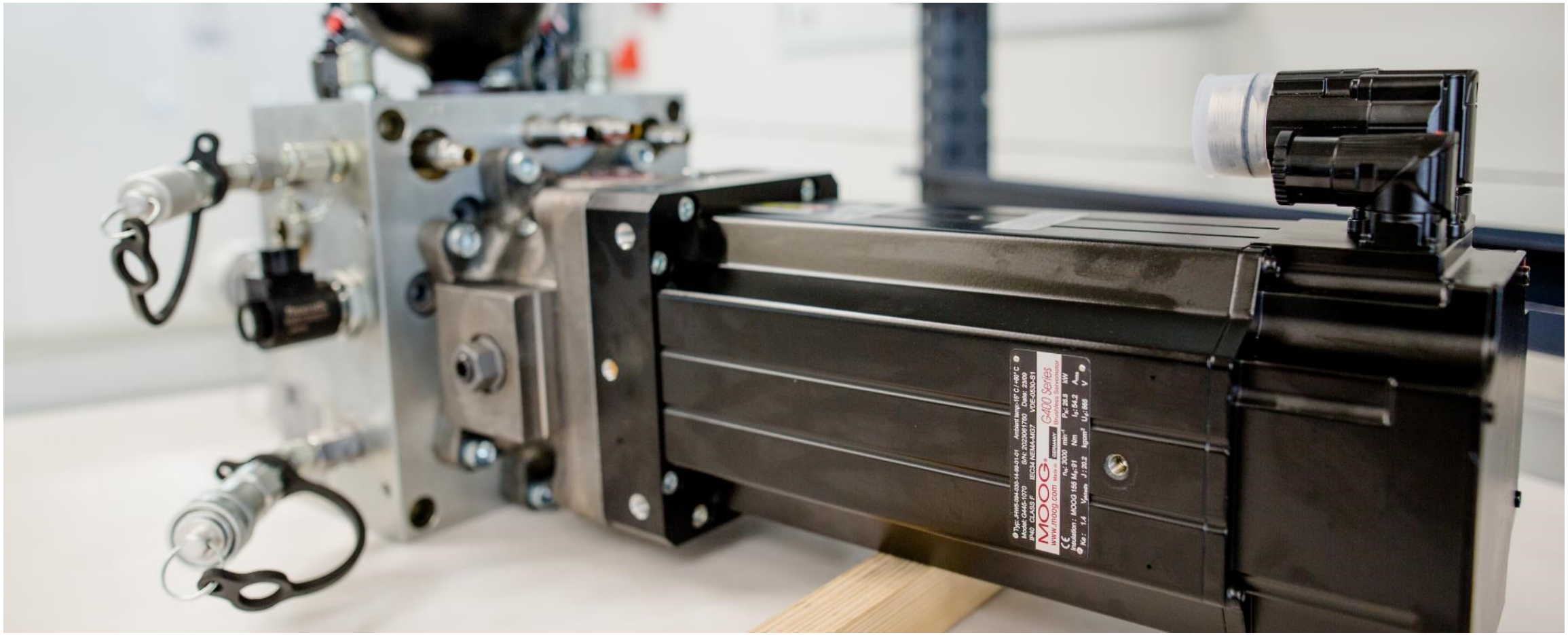

MOOG

Shaping the way our world moves™

ELECTRO-HYDROSTATIC ACTUATION

MOOG EPS

V1.3, SEP 2024

TODAY‘S CHALLENGES

OUR SOLUTION

PRODUCT FEATURES

APPLICATIONS

LEARN MORE

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TODAY‘S CHALLENGES

MACHINE BUILDERS NEED FOR ADAPTION

SKILLED LABOR SHORTAGE

In the global battle for talent, hydraulic, electronic and software engineers are in demand.

SHORTER MACHINE LIFECYCLES

Driven by legal requirements and global competition, product and machine lifecycles continue to shorten.

INCREASED COMPLEXITY

Machines are becoming more complex with integrated software, sensors, and connectivity, requiring new skillsets and expertise.

OUR SOLUTION

Portfolio

MOOG ELECTRO-HYDROSTATIC PUMP SYSTEM (EPS)

- LOW OPERATING COSTS / TCO
- FASTER TIME TO MARKET
- FLEXIBILITY IN MACHINE DESIGN AND INTEGRATION
- SPEED UP ASSEMBLY AND COMMISSIONING TIME
- HIGH MACHINE AVAILABILITY

- Electrification of motion control architecture
- High Energy Efficiency
  - Power on demand
  - No Throttling losses
- Reduced footprint
  - Compact and robust
  - Self-contained system
- High Adaptability
  - Plug’n’run
  - Simplify hydraulic concept
- High force capability and power density
- High ease of use and serviceability

