

**HYDAC** INTERNATIONAL

— Distributed by —  
**Power**  
ACCESSORIES, INC.

# Company Presentation

**BIERI**  
HYDAC INTERNATIONAL

**MICRO &  
HIGH PRESSURE  
Hydraulic Solutions**





# Overview

**About Us**

| Who is Bieri Hydraulics AG

**Our Strategy**

| Focus on You – Our Customers

**Our Products**

| Five Product Categories

**Our Markets**

| Segments and Applications

**Our Sales Team**

| Tasks and Responsibilities





# Who we are

## About Us

**BIERI**  
HYDAC INTERNATIONAL

**Power**  
ACCESSORIES, INC.

Bieri Hydraulik AG, more than 60 years experience and quality in Hydraulics and since 2011 part of the **HYDAC Group** of companies.



- We are a leading international supplier of hydraulic- and electrohydraulic **solutions** in the field of **Micro and High-Pressure hydraulics**.
- Our **innovative solutions** essentially contribute to the **success of our customers** at their customers.
- We are the competent **solution partner** for any application where **space is limited** and clever solutions are required.
- We are globally always **close to our customers and their applications** by the HYDAC sales and service network, as well as by some selected independent distribution partners.





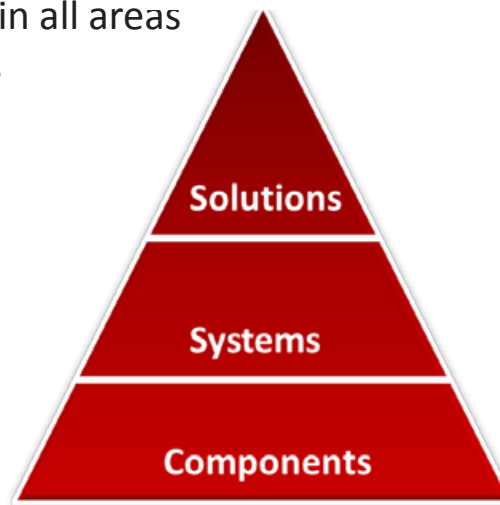
# Where we belong to

## About Hydac Group of Companies

### HYDAC

Your competent partner for all projects requiring fluid technology in connection with hydraulics, electronics a

- HYDAC was founded in 1963 as a company hydraulic accessories and is today an internationally active company group with over 8000 employees, 50 branch offices an 500 trade and service partners world-wide
- HYDAC stands for hydraulics, systems and fluid engineering.
- HYDAC components can be found in all areas of industrial and mobile hydraulics
- HYDAC solutions are based on
  - Competence for systems
  - Flair for innovation
  - Feeling for fluids.



Engineering support /  
Simulation technologies / Project engineering /  
Fluid engineering

Moduls / Manifolds / Accumulator stations /  
Filtration-cooling-systems / Power packs /  
Lubrication systems / Cylinder units

Filters / Hydraulic accumulators / Sensors /  
Valves / Coolers / Heat exchangers / Ball valves /  
Fittings



# Our Strategy

**BIERI**  
HYDAC INTERNATIONAL

**Power**  
ACCESSORIES, INC.

## Focus on You – Our Customers

We put you – our customers – in the focus of everything what we are doing. “Your problem“ is our challenge and the starting point for our activities.

Whenever and wherever you need us, we are prepared for seeking out, finding and implementing solutions for your challenges - from **standard components** to **customized components** and from **subsystems** to complete **systems**. To make your equipment more competitive and getting to market faster, that’s our task and the key to our mutual success.

Our flexibility and our **international network** can help you to reduce system interfaces and to have perfectly functioning solutions.



