

Hawk Electrohydraulic Actuator
Raising the standard in controls.





Transformative technology doesn't happen overnight.

This actuator revolution is a lesson in design evolution. It represents decades of hydraulics experience, industry insight and technology—all advancing into one industry-shaking solution: The MEA Hawk electrohydraulic actuator.

The MEA Hawk changes how you'll think about actuation.

MORE ACCURATE

Hawk provides positioning accuracy that's **10X BETTER** than traditional control valve actuators.

IMPROVES SAFETY

It provides **FAILSAFE OPERATION.**

COST EFFECTIVE

Hawk is designed for **LONGER MAINTENANCE INTERVALS.**

ENVIRONMENTALLY SOUND

It produces **ZERO EMISSIONS** during equipment operation.

Gain better control, in more places, using the MEA Hawk electrohydraulic actuator.

The MEA Hawk actuator is ideal for applications requiring high duty cycle, large thrust and torques, or fast stroking speeds. It is a modular electrohydraulic system that is easily configurable to suit specific requirements, including valve stroke length and rotary torque.



Digital simplicity:

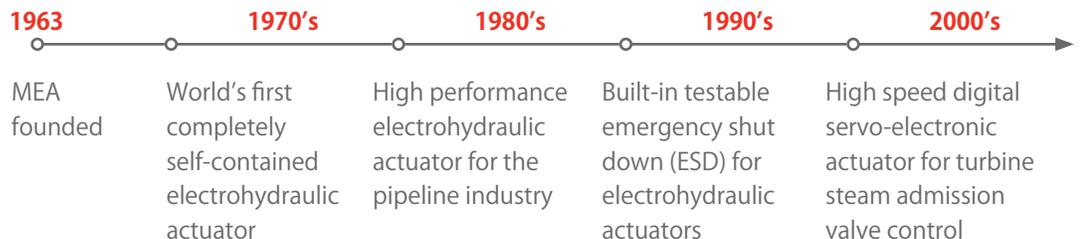
Hawk has 80% fewer parts than our traditional electrohydraulic actuators.



Recording history. Designing the future.

MEA Inc. has been making industrial hydraulic actuators that safeguard critical flow processes for more than five decades. We have been designing and manufacturing custom hydraulic, actuator, measurement and control systems since 1963.

Our product lineage includes hydraulic innovations for history's most challenging applications.



Maximum efficiency and productivity gains across multiple industries.

You can stop compromising between performance and cost. The MEA Hawk's patent-pending digital controls allow it to eliminate many of the components that lead to costly downtime in traditional electrohydraulic power and actuation systems. In applications that require a combination of speed, accuracy and reliability, the Hawk is your perfect choice.

