

HYDRAULIC ACTUATOR



Model **HX/HXN**

In Fail-Safe, Wire Cutting,
Direct Acting and Control
System Configurations

For surface safety and other energy production,
distribution and storage applications.

- API 6A Monogrammed
- Highest Quality
- Delivered to Exact Customer Specifications
- Engineered for Years of Trouble Free Service



HXN

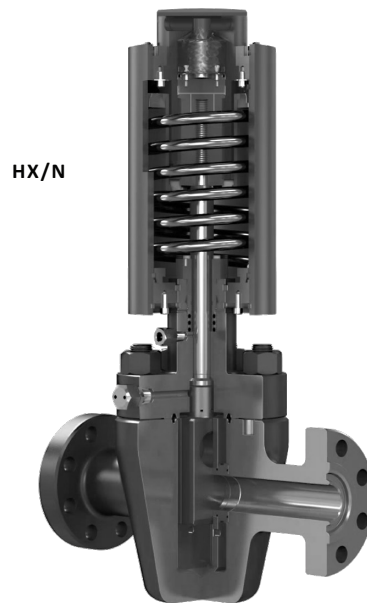
HX

Model HX/HXN - Hydraulic Actuator

Model HX actuators are designed to operate surface safety or shutdown valves on oil & gas wellhead, transmission, storage, manifold or other applications where fail-safe capability is required. Omni provides **API Monogrammed** surface safety valve assemblies, or actuator/bonnet assemblies ready to mount on valves from other manufacturers.

Model HX/HXN Features

- Available in fail-safe, wire cutting & direct acting configurations
- Can be Used for land or offshore installations
- Self-Contained Control Systems available
- Engineered to provide reliable service in a variety of operating conditions
- All non-metallic seals and other parts are easily replaceable
- Lightweight and designed for ease of maintenance.



Flexibility

The HX actuator can be adapted to operate valves from any manufacturer (interface information is required) and can be delivered with alternate materials of construction if required by field conditions.

Over-Pressure Protection

The HX comes equipped with pressure relief devices to protect personnel and guard against damage to the actuator in case of an over pressure condition. The pressure relief device is easily inspected and is field-replaceable.

Non-Pressurized Actuator Housing

The outer housings that are structural and protective only – they are not under hydraulic pressure. This helps protect personnel and equipment in the event of damage to the outer housing.

Corrosion Protection

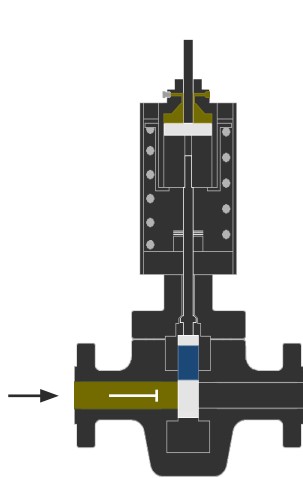
The HX's are internally and externally coated to prevent corrosion due to environmental conditions. All internal components are either stainless steel or are coated to prevent corrosion due to any contamination that might be present in the control pressure source.

Available Sizes			
Model	Size		Stroke
HX/HXN-30	3 1/16"		Up to 4 1/16" bore
HX/HXN-40	4 1/2"		Up to 4 1/16" bore
HX/HXN-60	6 1/2"		Up to 7 1/16" bore
HX/HXN-90	9"		Up to 7 1/16" bore
HX/HXN-110	11"		Up to 7 1/16" bore

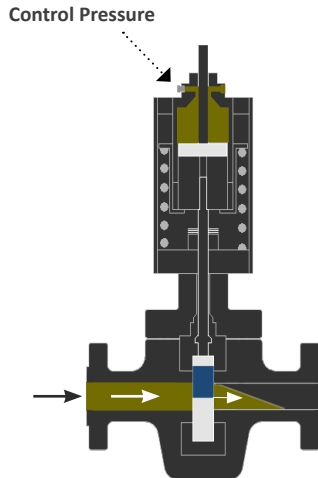
Model HX - Operational Stages



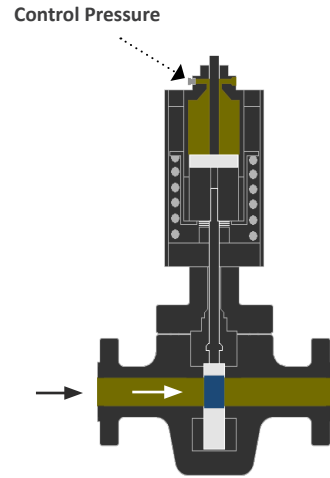
Fail “**CLOSED**” operation is depicted. Fail “**OPEN**” operation is available upon request.