**Best in Class Solutions**

**From Components to Systems**



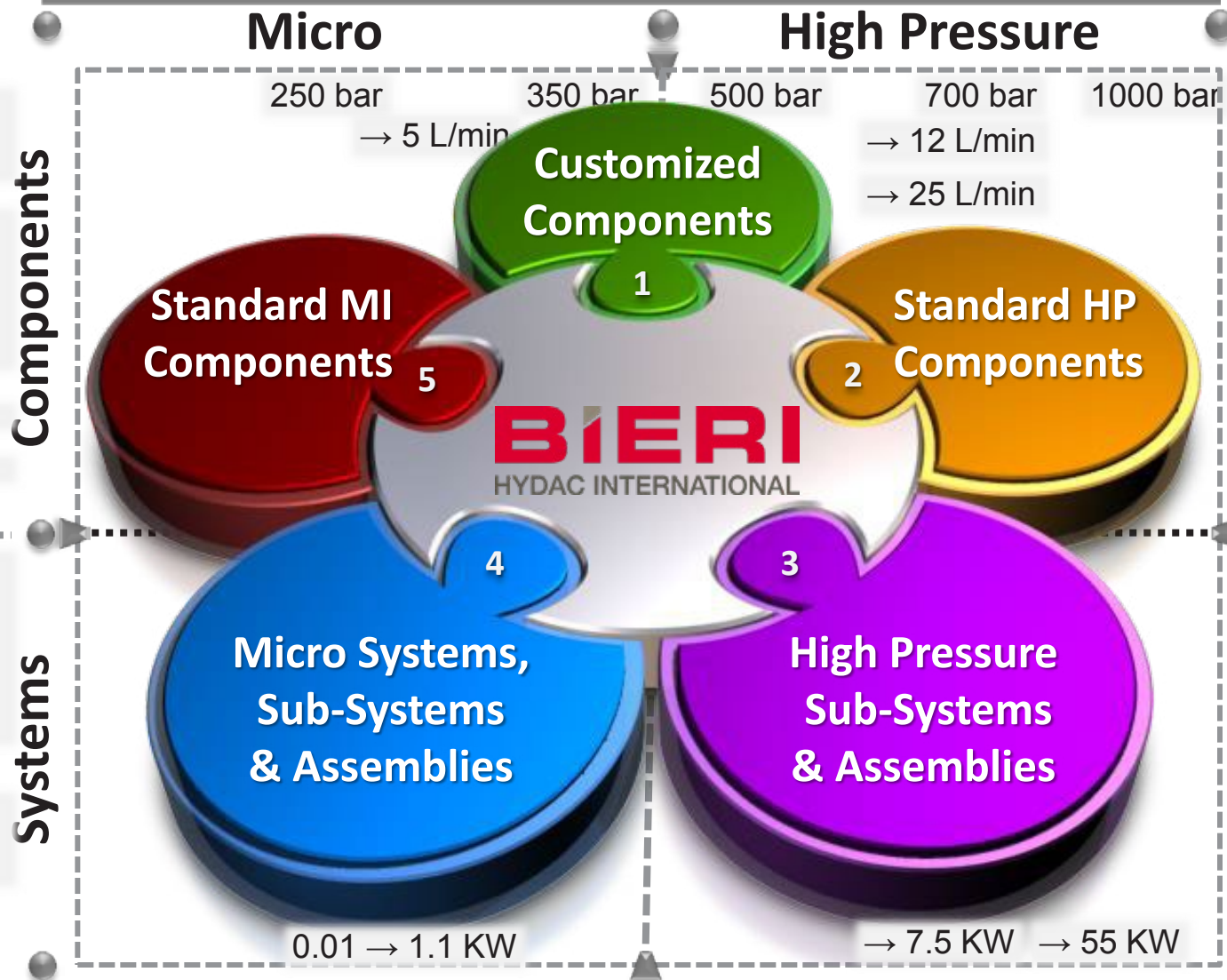
# Our Products

**BIERI**  
HYDAC INTERNATIONAL

**Power**  
ACCESSORIES, INC.

## 5 Best in Class Product Lines

### Hydraulic & Electro-Hydraulic Solutions



#### Pumps

- Micro Axial Piston Pumps
- Radial Piston Pumps

#### Valves

- Directional seat valves
- Pressure valves
- Flow control valves
- Shut-off-valves

#### Pressure switches

#### Oil level switches

#### Sub-Systems

- Motor - Pump
- Motor - Pump - Tank
- Modular Valve Manifolds
- Special Valve Manifolds
- Cylinder Assemblies

#### Systems

- Power Packs
- Connected Sub-Systems

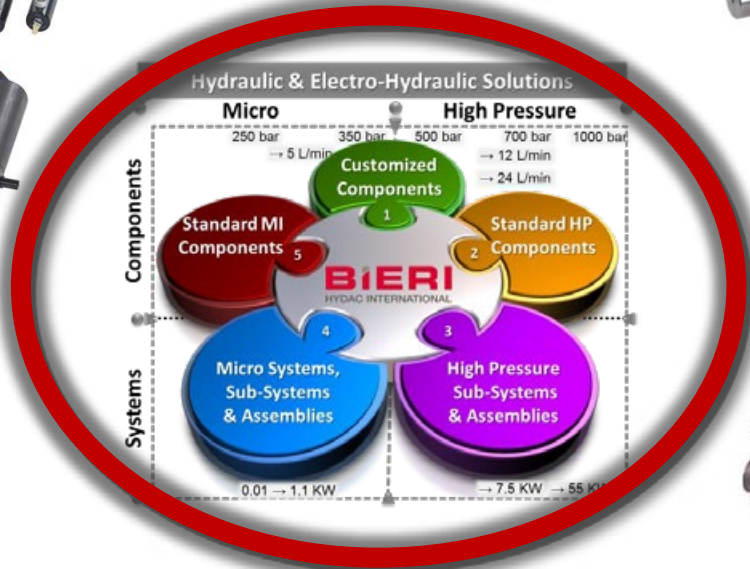
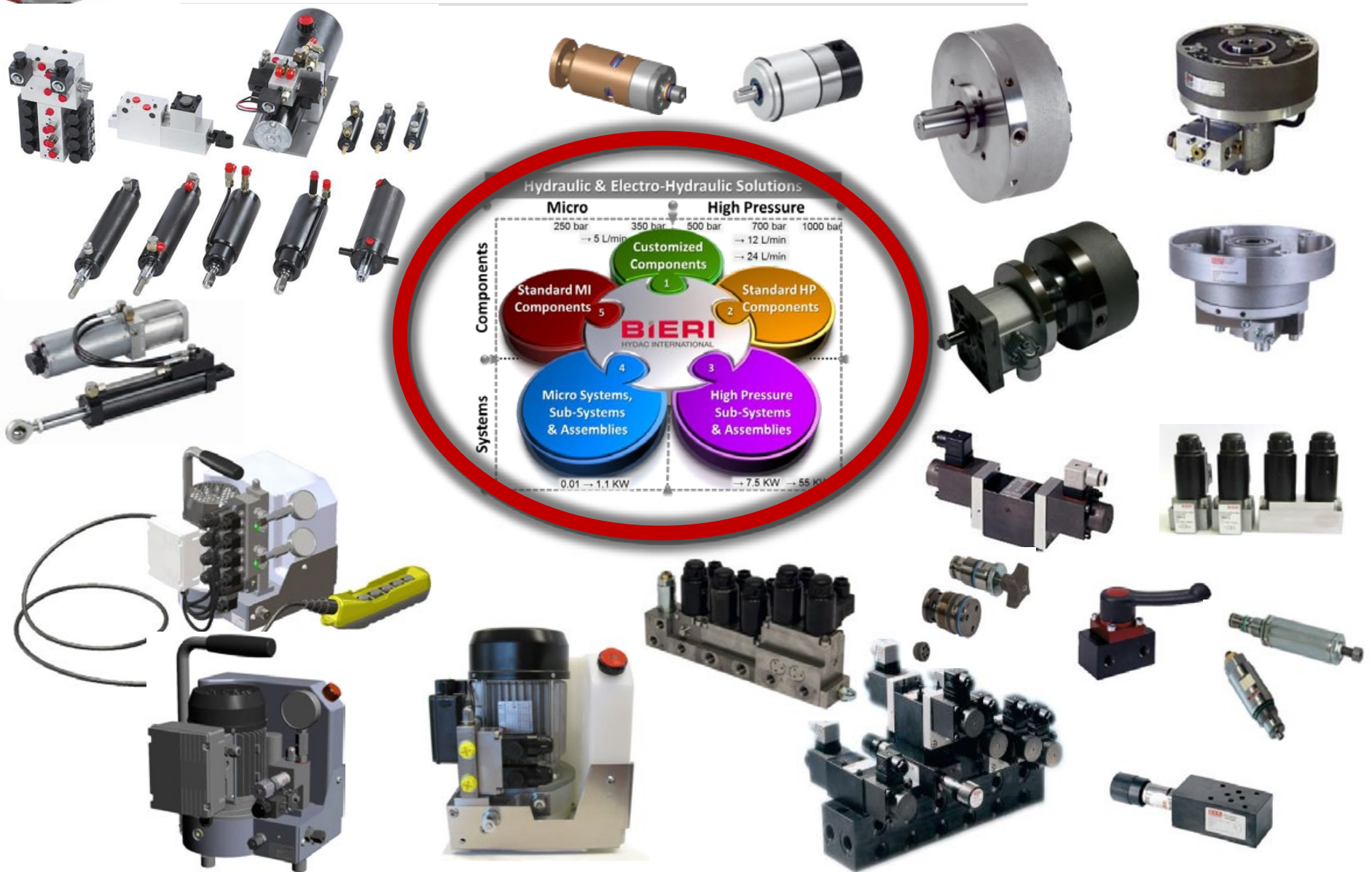