Industries Served

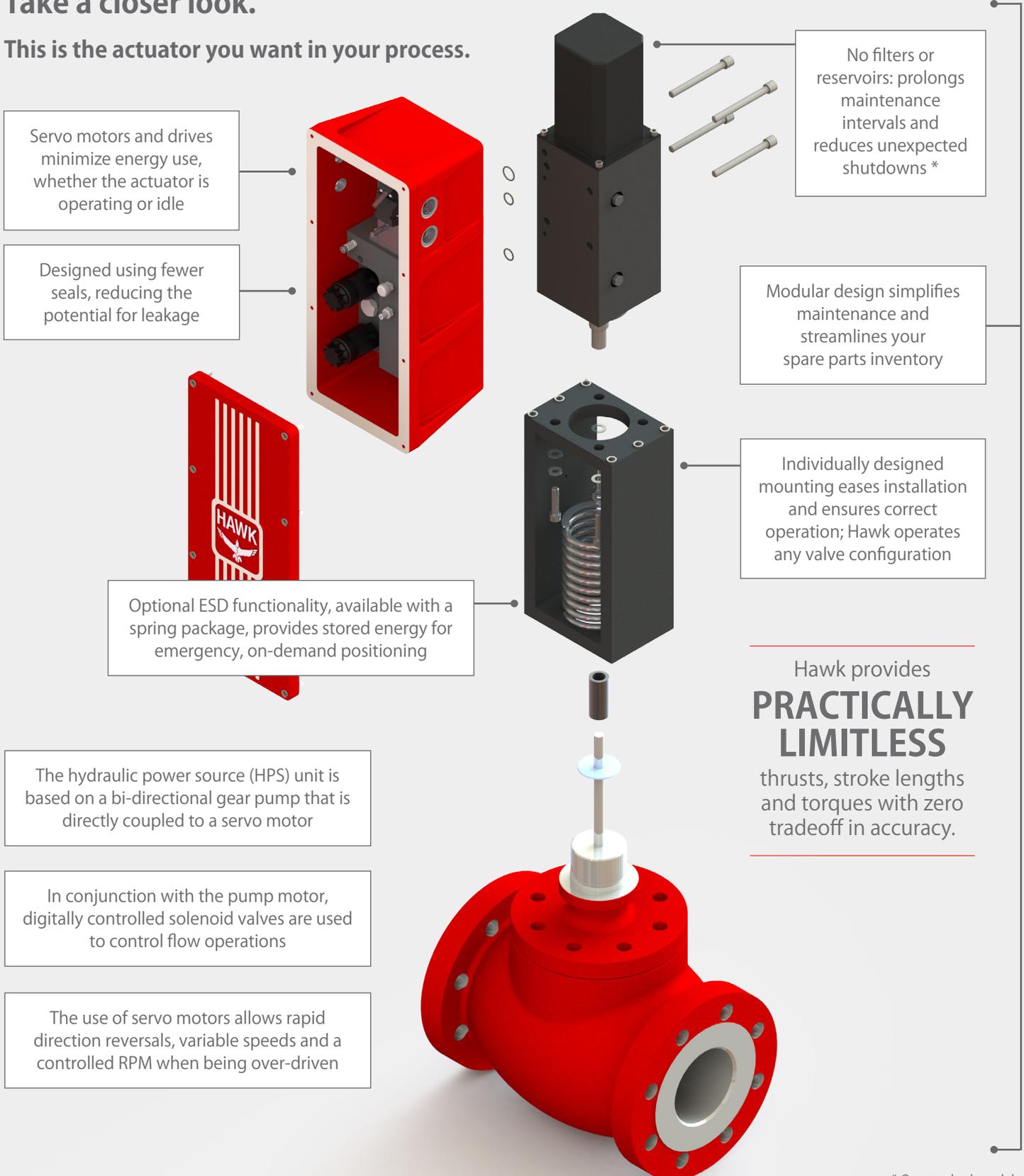
<p>MINING & METALS</p> <p>Even in the most taxing environments, Hawk provides the steady, reliable and exact control you need.</p>		Common Mining & Metals Applications		
		COKE OVENS	BLAST FURNACE	MISC METALS
		<p>Cross-over flow pressure valves</p> <p>Recycle fee gas valves</p>	<p>Damper pressure control valves</p> <p>Gas inlet pressure control valves</p>	<p>Combustion air and inlet dampers</p> <p>Suction and discharge</p>
<p>OIL & GAS / PIPELINES</p> <p>Hawk is ideal when you need precise pressure control and zero methane emissions. It is a drop-in replacement for the Fisher™ 350.</p>		Common Oil & Gas / Pipeline Applications		
		METERING & REGULATION STATIONS	COMPRESSION & PUMP STATIONS	MAINLINE
		<p>Meter back-pressure and balance control</p> <p>Bleed gas concerns</p> <p>Flow control valves</p> <p>Dead-end pressure reduction stations (e.g.: power plants)</p>	<p>Pump recycle</p> <p>Anti-surge valves</p> <p>Station recycle valves</p> <p>Hot gas bypass valves</p> <p>Fuel gas Pressure</p>	<p>Terminal inlet pressure control</p> <p>Large MAOP valves</p> <p>Crossover flow control valves</p>
<p>POWER GENERATION</p> <p>Hawk delivers the positioning accuracy that's required for optimized combustion and maximum boiler efficiency. Electric and pneumatic actuators cannot compete.</p>		Common Power Generation Applications		
		COMBUSTION CONTROLS	SEVERE SERVICE	ROTATING EQUIPMENT
		<p>Burner tilt drives</p> <p>Air damper drives</p> <p>FD/ID booster fan drives</p>	<p>Super-critical startup valves</p> <p>Superheat/reheat attemperators</p> <p>Feedwater control valves</p> <p>Recirculation valves</p> <p>Turbine bypass</p>	<p>Steam turbine pilot valves</p> <p>Main power piston upgrades</p> <p>Combustion turbine IGV</p> <p>Combustion turbine fuel gas/fuel oil valves</p>
<p>REFINING</p> <p>Actuation speed and precision are critical to keeping processes at optimal output, and Hawk delivers. An optional emergency shutdown valve (ESD) feature helps protect your equipment investment.</p>		Common Refining Applications		
		GENERAL SERVICE	COMPRESSION	SEVERE SERVICE
		<p>Damper drive controls</p> <p>Level, pressure, temperature & flow control</p> <p>Larger, high-thrust torque valves</p>	<p>Anti-surge valves</p> <p>Recycle valves</p> <p>Hot gas bypass valves</p>	<p>Side & plug valves in FCC</p> <p>Lift & turn/rotary in DCU</p> <p>Steam turbine bypass</p>
<p>WATER & WASTEWATER TREATMENT</p> <p>In a wide range of applications, Hawk works dependably, with pinpoint positioning accuracy. Hawk contributes to the safety and reliability of your plant.</p>		Common Water & Wastewater Treatment Applications		
		AIR & BLOWER	CONTROL VALVES	STORAGE
		<p>Air damper drives</p> <p>Aeration control</p>	<p>Headworks</p> <p>Sludge control</p> <p>Water distribution</p> <p>UV disinfection</p> <p>Reverse osmosis</p> <p>Ozone control</p>	<p>Tank level control</p> <p>Raw water influent flow control</p> <p>Clarifier level control</p>