OUR SOLUTION

Hydraulic concept

PRODUCT OVERVIEW

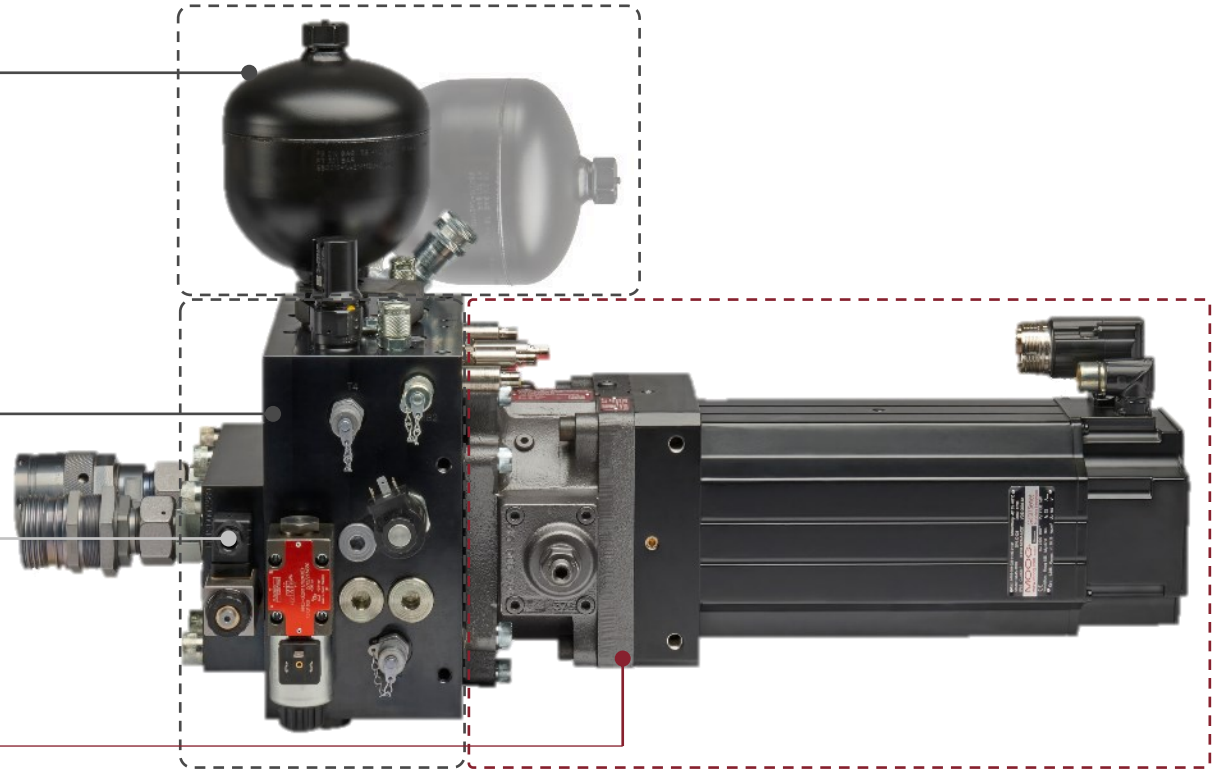
Accumulator – 5 sizes

+ Accumulator plate (for parallel mounting)

Base manifold – 5 sizes

+ Attachment manifold (depending on size/mounting)

Electro-hydrostatic Pump Unit (Moog EPU)

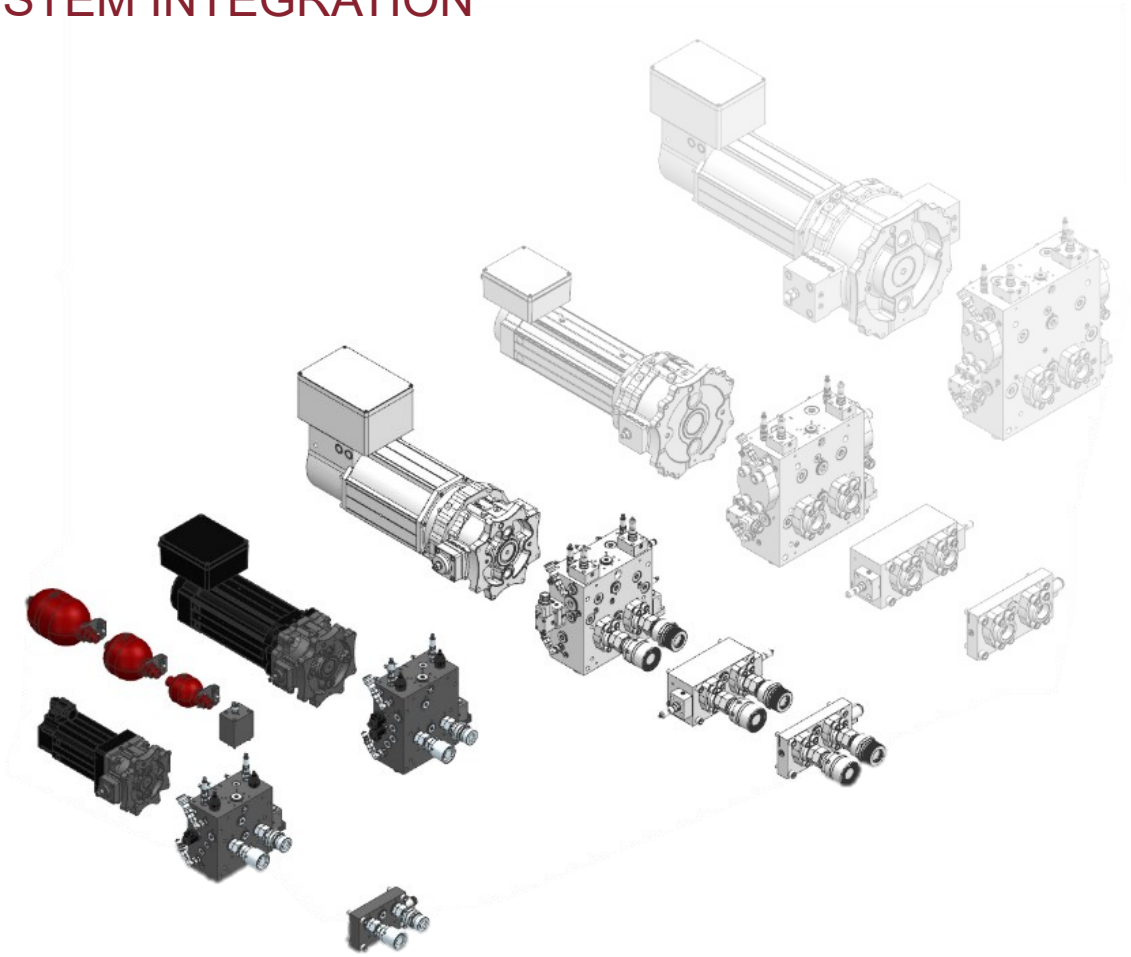


OUR SOLUTION

Functional concept

MODULAR PORTFOLIO ENABLES FLEXIBLE SYSTEM INTEGRATION

- 5x sizes (19 to 250 ccm)
- 3x variants (closed, half-open, customized)
- 3x cooling options (natural, fan, water)
- 2x mounting positions (axial, radial)