# Our Products

## Best in Class Components and Systems

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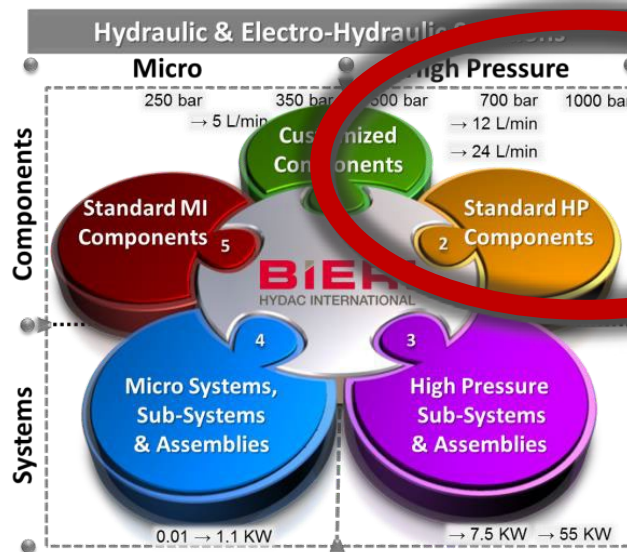
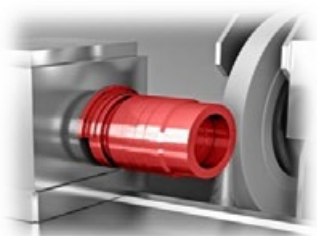
# The foundation of our Solutions → Components and Systems

**BIERI**  
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## Best in Class Solutions

### From Components to Systems



## The Foundation of our Best in Class Solutions:

**Standard  
Components**

**Customized  
Components**

**Subsystems  
& Systems**





# High Pressure Components



## Best in Class Pumps 500; 700; 1000 bar



### Micro-Axial piston pumps AKP

Valve controlled on pressure and suction side. High volumetric efficiency with a wide speed range. Small mounting dimensions and low noise.

3- and 5- pistons.

P **250 bar, 350 bar, 500 bar, 800 bar**  
Vg / n 0,10→2.292 cm<sup>3</sup>/r; 100→5000 min<sup>-1</sup>



### Radial piston pumps BRK

Self priming, self venting. Valve controlled. High volumetric efficiency. 3-, 5-, 7- pistons

P **500 bar, 700 bar, 1000 bar**  
Vg / n 0,24→8,14 cm<sup>3</sup>/r; 500→2000 min<sup>-1</sup>



### Radial piston pumps SRK-ATEX

For use in explosive environments also mounted outside of the hydraulic tank. Class II: gases, vapours, mists.

P **700 bar**  
Vg / n 0,47→6,33 cm<sup>3</sup>/r; 500 →1800 min<sup>-1</sup>



### Radial piston pumps SRK

Self priming, self venting. Valve controlled. Suitable for operation with bad lubricating mediums . 3-, 5-, 7-, 9- low friction pumping elements with low sliding speed.

P **700 bar**  
Vg / n 0,47→6,33 cm<sup>3</sup>/r; 500→1800 min<sup>-1</sup>



### Multi outlet pumps MRK

Various outlets available on request. Self-priming, self-venting. Valve controlled. High volumetric efficiency. Number of outlets 2 – 9.

P **700 bar**  
Vg/Circuit / n 0,16→3,620cm<sup>3</sup>/r; 500→2000 min<sup>-1</sup>



### Radial piston pumps HRK

Compact design. Direct installation of motor, no coupling, no bell-housing. Version with hollow shaft; with or without pressure relief valve. 1-, 2- pistons

P **700 bar**  
Vg / n 0,12→4,52 cm<sup>3</sup>/r; 500→3600 min<sup>-1</sup>



### Combination pumps KKP

Compact and lightweight. Integrated low-pressure shut-off valve and pressure protection valve. Self-venting. Design with hollow shaft. 2- and 3- pistons

p **LP 160 bar, HP 700 bar**  
Vg / n LP 0,35 → 5,43; HP 0,12 → 2,71 cm<sup>3</sup>/r  
500 → 3600 min<sup>-1</sup>