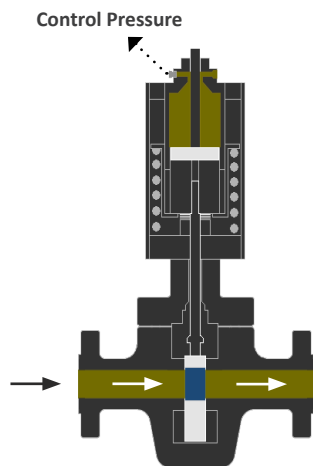
When no control pressure is applied to actuator, valve is in **CLOSED POSITION**
(Gate all the way up)



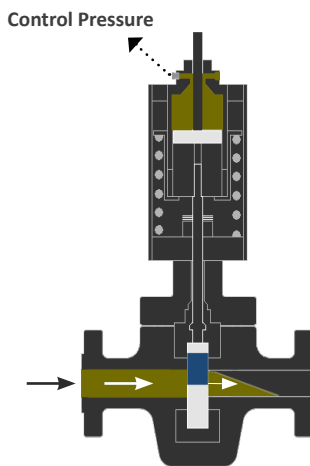
Upon application of adequate control pressure to the actuator, valve begins **OPENING**
(Gate moving down)



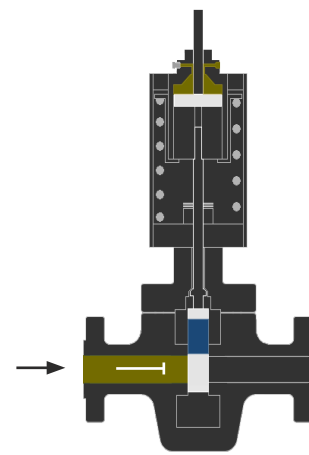
With continued application of adequate control pressure, valve moves to the **FULLY OPEN** position
(Gate all the way down)



Valve remains in **FULLY OPEN** position as long as adequate control pressure is present
(Gate all the way down)



Upon loss of control pressure, valve begins **CLOSING**
(Gate moving up)



Valve **FULLY CLOSES** & remains closed until application of control pressure to the actuator
(Gate all the way up)

Standard Actuator Specifications		
Maximum Operating Pressure	4,000 PSI	Pressure relief device on actuator is set at 4,000 PSI
API Material Class	AA/BB/CC	Not appropriate if control source contains H2S (is sour)
API Temperature Rating	P (-20 F to 180 F)	(-29 C to 82 C)

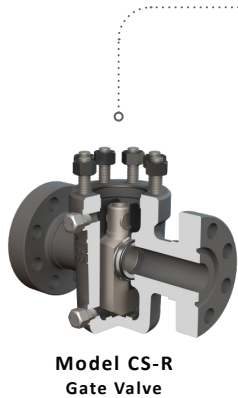
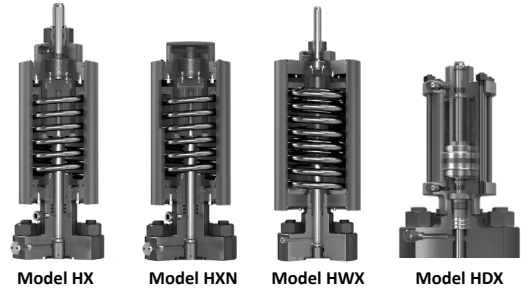
Available in API pressure ratings of between **2,000** and **15,000** psi.

Can be used in conjunction with our **Hydraulic**, **Pneumatic** or **Electric** actuators from most manufacturers.

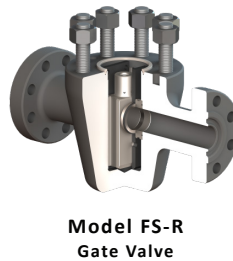
Model HX/HXN - with FS-R or CS-R Gate Valves

Valve Body Specifications

- » Model CS-R and FS-R surface safety valves with Model HX actuators, in single or tandem configurations are available in most API 6A material classes, PSL, PR and Temperature Ratings.
- » Model HX actuator/bonnet assemblies are built to customer specifications and are also available in most API 6A Material Classes. PSL, PR and Temperature Ratings.
- » All Model CS-R and FS-R surface safety valves with Model HX actuators are API 6A 21st Edition monogrammed equipment.
- » All Model CS-R and FS-R surface safety valves with Model HX actuators have successfully passed the API 6AV1 - Validation of Safety and Shutdown Valves for Sandy Service test and can be designated as API 6A-SSV Class 1 or Class 2 for use in Federal Offshore Waters.