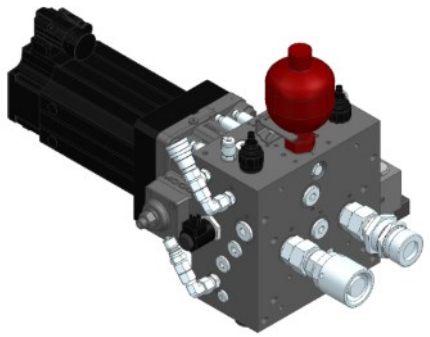


OUR SOLUTION

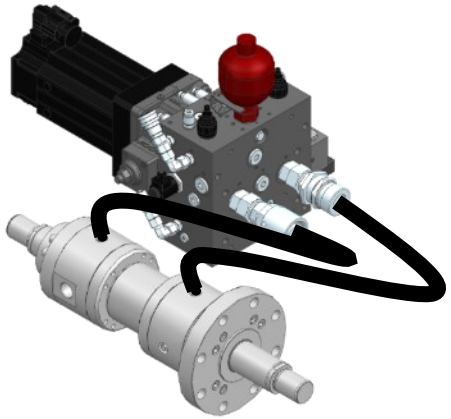
System integration

FLEXIBLE USE IN CLOSED OR HALF-OPEN CIRCUITS

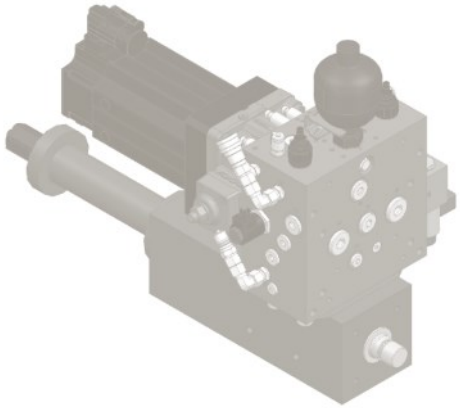
Standard



Distributed



Customized



PRODUCT FEATURES

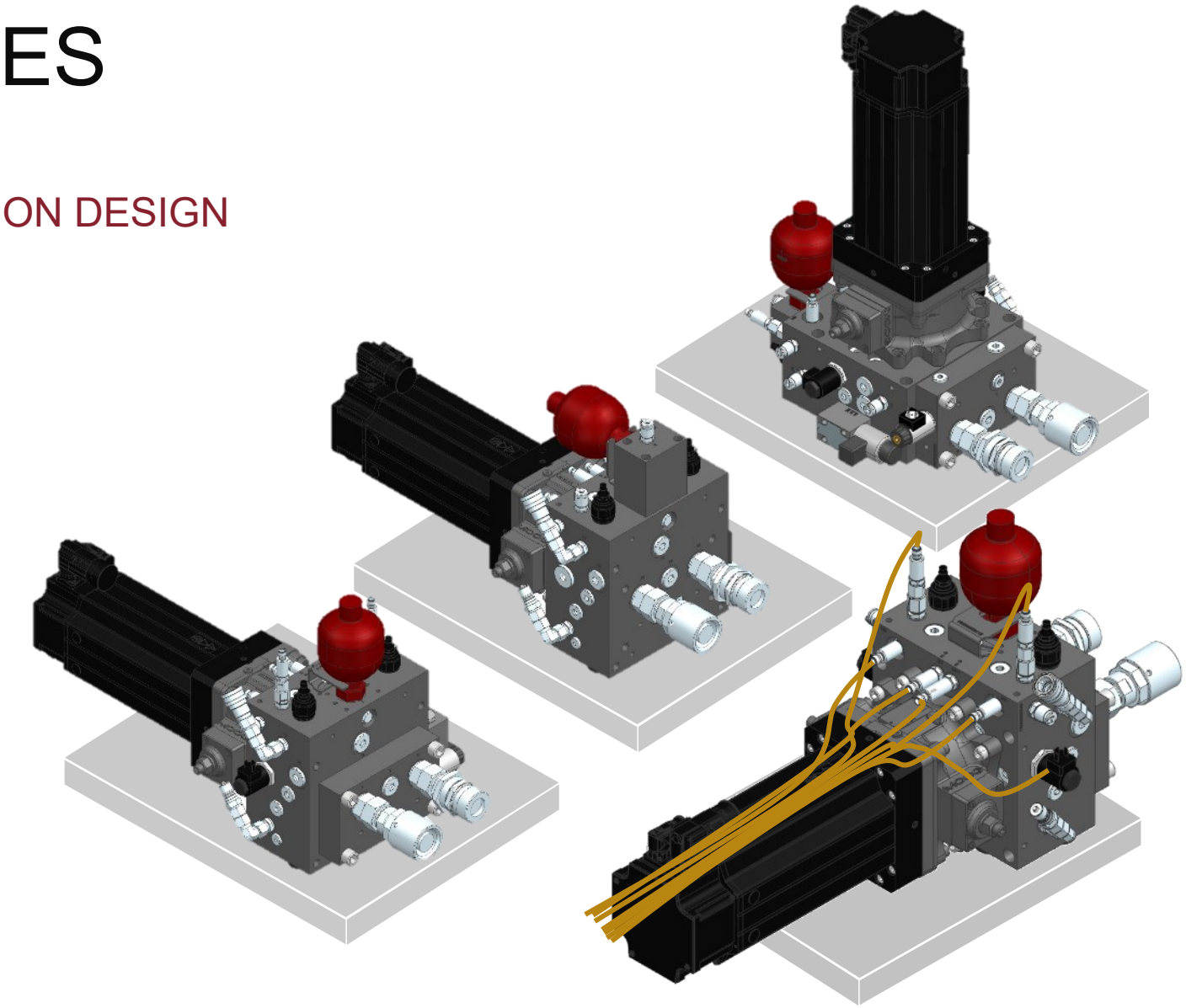
FREEDOM IN SYSTEM AND APPLICATION DESIGN

Different mounting options

- Axial or radial mounting possible (parallel or orthogonal to motion axis)
- Accumulator in parallel or orthogonal design