### Combination pumps SKP

Hollow shaft. Integrated low-pressure shut-off valve. Self-venting. 2- and 3- pistons HP stage

p **LP 100 bar, HP 700 bar**  
Vg / n LP 4,45 - 16,71; HP 0,45 - 2,71 cm<sup>3</sup>/r  
500→2000 min<sup>-1</sup>



### Combination pumps BKP

Combination of BRK pump and gear pump. Outstanding energy efficiency ratio. Fixed displacement, any installation position possible.

p **LP 250 bar, HP 1000 bar**  
Vg / n LP 4,0→ 61,1 ; HP 0,47 → 8,14 cm<sup>3</sup>/r  
500 → 2000 min<sup>-1</sup>



# High Pressure Components

## Best in Class Valves 500 bar

### Seated valves WVM

Direct operated and leakage free. With hardened closing elements as cone or ball seat. 2/2-, 3/2-, 3/3-, 4/2-\* functions with negative or positive overlap. Solenoids with slide on coil technology (turnable) or alternative actuation. Good resistance against corrosion.

P / size        **500 bar / NG 4**  
Q                **12 L/min**

### Seated valves ATEX WVMX

CE II 2G Ex emb IIC T4 Gb

Direct operated and leakage free. With hardened closing elements as cone or ball seat. 2/2-, 3/2-, 4/2-\* functions. Solenoids with slide on coil technology (turnable in 90° steps. For use in explosive environments Class II: gases, vapours, mists.

P / size        **700 bar / NG 4**  
Q                **12 L/min**

### Flow control valves SDM and SDRVM

Adjustable while under pressure with high-precision control. The setting can be locked by a counter nut. Throttle valve as cartridge or in manifolds as throttle or throttle check valve.

P / size        **500 bar / NG 4**  
Q                **25 L/min**

### Shut-off valves 500 bar / NG4

Leakage free in closed position. Available as cartridge or in modular- and stand alone manifolds.

P / size        **500 bar / NG 4**

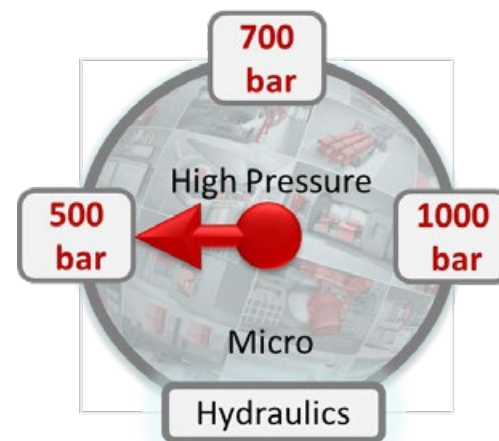
- **Manual shut-off valve AVM - 25 L/min**
- **Check valve RVM – 45 L/min**
- **Pilot operated check valve ERVM – 25 L/min**
- **P. o. CV with decompression ERVPM – 63 L/min / NG 10**

### Pressure valves 500 bar / NG4

Direct operated poppet valve as cartridge or with modular- or stand alone manifolds. Outstanding stability over the entire flow range. Low hysteresis and exact pressure control and adjustment.

P / size        **500 bar / NG 4**

- **Pressure relief valve DVM - 30 L/min**
- **Pressure reducing valve DMM – 30 L/min**
- **Unloading valve DAV – 40 L/min**





# High Pressure Components

## Best in Class Valves 700 bar



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### Seated valves WVH

Direct operated and leakage free. With hardened closing elements as cone or ball seat. 2/2-, 3/2-, 3/3-, 4/2-\* functions with negative or positive overlap. Solenoids with slide on coil technology (turnable) or alternative actuation. Good resistance against corrosion.

P / size **700 bar / NG 4**  
Q **12 L/min**

### Seated valves ATEX WVHX

CE II 2G Ex emb IIC T4 Gb

Direct operated and leakage free. With hardened closing elements as cone or ball seat. 2/2-, 3/2-, 3/3-, 4/2-\* functions. Solenoids with slide on coil technology (turnable) in 90° steps. For use in explosive environments Class II: gases, vapours, mists.

P / size **700 bar / NG 4**  
Q **12 L/min**

### Seated valves WVM-4B-Bi

Direct operated, leakage free and suitable for bidirectional flow, with hardened closing elements as cone seat. 2/2-, 3/2- with low pressure drop (dp). Solenoids with slide on coil technology (turnable) or alternative actuation. Good resistance to corrosion.

P / size **700 bar / NG 4**  
Q **12 L/min**

### Shut-off valves 700 bar / NG6

Leakage free in closed position. Available as cartridge alone or in sandwich plates or manifolds.

- **Manual shut-off valve AV700 - 25 L/min**
- **Check valve RVH - 45 L/min**
- **Pilot operated check valve ERV700 - 25 L/min**
- **Load holding counterbalance valve SBV700 - 25 L/min**

### Seated valves WV700

Direct operated and leakage free. High duty cycle and long lifetime through hardened poppets and valve seats. 2/2-, 3/2-, 3/3-, 4/2-, 4/3 functions with positive overlap (exceptions see data sheet) and use of 1 to 4 valve cartridges. Solenoid- or alternative actuation.

P / size **700 bar / NG 6**  
Q **25 L/min**

### Manual spool valves HSV700

Minimum weight. Excellent price-performance ratio.

P / size **700 bar / NG 6**  
Q **25 L/min**

### Pressure valves 700 bar / NG6

Direct operated poppet valve as Cetop 3 flangeable sandwich plate. Outstanding stability over the entire flow range. Low hysteresis and exact pressure control and adjustment.

- **Pressure relief valve DV700 - 25 L/min**
- **Pressure reducing valve DM700 - 25 L/min**
- **Unloading valve DA700 - 25 L/min**

### Proportional- pressure relief valves PDV700

Available as direct- and pilot operated version. High degree of pressure stability and linear curve. Force controlled proportional solenoid of robust design.

