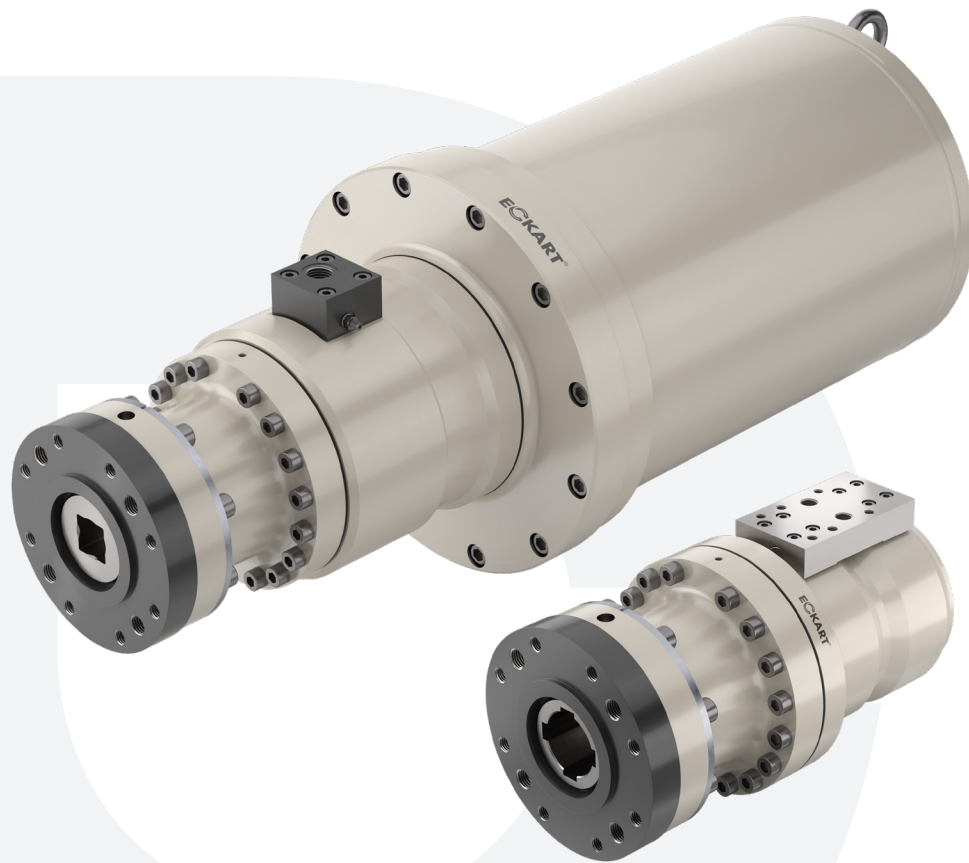




Valve Actuator

HyRAV[®] SG Series | Flex Series

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HyRAV® Series

Valve Actuator Overview

More powerful, compact, safer

The compact and concentric design of the HyRAV® hydraulic valve actuators utilize the helical gear principle. Reliable and powerful, the HyRAV® series provides a safe solution that is easily adaptable to all valves even in the most severe conditions.



single acting
spring return
fail-safe



double acting



Advantages at a Glance

- 20 actuator sizes
- Torques up to 2,210,000 in-lbs (250,000 Nm) at up to 3,045 psi (210 bar)
- Through the concentric design, no radial forces are transmitted to the valve
- Optimum cushioning protects the valve and actuator
- Easy installation and adjustment to each valve
- Maintenance free — no lubrication required
- Suitable for on/off, control, and fail-safe operation
- High repeat accuracy and very simple control of the flow rates
- Very fast rotation speed (i.e., 90° in 0.2 sec)
- Robust against extreme environmental conditions
- Compact size with high torque output
- Durable against vibrations
- Designed to operate at up to 3,045 psi (210 bar) which provides more torque in a smaller actuator compared to actuators operating at 1,950 psi (135 bar)

Series Types

HyRAV® SG

The HyRAV® SG, or Second Generation, is the standard valve actuator model offered by Eckart offering a compact, safe solution.



HyRAV® Flex

Named the Flex after its many options, this HyRAV® Series is highly customizable in many facets including control boxes, valve blocks, and more.



HyRAV® Series

Technical Data

Technical Data

Technical Data (Standard — Others on Request)	
Valve Actuator Type	Helical gear — double acting or single acting (spring return)
Max. Allowable Operating Pressure	210 bar / 3,000 psi
Min. Operating Pressure Required	5 to 10 bar / 10 to 145 psi
Angle of Rotation	Quarter turn / 0-90°, 120°, or 180°+
Position of Accuracy	< 0.5° of full scale
Medium	Standard hydraulic oil: mineral oil of group
Ambient Temperature	-25 to +70°C / -13 to +158°F
Protection Class	IP68
Valve Attachment Flange	EN ISO 5211
Double Acting Lifetime	>100,000 operations
Single Acting Lifetime (Fail-Safe)	Dependent on the desired spring package
Duty Rating	S1 – 100%
Operating Time Range	0.5 sec. to 200 sec.
Max. Speed Fail-Safe	As fast as 0.1 seconds (Dependent on the valve actuator size)
Certificates/Approvals	ATEX, SIL2/3, further in processing/planning, and as-required
Materials, Standard	Steel, GGG
Seal Material, Standard	PU / NBR

Applications

Industries	Applications
Power	Power plants (coal, gas, oil, nuclear) Hydroelectric power plants Geothermal power plants Solar thermal power plants Biogas power plants
Oil & Gas	Exploration, offshore Refineries Pipelines Tank farms
Water	Steel hydraulics construction Water treatment plants Seage treatment plants Drinking water distribution
Industrial & Special Solutions	Shipbuilding & Submarines Chemical / Pharmaceutical industry Food industry Air conditioning Steel mills



HyRAV® actuators can be customized to your application with seals, materials, and design modifications. Inquire with our engineering team how we can support your requirements.

