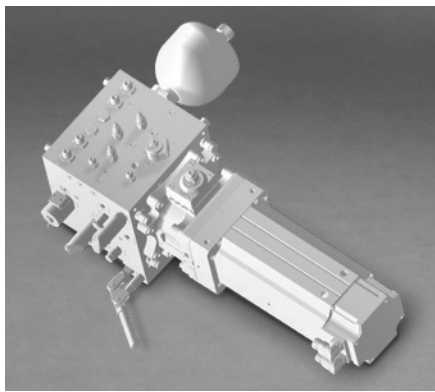


# ELECTROHYDROSTATIC ACTUATION SYSTEM

LOW SWaP, PERSISTENT, SCALABLE, SAFE



The roles, operating conditions and capabilities that are required of naval vessels are ever expanding, whilst its crew and signature must remain minimal. More powerful systems are being condensed in smaller volumes, thus creating challenges in terms of safety for the crew or survivability of the platform. As a result, prime shipbuilders are challenged to find solutions that reduce space, weight and power (SWaP) requirements whilst increasing capabilities. They are challenged to find capable systems that are simpler to integrate, operate and maintain.

Moog's Naval EHAS is a self-contained, power-on-demand and high-power-density actuation system. It enables the elimination of hydraulic infrastructure, fluid and componentry. Thus it reduces SWaP requirements, increases survivability, safety, resilience whilst simplifying integration. EHAS is a scalable platform, modular and able to generate high forces whilst retaining a low and efficient footprint.

Due to its efficiency and reduced maintenance needs, EHAS has a lower cost of ownership than traditional systems. Since the 1980s, Moog has delivered hundreds of EHAS in the aerospace, and various manufacturing industries.

## KEY FEATURES

- Equals if not exceeds the accuracy, speed, reliability and performance of traditional hydraulic systems
- Customisable and scalable to meet any safety, redundancy, force, speed or space requirement whilst maximising systems commonality
- Reduces space, weight and power by up to 40% in comparison to traditional actuation systems
- Increases survivability and persistence of the platform due to its self-contained nature, the reduction of vibro-acoustic emissions and the redundancy options
- Increases crew safety and reduces maintenance due to the elimination of hydraulic infrastructure and oil tank
- Enables a paradigm shift in naval design due to its self-contained nature and ease of integration



*Credit: Department of Defence*



*Credit: Austal Ships*



*Credit: Department of Defence*

# NAVAL EHAS

## PERFORMANCE

Feature	Specifications
Forces	Up to 60,000 kN - highly scalable
Flow rates	Up to 300 l/min - highly scalable
Acceleration	340 l/min/s to 715 l/min/s
Power supply	400VAC, 20 A to 800 A
Power density	20 kW/m <sup>3</sup> to 70 kW/m <sup>3</sup>

## OPTIONAL DESIGN FEATURES

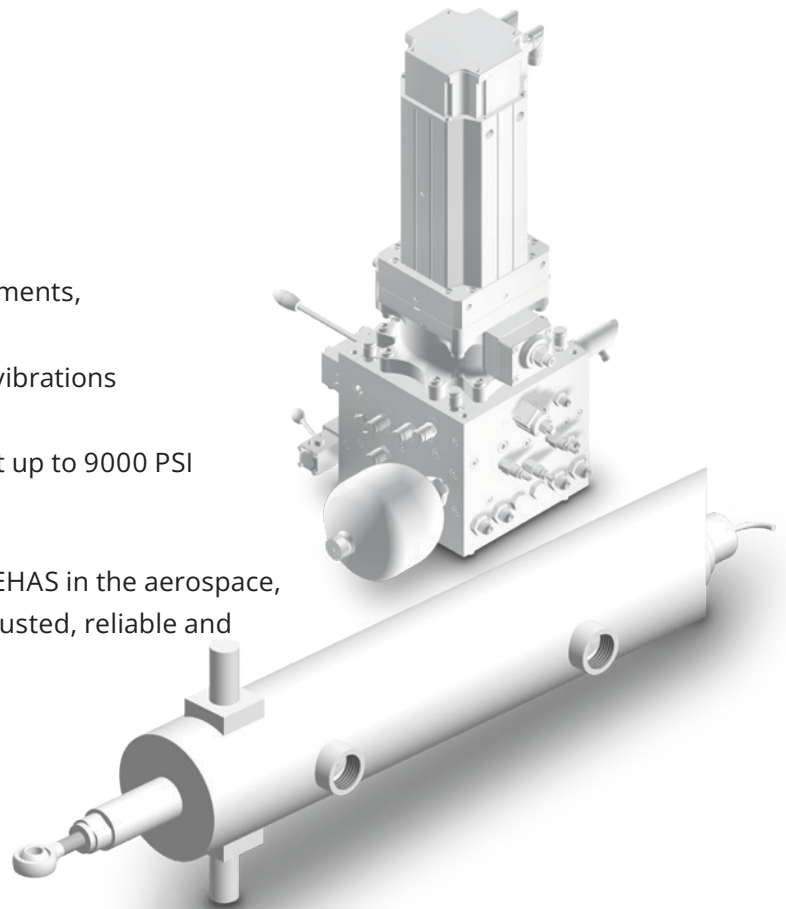
- Built-in hydraulic safety and lock-in functions
- On-field hydraulic recharge
- Power regeneration
- Status monitoring and preventive maintenance
- Redundancy features: primary / back-up arrangements, torque summed, speed summed
- MIL STD capability, resistance to high shock and vibrations
- Compliance to ship classification
- Pressure compensation for external environment up to 9000 PSI

## APPLICATIONS

Since the 1980s, Moog has delivered hundreds of EHAS in the aerospace, manufacturing and recently naval domain. It is a trusted, reliable and high-performance solution.

On naval ships, EHAS can be considered for:

- Actuation of stabilisers and trim tabs
- Actuation of steering systems
- Actuation of mission bay handling systems
- Actuation of ramps and elevators
- Actuation of deck cranes, davits and a-frames



**MOOG**  
SPACE AND DEFENSE GROUP

### AMERICAS

navalsystems@moog.com  
www.moog.com/defense



Moog Space and Defense

### AUSTRALIA

Info.australia@moog.com  
www.moog.com.au



Moog Inc.



@Moog\_Inc

### EUROPE

defenceurope@moog.com  
www.moog.com/defence



@Moog.Inc