P / size **700 bar / NG 6**  
Q direct operated 2 L/min; Q pilot operated 25 L/min

### Flow control valves SD700 und SDR700

Adjustable while under pressure with high-precision control. The setting can be locked by a counter nut. Throttle valve as cartridge or in manifolds as throttle or throttle check valve.

P / size **700 bar / NG 4**  
Q **25 L/min**



# High Pressure Components



## Pumps, Valves, Pressure switches 1000 bar



### Radial piston pumps BRK11/12

Self priming, self venting. Valve controlled.

High volumetric efficiency. 3-, 5-, 7- pistons

P **1000 bar**

Vg / n 0,24→8,14 cm<sup>3</sup>/U; 500→2000 min<sup>-1</sup>



### Manual shut-off valve SPV2

Poppet design leakage free. Low operating force. Both connections designed for max. pressure. For in-line mounting systems.

P **1000 bar**

Q **20 bzw. 32 L/min**



### Pressure relief valve DV2

Cone seat valve direct operated. Max. pressure adjustable by locking nut. Pressure relief valves with threaded connection for in-line mounting systems, mainly test benches.

P **1000 bar**

Q **3 bis 12 L/min**



### Pressure switches DV7.1

Piston type pressure switch with one change-over switch, easily adjustable over the entire pressure range, with scale for presetting of the pressure switching point.. 7 pressure ranges for the optimal adaptation to any operating pressure-

P **→1000 bar**



### Pressure switches DV7.2

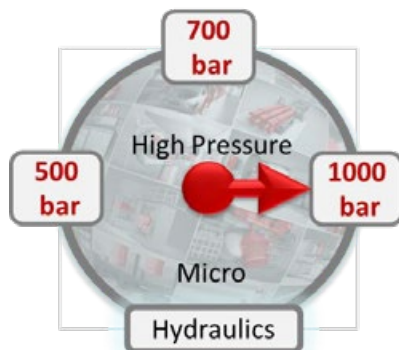
Combined instruments for permanent pressure indication, available with two change-over switches, independently adjustable over the entire pressure range and which indicate the pressure settings. 7 pressure ranges for the optimal adaptation to any operating pressure-

P **→1000 bar**



### Oil level switches FS

With any length up to 1200mm possible, our oil level switches can be threaded directly into tank cover. Level and temperature control in the tank, Guaranteed potential free switching. Can be dismantled without removing the tank cap. Suitable with many different fluids.





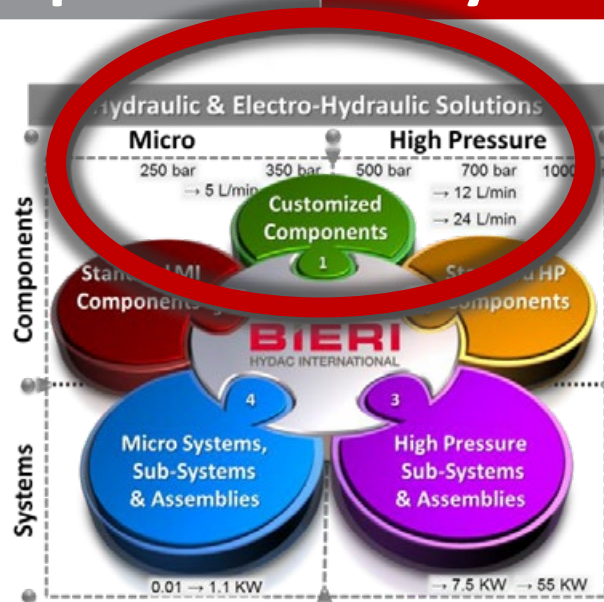
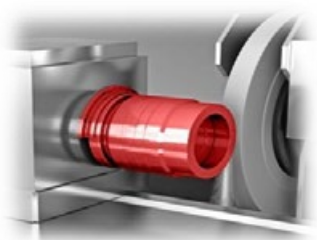
# The foundation of our Solutions → Components and Systems

**BIERI**  
HYDAC INTERNATIONAL

**Power**  
ACCESSORIES, INC.

## Best in Class Solutions

### From Components to Systems



## The Foundation of our Best in Class Solutions:

Standard  
Components

Customized  
Components

Subsystems  
& Systems



# Customized Components

## Successful partnership for your technological advantage

### Standard Components

#### Pumps

- Micro Axial Piston Pumps
  - Radial Piston Pumps

#### Valves

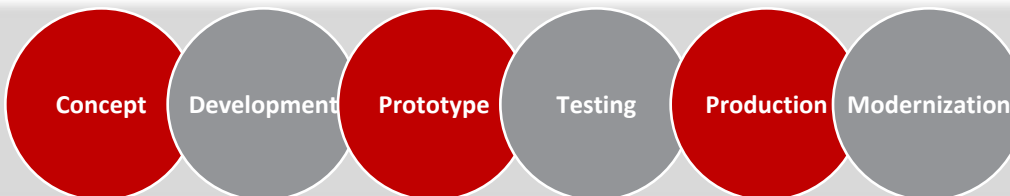
- Directional seat valves
  - Pressure valves
  - Flow control valves
  - Shut-off-valves



### Customized Components

Based on our portfolio of standard components and our hydraulic- and application-specific expertise, we have the willingness and ability to develop customized components – in cooperation with you – which are not available in the required specification on the market.

**Perfect customized solutions as a result of close cooperation.**



Together we define the design, and we assist you in your development work. This allows you to tread innovative paths, test prototypes or integrate the solution perfectly into your equipment.

Once the solution has been developed, we turn to the zero series, volume production and the maintenance service of our components over the entire life of your equipment. A technological advantage therefore becomes a successful partnership.