Hawk simply works the way you want it to work.

The Hawk has a simple, modular design. With fewer moving parts, devices suffer less wear and tear over time. Preventative maintenance is required less often, and it is easier: Hawk's innovative design provides convenient access to key components. Its use of electronics—and a hydraulic pump—results in faster, more precise actuation. Bottom line: Hawk delivers safe, reliable and energy efficient operation of isolation and control valves.

Take a closer look.

This is the actuator you want in your process.



Servo motors and drives minimize energy use, whether the actuator is operating or idle

Designed using fewer seals, reducing the potential for leakage

Optional ESD functionality, available with a spring package, provides stored energy for emergency, on-demand positioning

The hydraulic power source (HPS) unit is based on a bi-directional gear pump that is directly coupled to a servo motor

In conjunction with the pump motor, digitally controlled solenoid valves are used to control flow operations

The use of servo motors allows rapid direction reversals, variable speeds and a controlled RPM when being over-driven

No filters or reservoirs: prolongs maintenance intervals and reduces unexpected shutdowns *

Modular design simplifies maintenance and streamlines your spare parts inventory

Individually designed mounting eases installation and ensures correct operation; Hawk operates any valve configuration

Hawk provides **PRACTICALLY LIMITLESS** thrusts, stroke lengths and torques with zero tradeoff in accuracy.

* On standard models

The intuitive user interface makes control easier.

Hawk's all-digital control electronics are easy to use. A simple touch screen setup makes it easier to find operational information, so you can make critical decisions faster.

