

# Actuators

## Pressure Control Model RA Hydraulic Actuator

The Model RA (Reverse-Acting) Hydraulic Actuator is available in sizes ranging from 1-13/16" through 7-1/16" and pressure ratings ranging from 2,000 psi through 15,000 psi. The RA is designed with safety in mind and is adaptable to all major manufacturers' gate valves. In addition, self-contained systems are available.

The RA actuator is designed to operate when hydraulic pressure is applied between a stationary piston and a movable cylinder tube, causing the tube and spring to move downward, while opening a reverse-acting gate valve. When hydraulic pressure is vented or lost, the helical spring returns the actuator to the fully up (closed) position. This fail-safe return action occurs independent of valve pressurization. The actuator spring housing is a sealed unit which eliminates internal corrosion caused by atmospheric contamination, thereby:

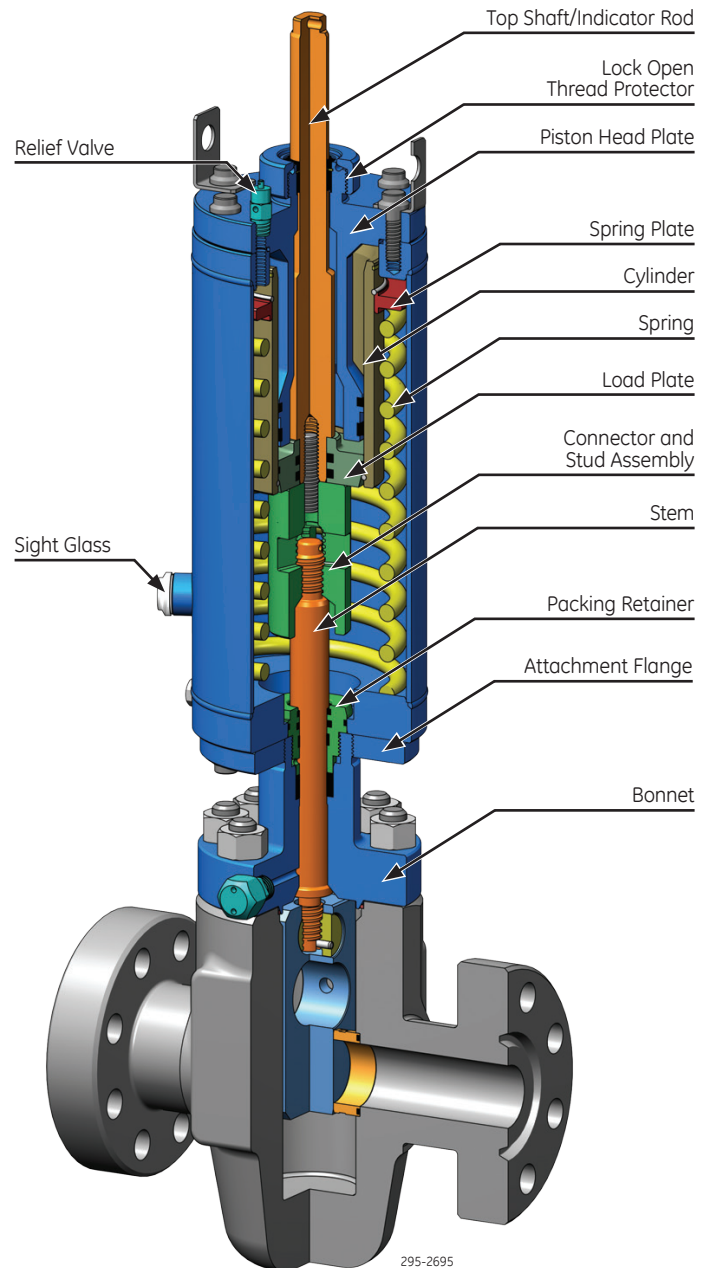
- Reducing costly down time,
- Reducing related maintenance, repair and spare parts costs, and
- Significantly extending actuator life

### Features —

- Safety
  - Spring housing is a welded construction that prevents release of preloaded spring
  - Visual position indicator rod
  - No harmful emissions
- Designed for long service life
  - Containment protection for longer service life
- Modular design
  - Easy to maintain

### Accessories —

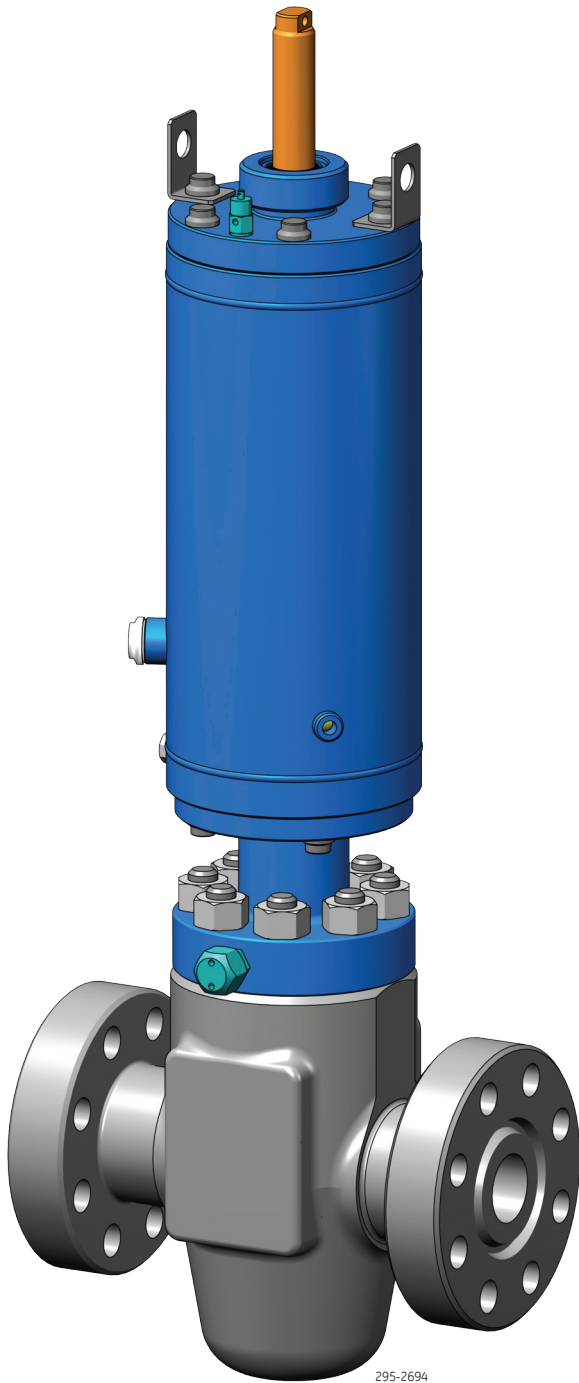
- Manual self-contained control system for remote applications (PC #04-0403)
- Hold open devices available in both manual and positive configurations with non-fusible, fusible and high thrust fusible options
- Hydraulic override
- Electric limit switches
- Clear stem protectors