# Customized Components

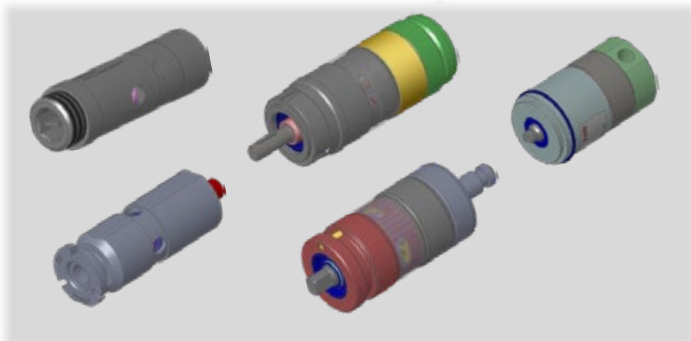
## If the very specials are in demand and are not available (or haven't been)

### Example AKP – Micro Axial Piston Pumps



#### Features

<b>Housing:</b>	▪ $\varnothing 21.5 \times 66$ to $\varnothing 62.2 \times 146$
<b>Shaft:</b>	▪ $\varnothing 5$ to $\varnothing 13$ with wedge, SW, I-6kt., slot
<b>Vg:</b>	▪ $0.012 \text{ cm}^3/\text{U}$ to $2.2 \text{ cm}^3/\text{U}$
<b>p:</b>	▪ 120 bar up to 850 bar
<b>n:</b>	▪ Up to $6000 \text{ min}^{-1}$
<b>Temperature:</b>	▪ Up to $175 \text{ }^\circ\text{C}$
<b>Other requirements / Features</b>	▪ On request





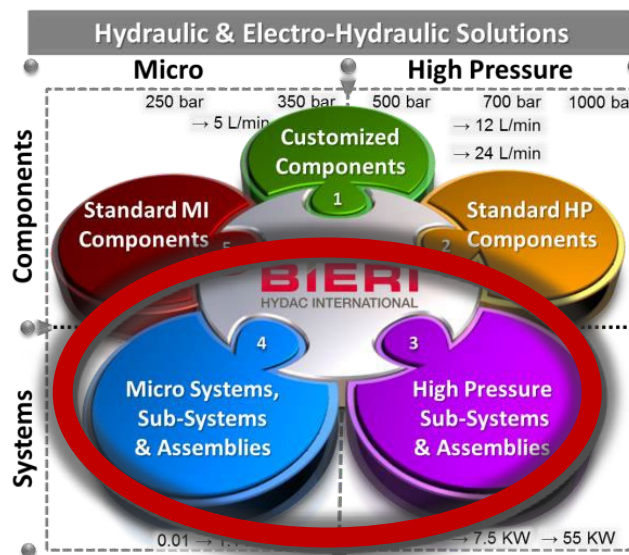
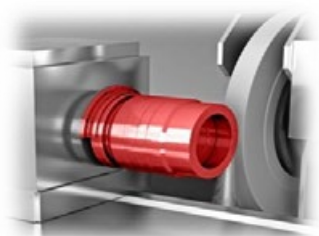
# The foundation of our Solutions → Components and Systems

**BIERI**  
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**Power**  
ACCESSORIES, INC.

## Best in Class Solutions

### From Components to Systems



## The Foundation of our Best in Class Solutions:

Standard  
Components

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& Systems





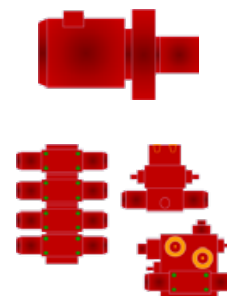
# Your innovative & reliable Partner for System Solutions

**BIERI**  
HYDAC INTERNATIONAL

**Power**  
ACCESSORIES, INC.

## ONE supplier. ONE contact. ONE responsibility

Based on our many years of experience in the field of hydraulic systems and as a result of our consistent innovation and engineering abilities we are offering our Best in Class Products with **M.SYSTEM** in a comprehensive module system.



This helps us to find the best customized solution also for your complex requirements:

- The individual components supplement one another forming customized solutions and systems.
- Unified components and the possibility to combine them individually serve to increase efficiency at an ideal price-performance ratio.





