

Actuators

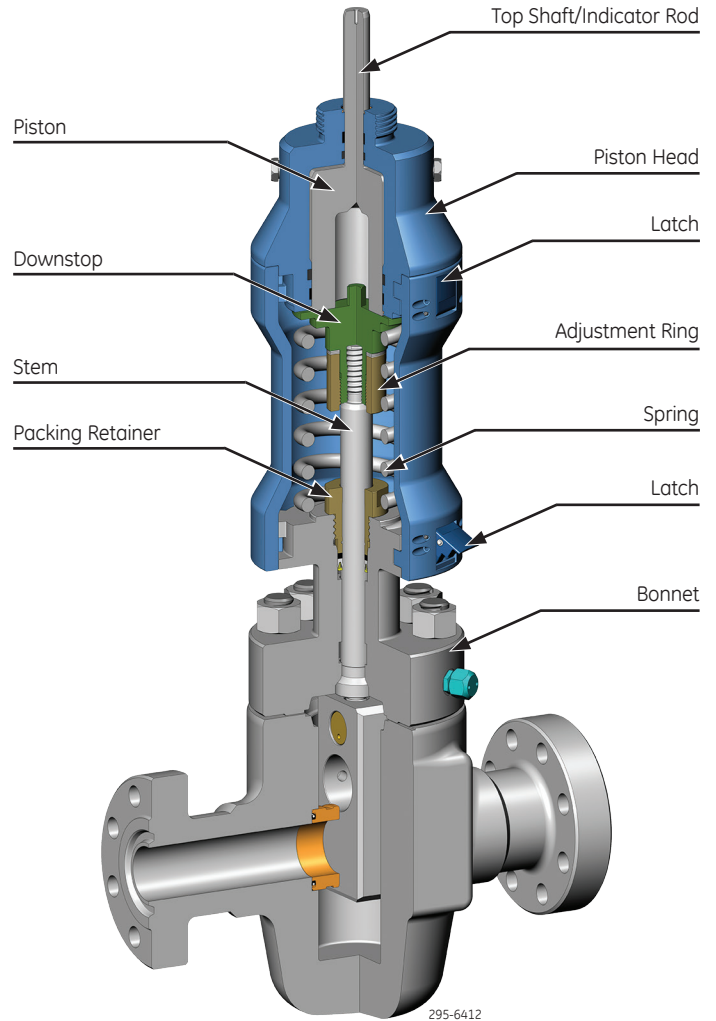
Pressure Control NoBolt™ MACH Hydraulic Actuator

GE's NoBolt™ MACH Hydraulic Actuator is the latest addition to the world-class NoBolt actuator product series. The NoBolt MACH hydraulic actuator is a compact design that provides greater production fluid management through its unique modular design, enhanced serviceability and improved reliability.

Suitable for both onshore and offshore applications, the NoBolt MACH actuator delivers reliable open/close performance for control of wellbore or pipeline fluids and hydrocarbons. The actuator is designed to operate when hydraulic pressure is applied to a piston, which forces a downward movement that compresses a coil spring and generates sufficient actuator force to open the valve. When hydraulic pressure is vented or lost, the spring returns the actuator to the fully up (closed) position. This fail-safe return action occurs independent of valve pressurization.

Features —

- Improved modular design
 - NoBolt patent-pending bonnet connection allows easy assembly and removal of actuator from valve
 - Compact design is ideal for constrained space applications; small footprint and envelope provide better working space efficiency
 - NACE compliant options available
- Improved reliability
 - No welded components used, providing uniform material integrity
 - Reduced failure modes due to fewer parts in its unique design
 - Increased backseat force to provide better metal-to-metal sealing
 - Fail-safe shutdown
- Improved maintainability and serviceability
 - Easy assembly and removal of actuator from valve for maintenance and servicing
 - Spring packaging designed and independently constructed to prevent release of preloaded spring and improve safety
 - Improved sealing life cycle due to conditioning of seal surfaces by stem scrapers