Cable management

- All cables can be bundled



PRODUCT FEATURES

GENERAL TECHNICAL DATA

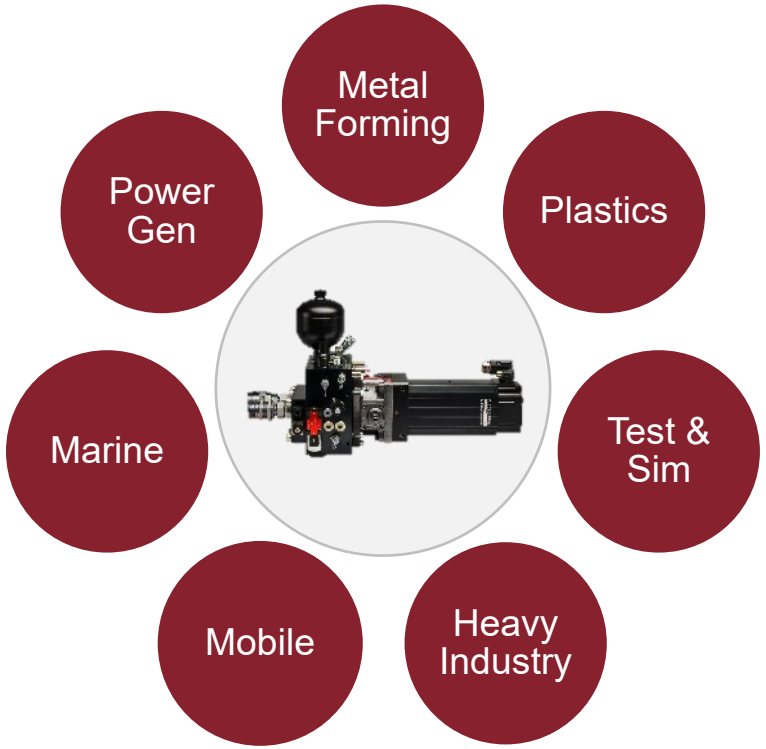
Size		019	032	080	140	250
Maximum pump flow		85 l/min (22.5 gpm)	118 l/min (32.2 gpm)	216 l/min (57.1 gpm)	322 l/min (85.1 gpm)	450 l/min (118.9 gpm)
Maximum system pressure		350 bar (5,076 psi)				
Maximum pump housing pressure		10 bar (145 psi)				
Maximum pre pressure		• 10 bar (145 psi) for self-contained system • 25 bar (363 psi) for half-open system				
Motor Pump Unit	Pump version	Radial Piston Pump, fixed or dual displacement				
	Motor version	Brushless servo motor, natural, fan or liquid cooled (oil/water)				
Temperature range	Ambient	-15 to +40 °C (5 to 104 °F)				
	Fluid	-15 to +80 °C (5 to 176 °F)				

APPLICATIONS

IN-DEPTH MOTION CONTROL EXPERIENCE

The Moog EPS enables variable displacement with significant speed and force phases and offers high performance and robustness for demanding applications.

- We **support your transition** from conventional electro-hydraulic to energy efficient electro-hydrostatic actuation
- We offer products, sub-systems and **complete solutions** including drives, controllers, software and energy management.
- We are **proven experts** in electro-hydrostatic actuation technology with decades of experience in aerospace and industrial applications

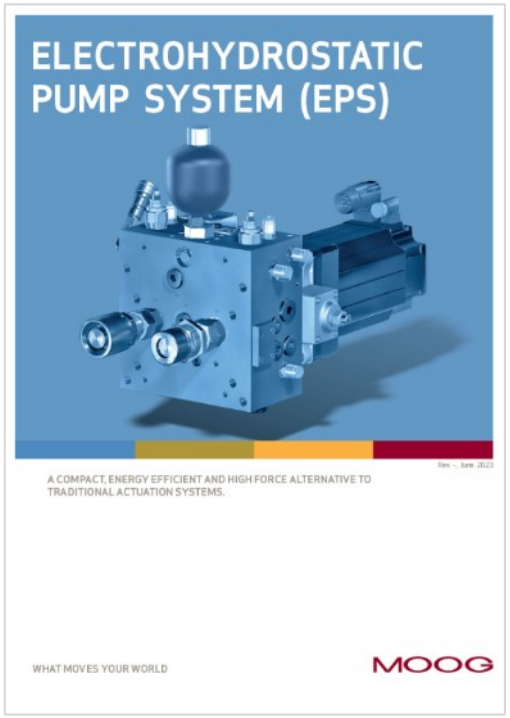


ADDITIONAL RESOURCES

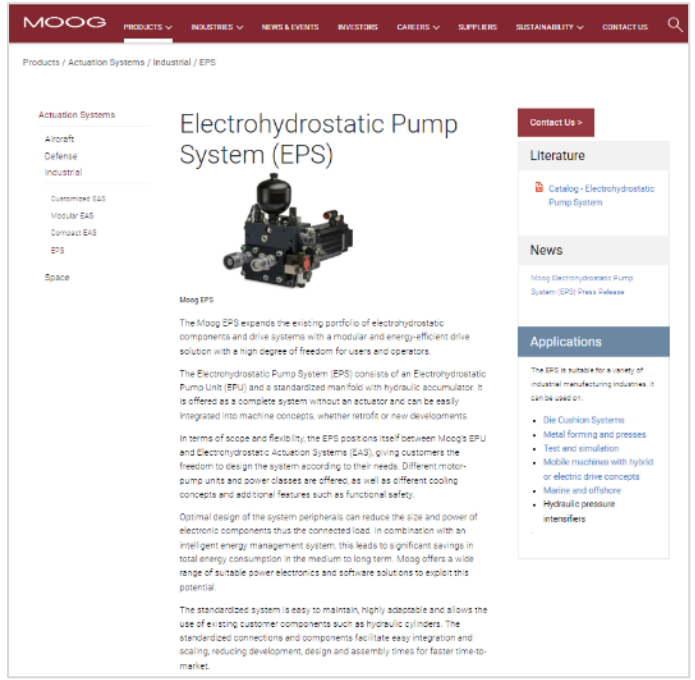
Tab to open

WANT TO LEARN MORE?