# Our Platform for System Solutions

## A Modular System Approach

**BIERI**  
HYDAC INTERNATIONAL

**Power**  
ACCESSORIES, INC.

**MI** The BIERI Hydraulics **HP**  
**MICRO & HIGH PRESSURE**  
Assemblies, Sub-Systems & System Approach



### Motor-Pump Assemblies

**MI** **HP** **HP**  
250 bar NG 2 500 bar NG 4 700 bar NG 4  
500 bar NG 6 700 bar NG 6



**BIERI**  
M.POWER

### Manifold Assemblies

**MI** **HP** **HP**  
250 bar BM 500 bar KK SK 700 bar BK HK KK SK



**BIERI**  
M.BLOCK

### Tank Assemblies



**BIERI**  
M.TANK

### Electric & Electronic Controls



**BIERI**  
M.CONTROL

### Power Packs

**MI** **HP** **HP**  
250 bar 500 bar 700 bar



**BIERI**  
M.PACK

### Cylinder Assemblies

**MI**  
250 bar



**BIERI**  
M.CYLINDER

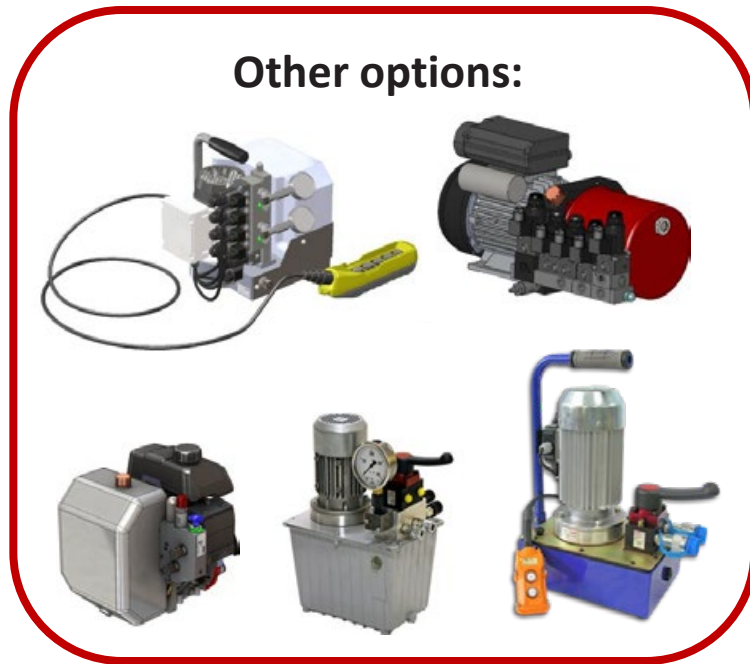
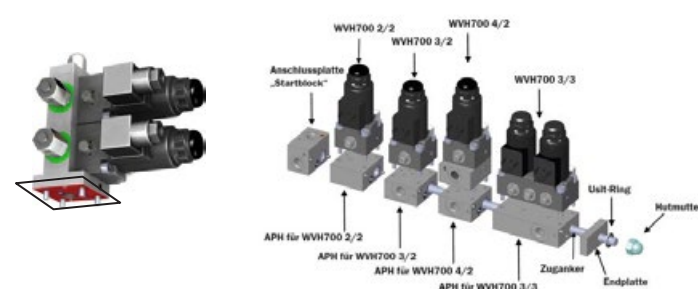
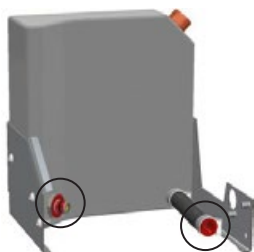


# Our Platform for System Solutions

**BIERI**  
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**Power**  
ACCESSORIES, INC.

## Example HP 700 bar subsystems & power packs





# Our Markets

## Demanding Solutions

**BIERI**  
HYDAC INTERNATIONAL

**Power**  
ACCESSORIES, INC.



We are the competent **solution partner** for any application where **space is limited** and clever solutions are required.



# Your Solution Partner for high performing equipment in demanding Applications

**BIERI**  
HYDAC INTERNATIONAL

**Power**  
ACCESSORIES, INC.

To supply to you the best suitable product, to help you in designing or redesigning of your equipment to be higher performing – these are our targets and can be your competitive advantages by partnering with us.

We know the requirements of our target industries, because we observe and deal integrally with market segments and their challenges.

We have collected and implemented know-how in a targeted manner for more than 60 years and know, how different the special requirements for different market segments and applications can be.

With our broad and competitive product range, combined with our application knowledge we can efficiently support you on your way to market success.

## BIERI Hydraulics

## Your partner with application Know-How



**BLUECOMPETENCE**

Alliance Member





# Our Markets

## Market Segments

**BIERI**  
HYDAC INTERNATIONAL

**Power**  
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Oil & Gas

Maritime Applications

Medical Technology

Fun Park Safety Systems

Special Vehicles

Aerospace

Clamping technology & jig construction

Machine Tools Cutting – Clamping & aux.

Machine Tools Forming - Clamping & aux.

Machine Tools Forming - Small Presses

Lubrication Technology

Hydraulic Tools

Testing systems

Energy

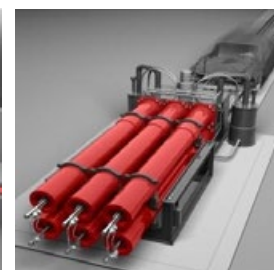
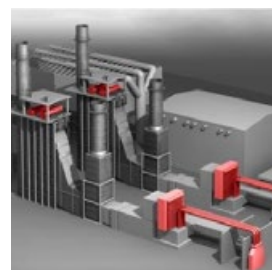
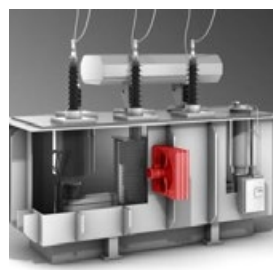
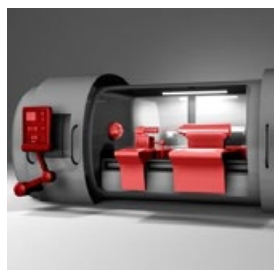
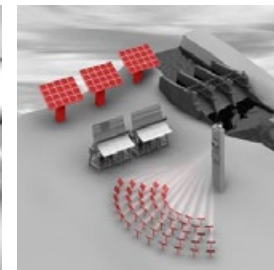
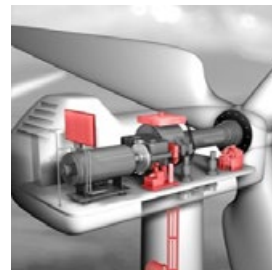
Construction Engineering

Lifting and Transport Systems

Shipbuilding

Recycling

Rescue Technology





# Our Markets

## Segments and Applications



### Oil & Gas

**MI**

- Downhole Directional Drilling
- Wellhead Control Panels

### Maritime Applications

**MI**

- Oceanographic research
- ROV's
- Process Control

### Medical Technology

**MI**

- Surgical Tables
- Scanner Tables
- Rescue Beds / Stretchers

### Fun Park Safety Systems

**MI**

#### Special Vehicles

**MI**

- Armored vehicles – window lifting
- Seat adjustment

### Aerospace

**MI**

- Locking Systems

### Hydraulic Tools

**HP**

- Torque Wrench
- Nut splitter
- Bolt splitter
- Concrete splitter
- Concrete crusher
- Foundry equipment

### Rescue Technology

**HP**

- Cutters
- Forceps/Pinchers
- Spreaders

### Clamping Technology & Jig Construction

**HP**

#### Machine Tools Cutting – Clamping & auxiliary functions

- Milling & Machining Centers
- Grinding Machines
- Turning Centers
- Sawing Machines