- Improved coatings on metal parts and spring significantly inhibit erosion and corrosion
- Fewer spare parts inventory required

Optional Devices and Accessories —

- Top and side mounted electric proximity switches
- Heat sensitive - fusible lock-open cap
- Manual override and hold open devices
- Non-rising stem design with window for visual confirmation of the valve's position



NoBolt™ MACH Hydraulic Actuator



Specifications —

NoBolt MACH Hydraulic Actuator	
Models	MACH3, MACH5, MACH7
Applicable Valve Sizing *	1-13/16" thru 6-3/8" (2,000 psi thru 20,000 psi)
API Specification	API 6A
Hydraulic Actuator	Standard Service
PR2	Annex F
Temperature **	-20°F to +250°F (-29°C to +121°C)
Maximum Working Pressure ***	6,000 psi (414 bar)
Maximum Test Pressure	9,000 psi (621 bar)

* Valve Sizing: Other valve sizes available upon request

** Temperature: Other operating temperatures available upon request

*** Maximum Working Pressure: Higher pressures available upon request

Actuator Sizing Chart —

Valve Bore	psi	Actuator		
		Model	Operating Pressure	Volume Displacement
1-13/16"	10,000	MACH3	.26 x WP + 141 psi (2,741 psi/189 bar)	16 in ³
		MACH5	.11 x WP + 61 psi (1,161 psi/81 bar)	38 in ³
	15,000	MACH3	.26 x WP + 141 psi (4,041 psi/279 bar)	16 in ³
		MACH5	.11 x WP + 61 psi (1,711 psi/118 bar)	38 in ³
	20,000	MACH3	.28 x WP + 141 psi (5,741 psi/396 bar)	19 in ³
		MACH5	.12 x WP + 61 psi (2,461 psi/170 bar)	45 in ³
2-1/16"	2,000	MACH3	.27 x WP + 141 psi (681 psi/47 bar)	17 in ³
		MACH5	.12 x WP + 61 psi (301 psi/21 bar)	41 in ³
	3,000	MACH3	.27 x WP + 141 psi (951 psi/66 bar)	17 in ³
		MACH5	.12 x WP + 61 psi (421 psi/30 bar)	41 in ³
	5,000	MACH3	.27 x WP + 141 psi (1,491 psi/103 bar)	17 in ³
		MACH5	.12 x WP + 61 psi (661 psi/46 bar)	41 in ³
	10,000	MACH3	.28 x WP + 141 psi (2,941 psi/203 bar)	18 in ³
		MACH5	.12 x WP + 61 psi (1,261 psi/87 bar)	42 in ³
	15,000	MACH3	.28 x WP + 141 psi (4,341 psi/300 bar)	18 in ³
		MACH5	.12 x WP + 61 psi (1,861 psi/129 bar)	42 in ³
2-9/16"	2,000	MACH3	.32 x WP + 141 psi (781 psi/54 bar)	21 in ³
		MACH5	.14 x WP + 61 psi (341 psi/24 bar)	50 in ³
	3,000	MACH3	.32 x WP + 141 psi (1,101 psi/76 bar)	21 in ³
		MACH5	.14 x WP + 61 psi (481 psi/34 bar)	50 in ³
	5,000	MACH3	.32 x WP + 141 psi (1,741 psi/121 bar)	21 in ³
		MACH5	.14 x WP + 61 psi (761 psi/53 bar)	50 in ³
	10,000	MACH3	.38 x WP + 141 psi (3,941 psi/272 bar)	22 in ³
		MACH5	.16 x WP + 61 psi (1,661 psi/115 bar)	52 in ³