Product Catalog - EPS



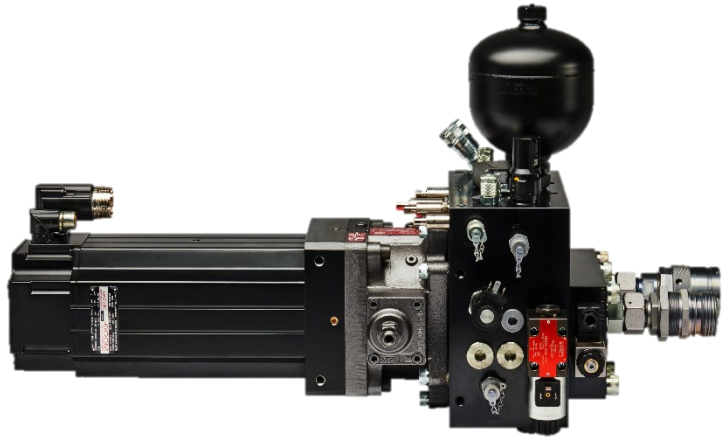
Moog Website – EPS



MOOG

THE MOOG EPS

ADDING VALUE TO YOUR APPLICATION



FREEDOM IN SYSTEM DESIGN

- Sizes 19-250 ccm
- Operation in closed or half-open circuit
- Fixed or dual displacement pump
- Various motor classes and cooling options
- Additional (safety) functions

FLEXIBILITY IN MACHINE INTEGRATION

- Use of customer components, such as cylinders
- Reduced design and assembly efforts (time-to-market)
- Space-saving connection - axial / radial to motion axis
- Standardization for easy scaling and maintenance
- High availability due to Moog Global Service

MOOG

Shaping the way our world moves™

THANK YOU

LETS MAKE THE IMPOSSIBLE POSSIBLE TOGETHER

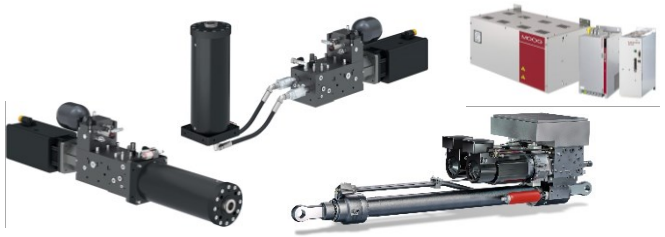
click to connect

BACKUP / EXTENDED CONTENT

ELECTRO-HYDROSTATIC ACTUATION

Back

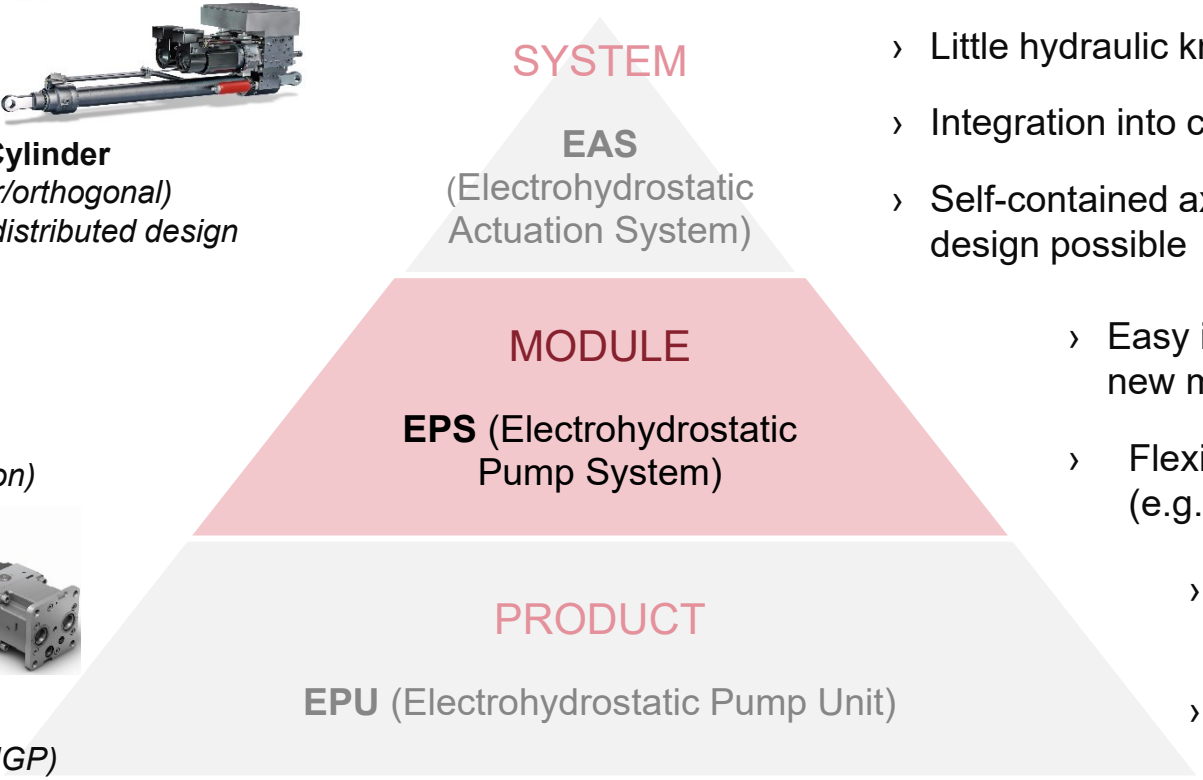
THE BEST OF TWO WORLDS TAILORED TO YOUR NEEDS



EPU + Manifold + Cylinder
Compact axis (linear/orthogonal)
Customized in split/distributed design

EPU + Manifold
(in axial/radial position)