Bore Size	Pressure (psi)	API Ring #
2 1/16"	2,000	R23
	3-5,000	R24
2 9/16"	2,000	R26
	3-5,000	R27
3 1/8"	2-3,000	R31
	5,000	R35
4 1/16"	2-3,000	R37
	5,000	R39
5 1/8"	2-3,000	R41
	5,000	R44
7 1/8"	2-3,000	R45
	5,000	R46



Bore Size	Pressure (psi)	API Ring #
1 13/16"	10,000	BX151
	15,000	BX151
2 1/16"	10,000	BX152
	15,000	BX152
2 9/16"	10,000	BX153
	15,000	BX153
3 1/16"	10,000	BX154
	15,000	BX154
4 1/16"	10,000	BX155

API-6A Specifications			
PSL-1 / PSL-2	(All Bore Sizes)	PSL-1 / PSL-2 / PSL-3 / PSL-3G	(All Bore Sizes 10,000 psi)
PSL-3 / PSL-3G	(Bore Sizes 2 1/16" - 4 1/16" only)	6A PSL-3 / PSL-3G	(All Bore Sizes 15,000 psi)
SSV Class 1	(All Bore Sizes)	6A SSV Class 1	(All Bore Sizes 10,000 or 15,000 psi)
SSV Class 2 - Sandy Service	(All Bore Sizes)	6A SSV Class 2 - Sandy Service	(All Bore Sizes 10,000 or 15,000 psi)

API-6A Non-NACE Trims				API-6A NACE Trims						
API Mat'l Class	AA	BB	CC	DD	EE-0,5	EE-1,5	EE	FF-0,5	FF-1,5	FF
Service	General	General	General	Sour	Sour	Sour	Sour	Sour	Sour	Sour
Trim	Standard	SS Trim	Full SS	Standard	SS Trim	SS Trim	SS Trim	Full SS	Full SS	Full SS
Corrosive	No	Slightly	Moderate	No	Moderate	Moderate	Moderate	Highly	Highly	Highly
Avail API Temp	L to X	L to X	P to X	L to X	L to X	L to X	L to X	P to X	P to X	P to X

Technical Notes

1	Nitriding is standard on all gates and seats. Tungsten Carbide, HF6 or other hardfacing techniques are also available.
2	Corrosion resistant alloy per NACE MR0175/ISO 15156.
3	Valves with API Temp Rating of X or Y will have the working pressure de-rated as per API 6A, Annex G
4	Teflon inserts on seat faces are standard in Omni valves. Metal-to-metal seats are available upon request.
5	Charpy impact test results are provided as required by API according to the temperature rating and material class.
6	Materials for sour service trims conform to latest edition of NACE MR0175. The acceptable limit of H2S should be noted after the trim level designation. Materials of construction for 0,5 and 1,5 are shown in the chart above however other partial pressure limits up to and including No Limit are available upon request. If an acceptable level is not noted in the valve trim/API Material Class designation it is understood to be "No Limit". 0,5 = 0.5 psi maximum limit of partial pressure of hydrogen sulfide 1,5 = 1.5 psi maximum limit of partial pressure of hydrogen sulfide
7	Omni reserves the right to use material class ZZ when customers request materials of construction that do not comply with current NACE MR0175/ISO standards.
8	Valves with API Temp Rating of X or Y will have high-temperature graphite packing and metal-to-metal sealing.

Model HX with EX & EXE Self-Contained Control System



EX Features & Details

The Omni Model EX is a self-contained hydraulic control system mounted onto the Omni HX actuator. The EX systems are designed to provide fail-safe ESD capability, are rugged, compact and easy to access in a field service environment. High quality components provide years of trouble free service even in the harshest of conditions.

The system energizes the actuator using its own hydraulic fluid reservoir. There is no need for access to a hydraulic power source at the well site or wherever the actuated valve is deployed. This makes it ideally suited for deployment in remote locations or locations with **limited power source options**.