	15,000	MACH3	.37 x WP + 141 psi (5,691 psi/393 bar)	22 in ³
		MACH5	.16 x WP + 61 psi (2,461 psi/170 bar)	52 in ³
20,000	MACH3	.38 x WP + 141 psi (7,841 psi/543 bar)	22 in ³	
	MACH5	.18 x WP + 61 psi (3,661 psi/253 bar)	57 in ³	
3-1/16"	10,000	MACH3	.48 x WP + 141 psi (4,941 psi/341 bar)	26 in ³
		MACH5	.20 x WP + 61 psi (2,061 psi/143 bar)	61 in ³
15,000	MACH3	.48 x WP + 141 psi (7,141 psi/497 bar)	26 in ³	
	MACH5	.20 x WP + 61 psi (3,061 psi/212 bar)	61 in ³	
3-1/8"	2,000	MACH3	.47 x WP + 141 psi (1,081 psi/75 bar)	25 in ³
		MACH5	.20 x WP + 61 psi (461 psi/32 bar)	59 in ³
	3,000	MACH3	.45 x WP + 141 psi (1,491 psi/103 bar)	25 in ³
		MACH5	.19 x WP + 61 psi (631 psi/44 bar)	59 in ³
	5,000	MACH3	.45 x WP + 141 psi (2,391 psi/165 bar)	25 in ³
		MACH5	.19 x WP + 61 psi (1,011 psi/70 bar)	59 in ³
4-1/16"	3,000	MACH3	.73 x WP + 170 psi (2,360 psi/163 bar)	32 in ³
		MACH5	.31 x WP + 73 psi (1,003 psi/70 bar)	75 in ³
	5,000	MACH3	.73 x WP + 170 psi (3,820 psi/264 bar)	32 in ³
		MACH5	.31 x WP + 73 psi (1,623 psi/112 bar)	75 in ³
	10,000	MACH3	.73 x WP + 170 psi (5,280 psi/364 bar)	32 in ³
		MACH5	.33 x WP + 73 psi (3,373 psi/233 bar)	78 in ³
15,000	MACH3	.73 x WP + 170 psi (7,040 psi/491 bar)	32 in ³	
	MACH5	.36 x WP + 73 psi (5,473 psi/378 bar)	79 in ³	
20,000	MACH3	.73 x WP + 170 psi (9,140 psi/633 bar)	32 in ³	
	MACH7	.16 x WP + 32 psi (2,432 psi/168 bar)	179 in ³	
20,000	MACH7	.20 x WP + 32 psi (4,032 psi/278 bar)	210 in ³	
	5-1/8"	3,000	MACH3	1.05 x WP + 198 psi (3,348 psi/231 bar)
MACH5			.45 x WP + 85 psi (1,435 psi/99 bar)	96 in ³
5,000		MACH3	1.05 x WP + 198 psi (5,048 psi/351 bar)	41 in ³
		MACH5	.45 x WP + 85 psi (2,035 psi/142 bar)	96 in ³
10,000		MACH3	1.05 x WP + 198 psi (6,708 psi/464 bar)	41 in ³
		MACH7	.20 x WP + 38 psi (638 psi/44 bar)	216 in ³
10,000	MACH5	.51 x WP + 85 psi (5,185 psi/358 bar)	96 in ³	
	MACH7	.23 x WP + 38 psi (2,338 psi/162 bar)	216 in ³	
6-3/8"	3,000	MACH5	.70 x WP + 109 psi (2,209 psi/152 bar)	116 in ³
		MACH7	.31 x WP + 48 psi (978/67 bar)	261 in ³
	5,000	MACH5	.72 x WP + 109 psi (3,709 psi/256 bar)	116 in ³
		MACH7	.32 x WP + 48 psi (1,648 psi/114 bar)	261 in ³
10,000	MACH5	.72 x WP + 109 psi (5,209 psi/361 bar)	116 in ³	
	MACH7	.36 x WP + 48 psi (3,648 psi/252 bar)	261 in ³	

Other sizes and models available upon request.



GE imagination at work

geoilandgas.com/pressurecontrol

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