- Hawk requires no external hardware or peripheral devices normally needed during installation setup
- Operating parameters are easily programmable, including speed, position limits, acceleration, deceleration and deadband
- Critical alarms and diagnostic features are built in and easily accessible via the touch screen

C Control Mode

M Manual Mode

D Diagnostics

A Alarms

S Setup

Current User: admin

Current Mode: Standby

Active Alarms

elec	Description	State	Time	Severity
fa...	Input Command (DCS) Missing or below 2ma	Triggered	11/13/2015 - 10:37:2...	6-critical
fa...	ESD is Active	Triggered	11/13/2015 - 10:37:2...	6-critical

Check/Uncheck All Filter: Hide Not Triggered Ack Reset Save

Current User: admin

Drive Diagnostics: **Current Mode: Manual**

A Customizable Alarming

M Manual Override

Deadband (In Pos): 0.10 %

Input Signal: 12.02 ma

Feedback Signal: 12.00 ma

Jog Rate: OPEN

C Automatic Control Mode

Current User: admin

Current Mode: Control

20.0

16.8

13.6

10.4

7.2

4.0

20:26:15 20:27:30 20:28:45 20:30:00 20:31:15

Current User: admin

Input Signal: 12.02 ma

Feedback Signal: 12.00 ma

Deadband: 0.10 %

Current Mode: Manual

D Performance Diagnostics

S Quick and Easy Setup Process

1. Engage valve

STEP 1: Use arrow buttons below to move actuator up/down or rotate to engage pin or connecting adapter

Up/Clockwise

Down/CCW

Jog Rate: 0.0 %

Reset Teach Points

Current User: MEA

Current Mode: Setup

2. Set open

STEP 2: Jog Actuator to highest position you would like to set at, and enter value or hit teach button.

Up/Clockwise

Down/CCW

Top Position: 0.00

Input: Feedback:

Teach Point 1

Jog Rate: 0.0 %

Current User: MEA

Current Mode: Setup

3. Set close...

STEP 3: Jog Actuator to lowest position you would like to set, then enter different DCS value or hit teach button. Teach Indicator will appear if successful.

Down/CCW

Up/Clockwise

Bottom Position: Input: Feedback:

Teach Point 2

Jog Rate: 0.0 %

Current User: MEA

Current Mode: Setup

BY USING SMART HMI CONFIGURATION, HAWK REDUCES CONFIGURATION AND SETUP TIME BY 50%.

Easily configured for specific applications.

MEA offers a complete line of high-performance, rugged linear and rotary electrohydraulic actuators and drives. Hawk actuators have a modular design with three customizable and interchangeable components.

STEP 1

DETERMINE YOUR VALVE REQUIREMENTS

Operationally capable of providing both basic movement and essential safety-related requirements.

STEP 2

CHOOSE YOUR CYLINDER ASSEMBLY: LINEAR OR ROTARY

Offering optimum speed and frequency response for specific application demands.

STEP 3

CHOOSE YOUR HYDRAULIC POWER SOURCE (HPS)

Available in multiple pump displacements to suit various speed requirements.

Hawk Linear Actuator

Designed for gate and globe valves and other linear actuation devices.

- Standard stroke lengths up to 60 in
- Standard thrusts up to 100,000 lbf
- Speeds up to 0.2 seconds per in

Larger rotation, stroke lengths, torques and thrusts available on request.



Hawk Rotary Actuator

This format is ideal for butterfly valves, ball valves and louver/dampers.

- Standard rotation up to 360 degrees
- Standard torques between 2500 lbf and 400,000 lbf
- Slew rates up to 0.3 seconds per 90 degrees



Linear Stroke Speeds, sec/inch

THRUST, lbf (N)	Hydraulic Power Source (HPS)					
	S	M	L	XL	MEGA	MEGA XL
2,500 (11,120)	2.3	0.7	0.4	0.2	NA	NA
3,000 (13,334)	2.8	0.9	0.5	0.25	NA	NA
4,500 (20,016)	4	1.3	0.6	0.3	NA	NA
5,000 (22,241)	4.5	1.4	0.7	0.35	NA	NA
5,500 (24,465)	5	1.6	0.8	0.4	NA	NA
6,000 (26,689)	5.5	1.7	0.9	0.45	NA	NA
7,000 (31,137)	6.2	1.9	1	0.5	NA	NA
8,500 (37,809)	7.5	2.3	1.3	0.65	0.3	NA
10,000 (44,482)	8.9	2.7	1.4	0.7	0.4	NA
25,000 (111,205) *	NA	7.6	3.8	1.95	0.9	0.5
50,000 (222,411) *	NA	11	5.4	2.7	1.4	0.7
75,000 (333,616) *	NA	14.9	7.4	3.7	1.8	1
100,000 (444,822) *	NA	26.3	13	6.5	3.2	1.7