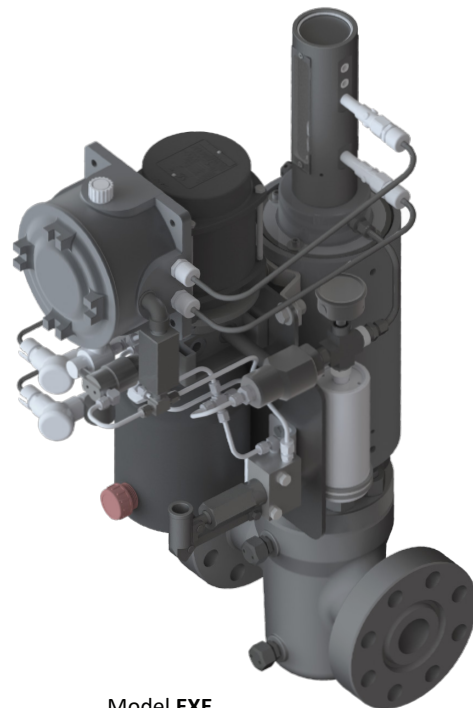


Model EX

EXE Features & Details

The Omni Model EXE is a self-contained hydraulic control system mounted onto the Omni HX actuators and utilizes electric power to control hydraulically actuated surface safety valves. The EXE systems are designed to provide fail-safe ESD capability, are rugged, compact and easy to access in a field service environment.

Components are designed to perform well and provide years of trouble-free service even in the harshest of operating conditions. The system is normally energized by an electric motor-driven pump, but has a manual pump that can be used in case power is lost.



Model EXE

Options

- High or Low Pressure Pilots (or both)
- Solenoid Valve (12, 24 or other vdc electric)
- Combination of Pilots and Solenoid
- Connectivity to SCADA or Other Controls
- Integrated Position Indication (Limit Switches)

System Specifications

Temperature Range	-20 to 180 °F
Reservoir Capacity	½ gal
Maximum Operating Pressure	3,000 psi



Options

- High or Low Pressure Switches (or both)
- Solenoid Valve (12, 24 or other vdc electric)
- Customizable ESD Logic
- Integrated Position Indication (Limit Switches)
- Connectivity to SCADA or Other Controls, Including
 - Programmable Logic Controllers
 - Remote Terminal Units
 - Local Operator Interfaces

System Specifications



Temperature Range	-20 to 180 °F
Reservoir Capacity	1 gal
Maximum Operating Pressure	3,000 psi
Electric Motor	Variable Max Amp, 1.8 watt continuous

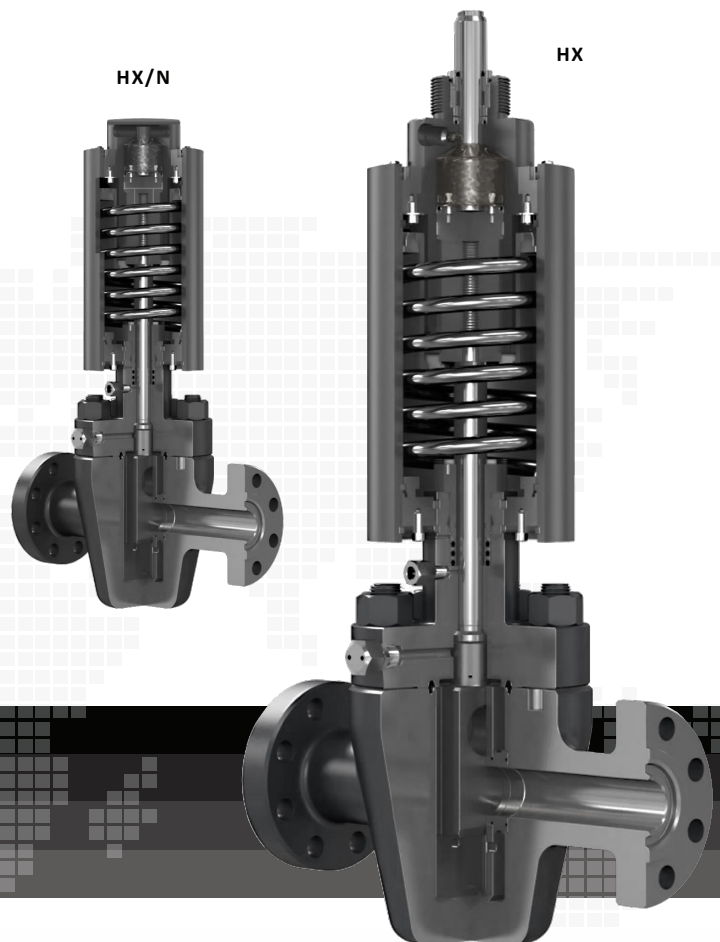


HYDRAULIC ACTUATOR

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RFQ REQUEST FOR QUOTE
omnivalve.com/rfq.php

Product Warranty

All products quoted are subject to omni valve's limited product warranty available at: omnivalve.com/warranty.php