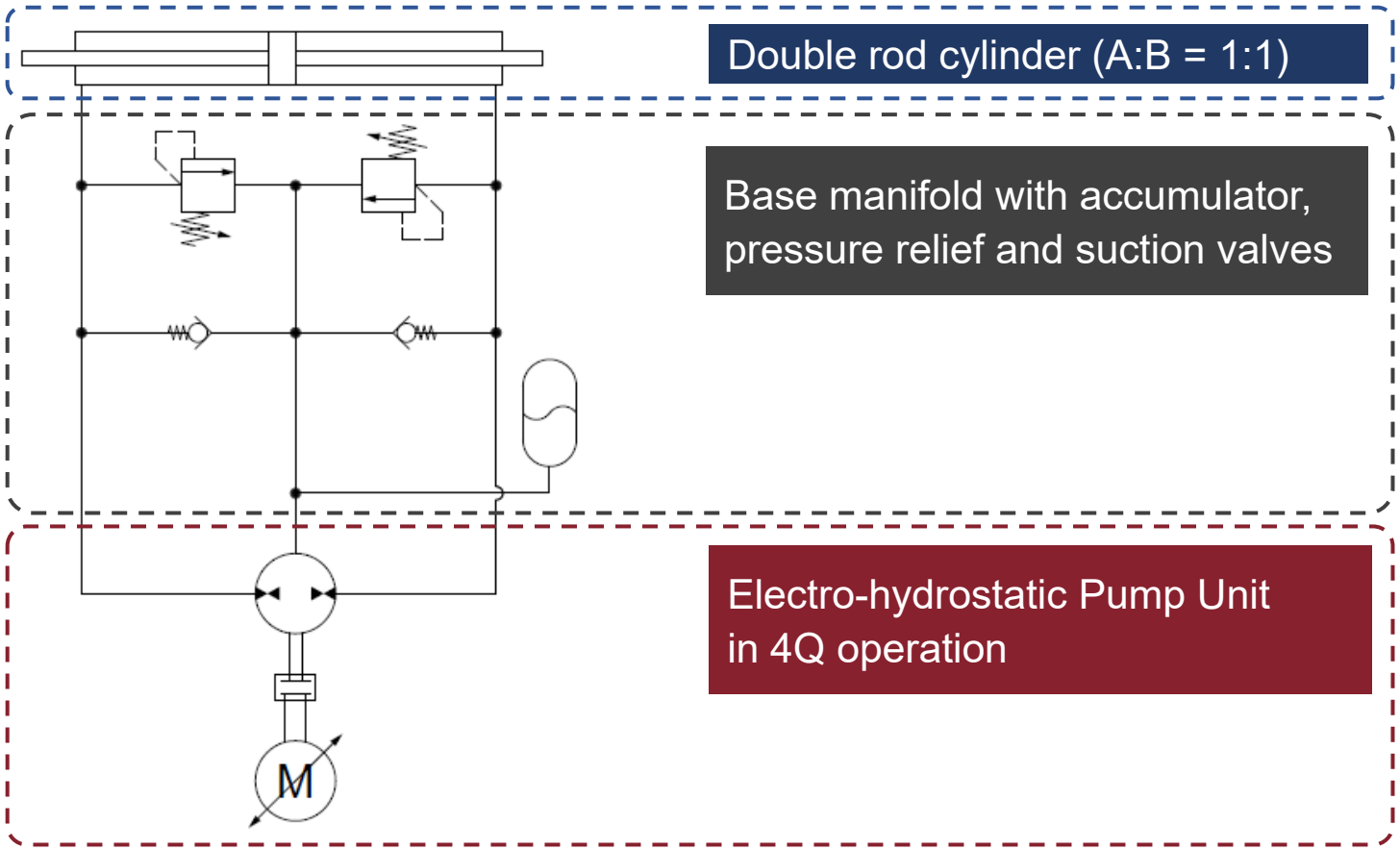
EPU
(based on 4Q RKP/IGP)



- Little hydraulic know-how required
- Integration into closed or half-open circuits
- Self-contained axis or distributed/customized design possible
  - Easy integration into existing and new machine design (retrofit)
  - Flexible use of customer components (e.g. cylinders)
    - Max. freedom/flexibility in system design and machine integration
    - Heart of Moog's EHA technology