Rotary Stroke Speeds, sec/90 degrees

TORQUE, lbf-in (N-m)	Hydraulic Power Source (HPS)					
	S	M	L	XL	MEGA	MEGA XL
2,500 (282)	4.1	1.3	NA	NA	NA	NA
3,300 (372)	5.3	1.7	0.8	NA	NA	NA
5,000 (564)	8.2	2.5	1.25	0.6	NA	NA
6,600 (745)	10.6	3.2	1.6	0.7	NA	NA
10,000 (1,129)	15	4.7	2.5	1.1	NA	NA
15,000 (1,694)	23.5	7.2	3.6	2.1	NA	NA
20,000 (2,259)	30	9.2	4.6	1.7	1.2	NA
30,000 (3,389)	NA	14.4	7.1	3.3	1.8	NA
50,000 (5,649)	NA	24	12	5.4	2.9	1.6
100,000 (11,289)	NA	NA	24	10.5	5.8	3.1
200,000 (22,596)	NA	NA	42	20.6	11.2	5.9
400,000 (45,193)	NA	NA	90	41	22.2	11.8

* Consult factory for longer and non-listed stroke speed options

Specifications and Options

TECHNICAL SPECIFICATIONS	
Power Supply	24VDC / 120VAC / 208VAC / 240VAC / 480VAC
Input Options	4-20mA / Pulse
ESD or Power Loss Failure	Open or Closed via Spring or Accumulator
Operating Temperatures (Actuator)	-20°F – 130°F (-29°C – 55°C) (Std)
	-40°F – 110°F (-40°C – 43°C) (Cold Weather Package)
	-75°F – 110°F (-60°C – 43°C) (Cold Weather Package plus Heater)
Operating Temperature (Controls)	-20°F – 120°F (-29°C – 49°C) (Std)
	-40°F – 120°F (-40°C – 49°C) (Cold Package)
Position Feedback	Non-Contact Electro-Magnetic Feedback – Passive 4-20mA Feedback (Std)
Limit Switches	Programmable Electronic (Std)
Hazardous Area Classification (Actuator)	CI 1, Div 2, grps A, B, C & D *
	CI 1, Div 1, grps C & D (OPT) *
	ATEX, II 3G EEx nA II T3 -40°C ≤ Tamb ≤ 65°C *
	ATEX, II 2G EEx 'd' IIB, T3 -40°C ≤ Tamb ≤ 65°C *

* Intertek ETL tested to CSA Standards

PERFORMANCE SPECIFICATIONS	
Duty Cycle	100% Modulating Service
Deadband	0.1%-2% (Std)
	As Low as 0.05% (Optional)
Repeatability	Up to <0.05%
Resolution	Up to <0.05%
Dead Time	<80ms
Stiction	~0
Overshoot	~0
Linear Thrust Output	2,000 lbf – 75,000 lbf (Consult Factory for Higher Outputs)
Rotary Torque Output	2,000 lbf-in – 400,000 lbf-in (Consult Factory for Higher Outputs)

AVAILABLE OPTIONS
Cold Weather Package
Partial Stroke Testing
Accumulator Powered ESD
Bilingual HMI Screens
Remote Control

Due to MEA's continuous product improvements philosophy, all specifications are subject to change.



COMPLETE CONTROL

ME A is the industry leader in hydraulic actuator systems, with a worldwide presence. For hydraulic solutions, there's no one better.

POWER CONTROL

ME A Eagle and Phoenix hydraulic power control units deliver reliability through redundancy.

TRADITIONAL HYDRAULIC ACTUATORS

ME A offers a full range of options, including lift and turn, rotary and linear hydraulic actuators.

AFTERMARKET SUPPORT

Partner with ME A for 24/7 technical support, planned maintenance, system upgrades, rebuilds and replacement parts.

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