- Electric powered control system
- Fusible plug accessory available to close valve in case of fire



# Model RA Hydraulic Actuator



## Specifications –

Model RA	
Models	RA-3, RA-4, RA-6, RA-8, RA-12
Applicable Valve Sizing	1-13/16" thru 7-1/16"
API Specification	API 6A
Hydraulic Actuator	Standard Service
PR2	Annex F
Temperature*	-50°F to +150°F (-46°C to +66°C)
Maximum Working Pressure**	3,500 psi (241 bars)
Maximum Test Pressure	5,250 psi (362 bars)

\* Temperature: -75°F (-59°C) upon request

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

## Hydraulic Actuator Sizing Chart –

Valve		Actuator		
Bore	psi	Model	Operating Pressure	Volume Displacement
1-13/16"	10,000	RA-3-11	.147 x WP + 183 psi (1,653 psi/115 bars)	29.77 in <sup>3</sup>
	15,000	RA-3-11	.147 x WP + 189 psi (2,394 psi/165 bars)	29.77 in <sup>3</sup>
2-1/16"	3,000	RA-3-11	.159 x WP + 172 psi (649 psi/45 bars)	29.77 in <sup>3</sup>
	5,000	RA-3-11	.159 x WP + 176 psi (971 psi/67 bars)	29.77 in <sup>3</sup>
	10,000	RA-3-11	.159 x WP + 183 psi (1,773 psi/122 bars)	31.20 in <sup>3</sup>
2-9/16"	15,000	RA-3-11	.159 x WP + 189 psi (2,574 psi/177 bars)	32.61 in <sup>3</sup>
	3,000	RA-3-11	.186 x WP + 172 psi (730 psi/50 bars)	35.44 in <sup>3</sup>
	5,000	RA-3-11	.186 x WP + 176 psi (1,106 psi/76 bars)	35.44 in <sup>3</sup>
	10,000	RA-3-11	.186 x WP + 183 psi (2,043 psi/141 bars)	36.86 in <sup>3</sup>
3-1/8"	15,000	RA-4-18	.130 x WP + 177 psi (2,127 psi/147 bars)	64.44 in <sup>3</sup>
	3,000	RA-3-11	.276 x WP + 188 psi (1,016 psi/70 bars)	42.53 in <sup>3</sup>
3-1/16"	5,000	RA-3-11	.276 x WP + 193 psi (1,573 psi/108 bars)	42.53 in <sup>3</sup>
	10,000	RA-4-18	.182 x WP + 185 psi (2,005 psi/138 bars)	71.34 in <sup>3</sup>
4-1/16"	15,000	RA-6-29	.134 x WP + 167 psi (2,177 psi/150 bars)	115.64 in <sup>3</sup>
	3,000	RA-4-18	.347 x WP + 190 psi (1,231 psi/85 bars)	89.75 in <sup>3</sup>
	5,000	RA-4-18	.347 x WP + 193 psi (1,928 psi/133 bars)	89.75 in <sup>3</sup>
	10,000	RA-4-18	.302 x WP + 201 psi (3,221 psi/222 bars)	89.75 in <sup>3</sup>
5-1/8"	15,000	RA-6-29	.185 x WP + 171 psi (2,946 psi/203 bars)	148.17 in <sup>3</sup>
	3,000	RA-4-18	.457 x WP + 202 psi (1,573 psi/108 bars)	104.94 in <sup>3</sup>
	5,000	RA-4-18	.457 x WP + 207 psi (2,492 psi/172 bars)	104.94 in <sup>3</sup>
6-3/8"	10,000	RA-6-29	.291 x WP + 177 psi (3,087 psi/213 bars)	259.77 in <sup>3</sup>
	15,000	Consult Engineering		
	3,000	RA-6-22	.608 x WP + 234 psi (2,058 psi/142 bars)	156.68 in <sup>3</sup>
	5,000	RA-6-29	.463 x WP + 181 psi (2,496 psi/172 bars)	205.77 in <sup>3</sup>
7-1/16"	10,000	Consult Engineering		
	15,000	Consult Engineering		
	3,000	RA-6-22	.735 x WP + 239 psi (2,444 psi/169 bars)	173.18 in <sup>3</sup>
	5,000	RA-6-29	.559 x WP + 186 psi (2,981 psi/206 bars)	227.67 in <sup>3</sup>
	10,000	Consult Engineering		
15,000	Consult Engineering			



GE imagination at work

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10/13, PC #04-0404 rev 5