HYDRAULIC CONCEPT

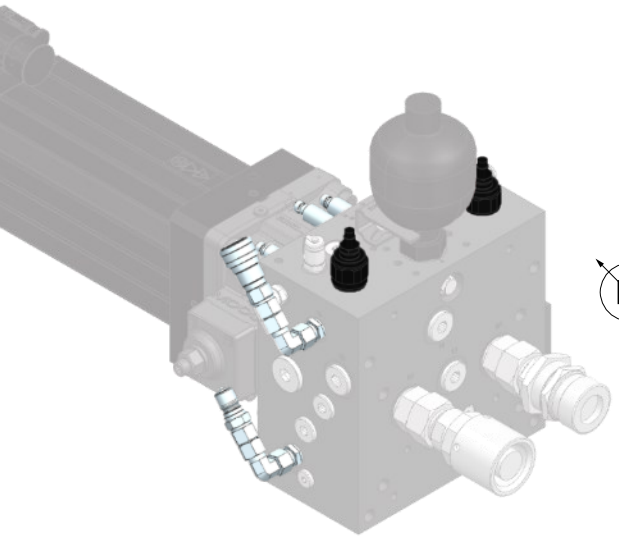
Back



FUNCTIONAL CONCEPT

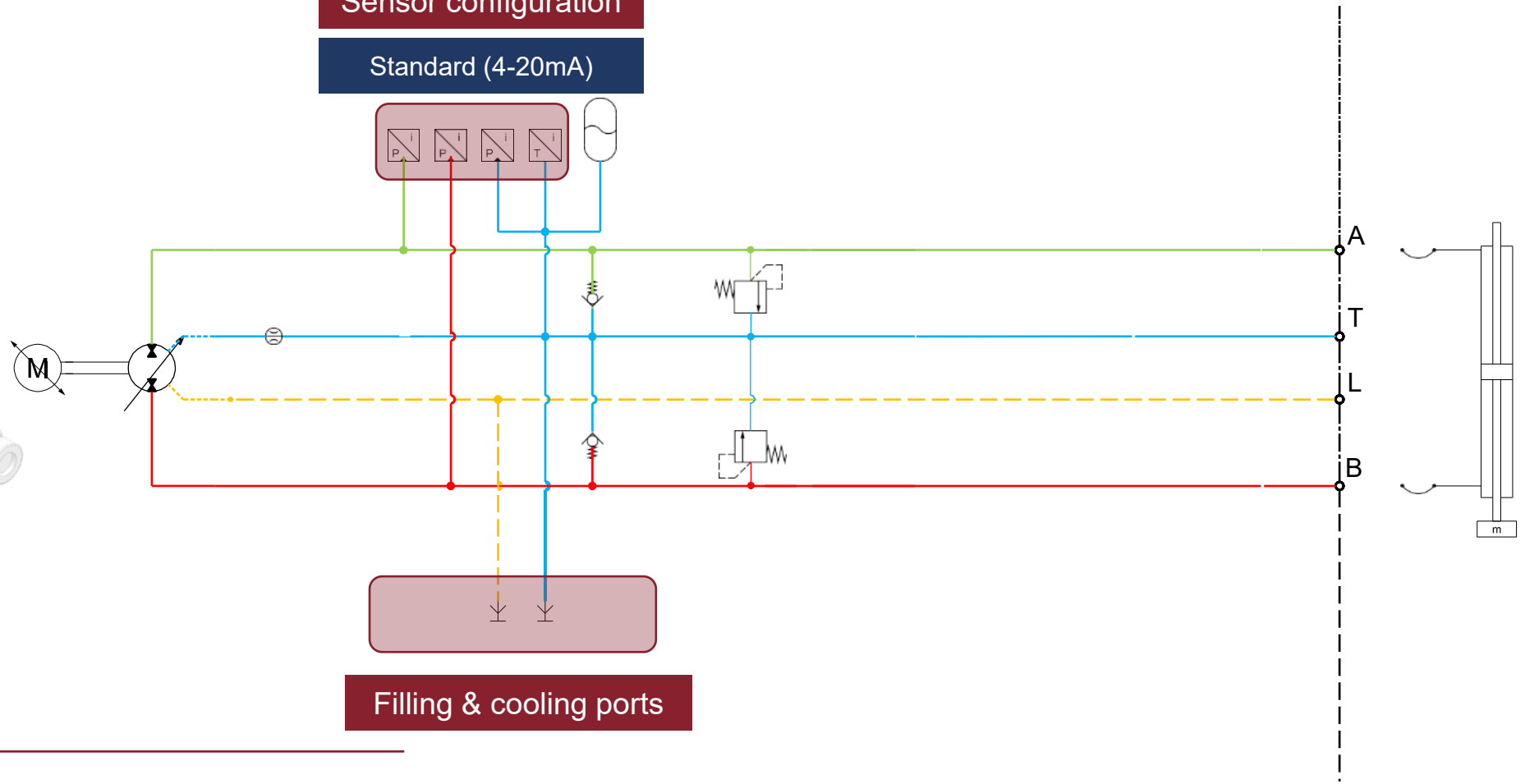
(1) Base configuration | (2) Options & Safety | (3) Attachment manifold

Back



Sensor configuration

Standard (4-20mA)

