in Exhibitions 2020 at a Glance



SEPEM Grenoble
 11.02.-13.02.2020
 Grenoble,
 France



Conexpo
 10.03.-14.03.2020
 Las Vegas, Nevada,
 USA



PLASTPOL
 06.10.-09.10.2020
 Kielce,
 Poland



IFK Dresden
 12.10.-14.10.2020
 Dresden,
 Germany

MAINTENANCE

Maintenance
 14.10.-15.10.2020
 Krakow,
 Poland



CIAME
 30.10.-01.11.2020
 Qingdao,
 China

bauma CONEXPO INDIA

bauma India
 03.11.-06.11.2020
 New Delhi,
 India

bauma
CHINA

bauma China
 24.11.-27.11.2020
 Shanghai,
 China



Construction Equipment Forum
 30.11.-01.12.2020
 Berlin,
 Germany



WindEnergy Hamburg
 01.12.-04.12w.2020
 Hamburg,
 Germany

Come and visit us.

We are looking forward
 to seeing you.

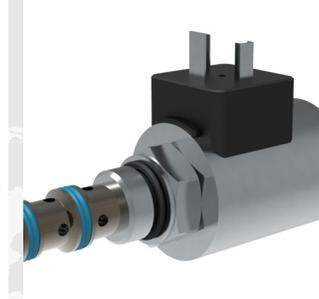
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