**HP**

#### Machine Tools Forming - Clamping & auxiliary functions

- Mechanical & Servo Presses
- Hydraulic Presses
- Bending Machines
- Punches

**HP**

#### Machine Tools Forming - Small Presses

**HP**

- Filter presses
- Crimping tools
- Stamping presses (license plates)
- Punching and rivet presses
- Bench & workshop presses
- Material test presses

### Lubrication Technology

**HP**

- Lubrication units
- Railway lubrication

### Testing Systems

**HP**

- Hydraulic test benches
- Material testing systems

### Energy

**HP**

- High voltage circuit breaker
- Windturbines
- Solar (Positioning)

### Construction Engineering

**HP**

- Climbing systems
- Tunnel -/Pipeline drilling
- Concrete post tensioning / prestressing
- Stringing equipment
- Pile foundation
- Material testing
- Drilling technology
- Vibration dampening
- Bridge construction (lifting & launching)

### Lifting and Transport Systems

**HP**

- Rail track tools
- Wheel set presses
- Portable machine lifting systems
- Construction lifting systems

### Shipbuilding

**HP**

- Lifting & synchronised lifting & fixing
- Installation of Engines and Screws

### Recycling

**HP**

- Scrap cutting /shredding



# Our Sales Team

## Tasks and Responsibilities



**Director Sales & Marketing**  
**KAM MI; Oil & Gas**

**Oswald  
Mutter**



**Product Manager**  
**HP Components**

**Lothar  
Oehmen**



**Product Manager**  
**Systems**

**Peter  
Zwygart**



**Technical & Commercial Support**  
**Systems – PM MI Systems**

**Wolfgang  
Bertleff**



**Technical Support Components**  
**& After Sales / Repairs**

**Dario  
de Benedictis**



**Technical & Commercial Support**  
**Systems – PM HP Systems**

**Hartmut  
Krutsche**



**Marketing & Sales Support**

**Tina  
Frutig**



**Commercial Support & Offers**

**Julia  
Human**



**Order Processing & Export**

**Petra  
Pfister**

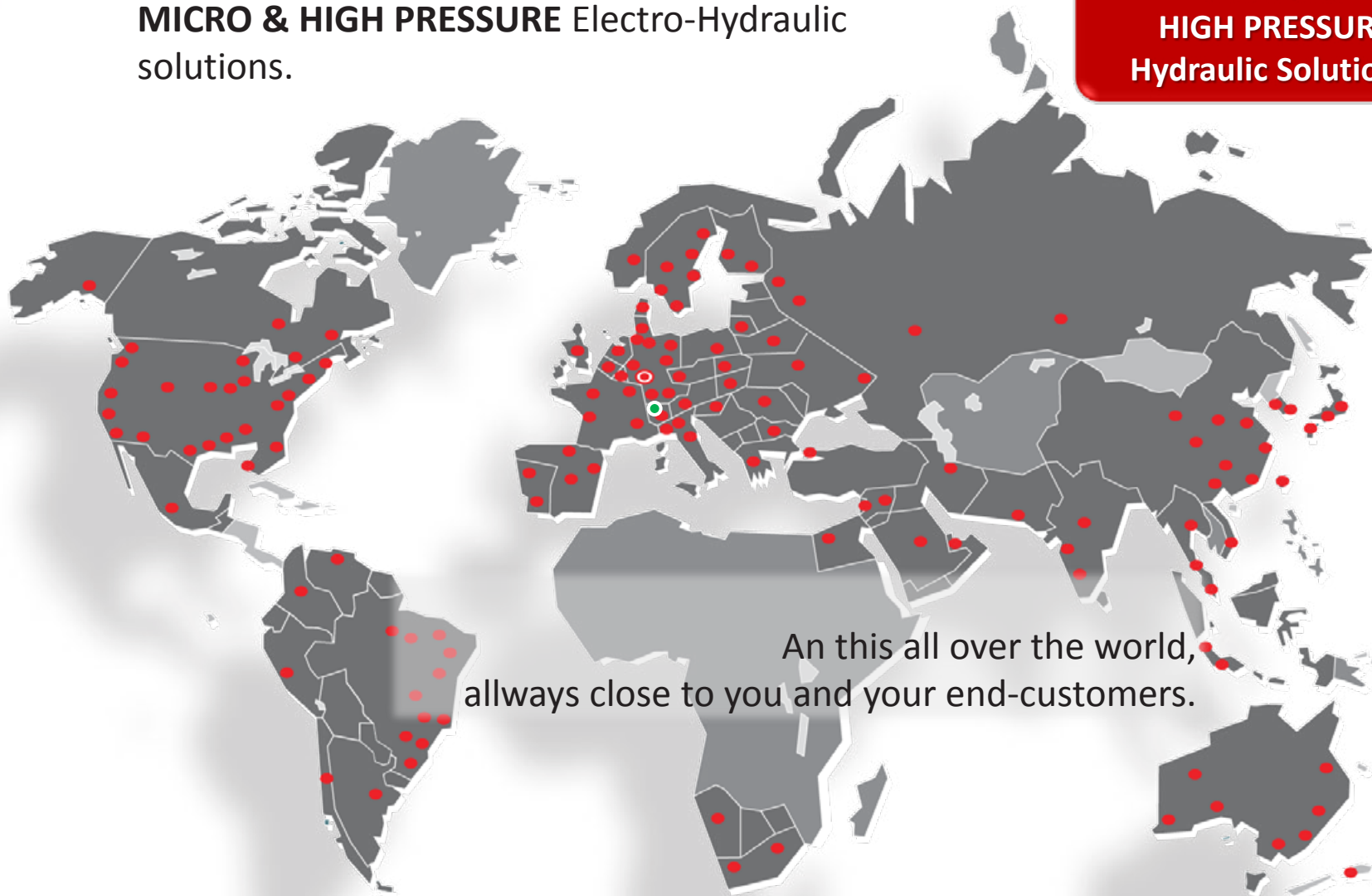






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