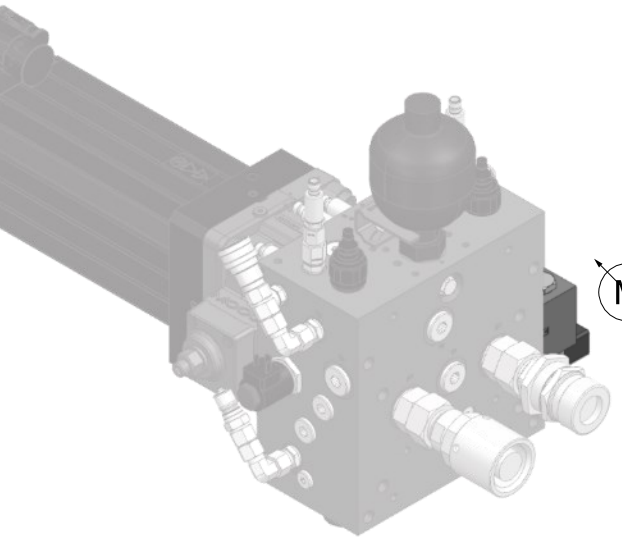


Filling & cooling ports

FUNCTIONAL CONCEPT

(1) Base configuration | (2) Options & Safety | (3) Attachment manifold

Back

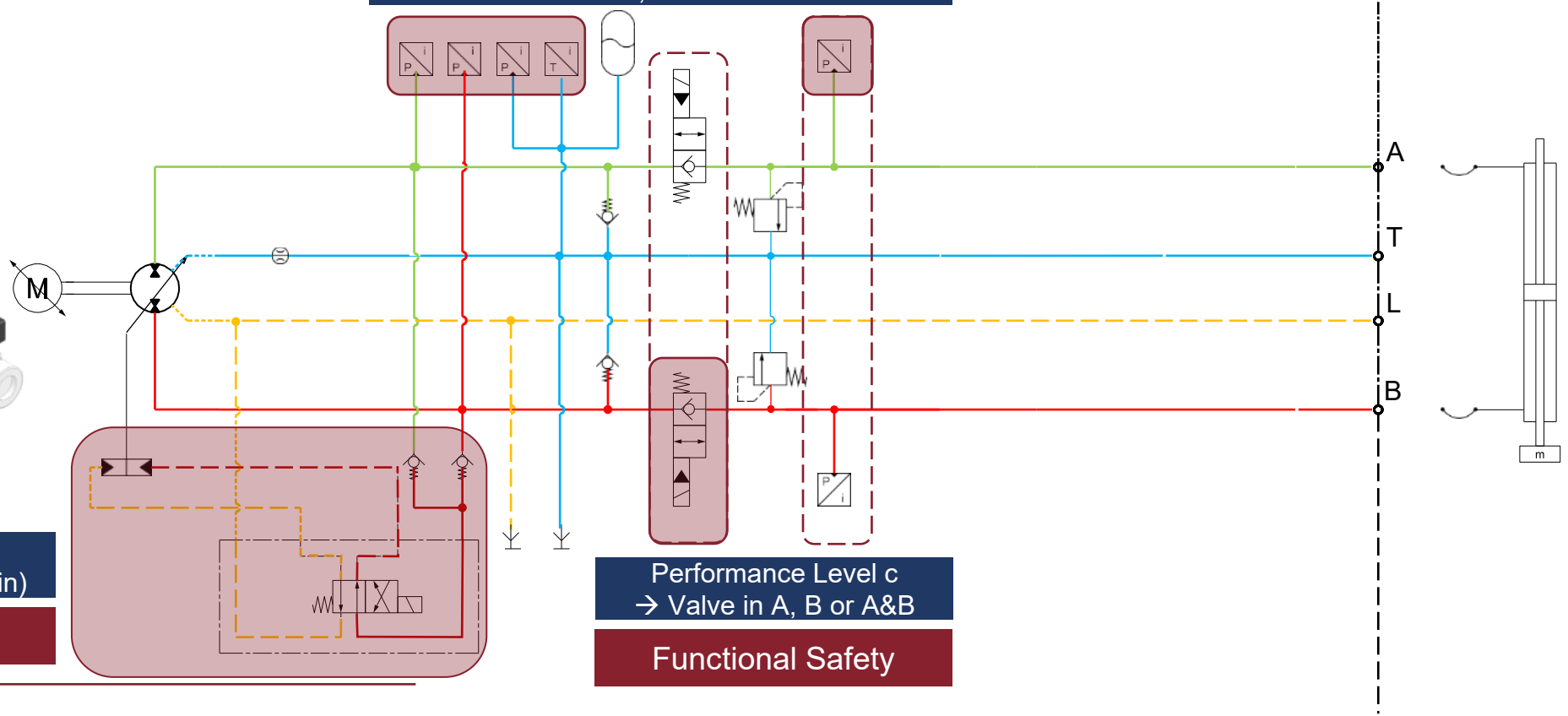


Dual Displacement
(Initial displacement = Vmin)

Pump adjustment

Sensor configuration

Standard + Additional pressure close sensor
→ in A, B or A&B



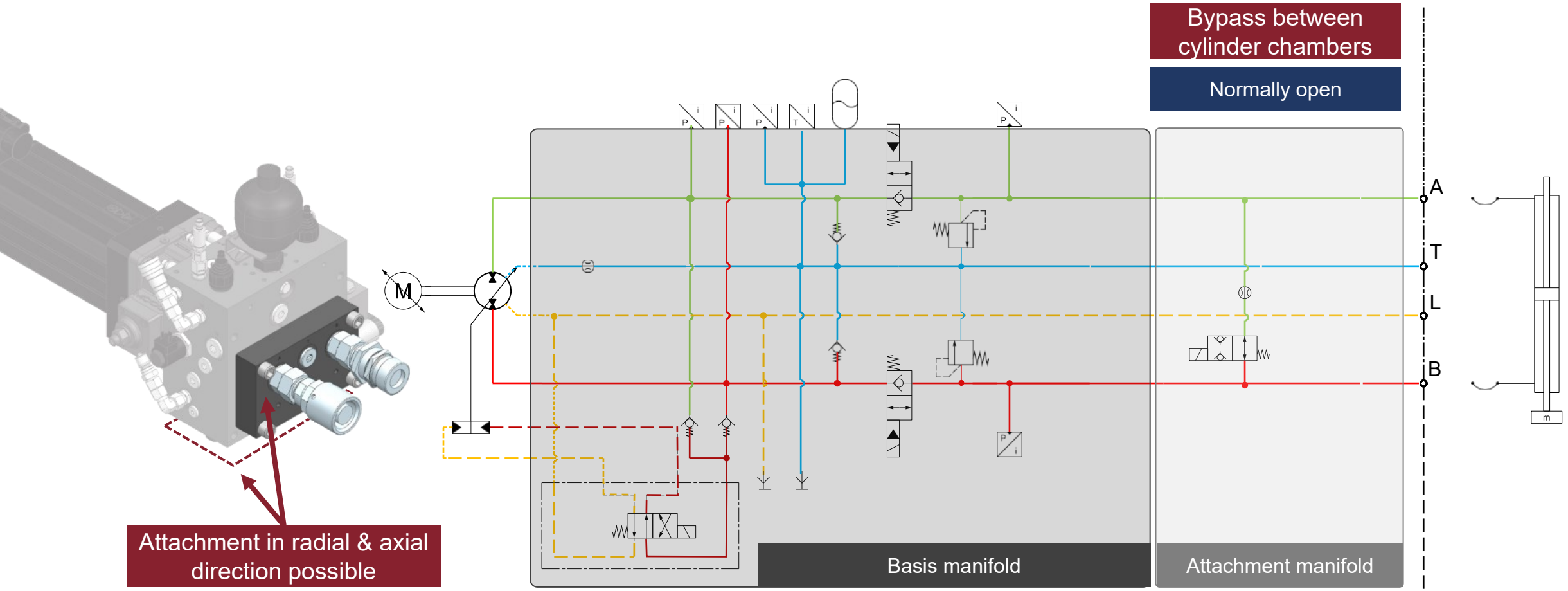
Performance Level c
→ Valve in A, B or A&B

Functional Safety

FUNCTIONAL CONCEPT

(1) Base configuration | (2) Options & Safety | (3) Attachment manifold

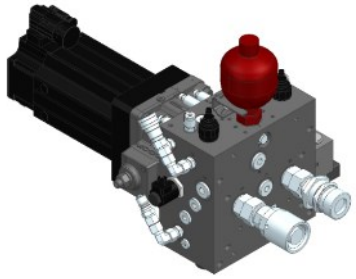
Back



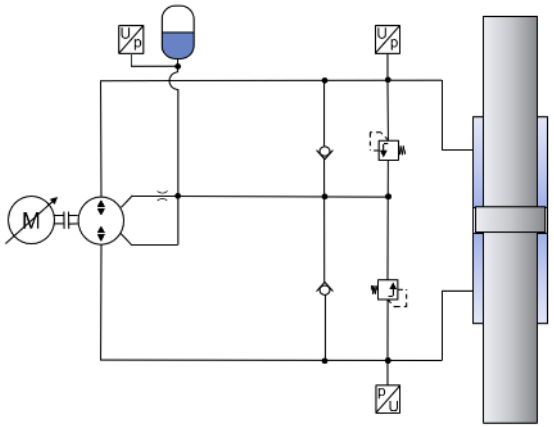
CLOSED VS. HALF-OPEN SYSTEM

Back

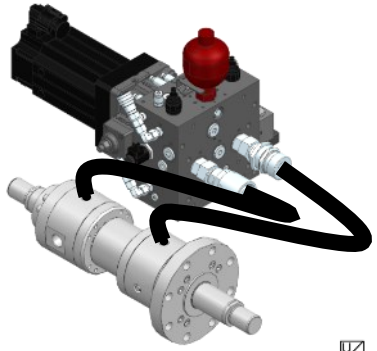
Self-contained system



- No HPU needed
- Very compact design



Half open system



- Pre-pressure up to 25 bar
- Optimal heat transfer