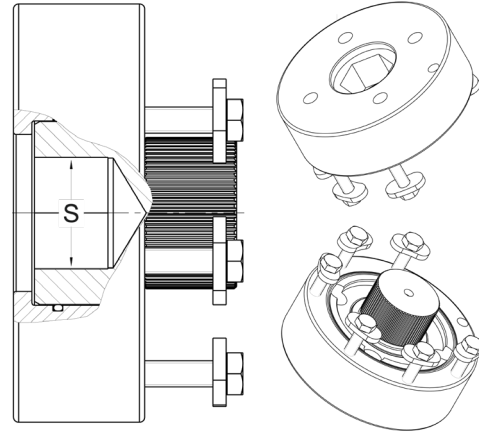
HyRAV® SG Series

Technical Data

Models

Types	
Single Acting	Double Acting
	

Connection Kit



Technical Data

HyRAV® SG												
HyRAV® Type	Valve Attachment Flange EN ISO 5211				Hollow Shaft With Feather Keys (S)				Hollow Shaft With Square (S)			
	Standard	Torque		Possible	Max. Diameter				Max. Size			lbs (kg)
		in-lbs (Nm) at 1,950 psi [135 bar]	in-lbs (Nm) at 3,045 psi [210 bar]		in. (H9)	mm (H9)			in. (H11)	mm (H11)		
SG 125	TBD	1,150 (130)	1,770 (200)	TBD	TBD				TBD			11.7 (5.3)
SG 250	F10	2,210 (250)	3,540 (400)	F05 – F07 – F10	0.984 +0.002 -0.000	25 +0.052 -0.000			0.944 +0.005 -0.000	24 +0.130 -0.000		22 (10)
SG 500	F12	4,420 (500)	7,080 (800)	F07 – F10 – F12	1.377 +0.002 -0.000	35 +0.062 -0.000			1.181 +0.005 -0.000	30 +0.130 -0.000		37 (17)
SG 1000	F14	8,850 (1,000)	14,160 (1,600)	F10 – F12 – F14	1.653 +0.002 -0.000	42 +0.062 -0.000			1.417 +0.006 -0.000	36 +0.160 -0.000		61 (28)
SG 2000	F16	17,700 (2,000)	26,550 (3,000)	F12 – F14 – F16	2.204 +0.002 -0.000	56 +0.074 -0.000			1.968 +0.006 -0.000	50 +0.160 -0.000		92 (42)

Single-Acting Spring Return Forces

HyRAV® SG Single-Acting Spring-Return Forces								
HyRAV® Type	Break to Open (BTO) Hydraulic		End to Open (ETO) Hydraulic		End to Close (ETC) Disc Spring		Break to Close (BTC) Disc Spring	
	1,950 psi (135 bar)	3,050 psi (210 bar)	1,950 psi (135 bar)	3,050 psi (210 bar)	1,950 psi (135 bar)	3,050 psi (210 bar)	1,950 psi (135 bar)	3,050 psi (210 bar)
SG125	970 lb-in (110 Nm)	2,330 lb-in (260 Nm)	589 lb-in (66 Nm)	1,330 lb-in (150 Nm)	360 lb-in (41 Nm)	1,330 lb-in (150 Nm)	820 lb-in (93 Nm)	2,390 lb-in (270 Nm)
SG250	1,860 lb-in (210 Nm)	2,920 lb-in (330 Nm)	1,150 lb-in (130 Nm)	2,220 lb-in (250 Nm)	730 lb-in (82 Nm)	2,220 lb-in (250 Nm)	1,500 lb-in (170 Nm)	2,920 lb-in (330 Nm)
SG500	3,540 lb-in (400 Nm)	8,900 lb-in (1,000 Nm)	2,170 lb-in (245 Nm)	6,030 lb-in (680 Nm)	1,680 lb-in (190 Nm)	4,430 lb-in (500 Nm)	3,050 lb-in (345 Nm)	7,680 lb-in (870 Nm)
SG1000	7,260 lb-in (820 Nm)	14,150 lb-in (1,600 Nm)	3,540 lb-in (400 Nm)	8,850 lb-in (1,000 Nm)	2,830 lb-in (320 Nm)	8,850 lb-in (1,000 Nm)	6,730 lb-in (760 Nm)	14,150 lb-in (1,600 Nm)
SG 2000	11,000 lb-in (1,250 Nm)	21,200 lb-in (2,400 Nm)	6,550 lb-in (740 Nm)	21,200 lb-in (2,000 Nm)	6,280 lb-in (710 Nm)	17,700 lb-in (2,000 Nm)	11,000 lb-in (1,250 Nm)	21,200 lb-in (2,400 Nm)

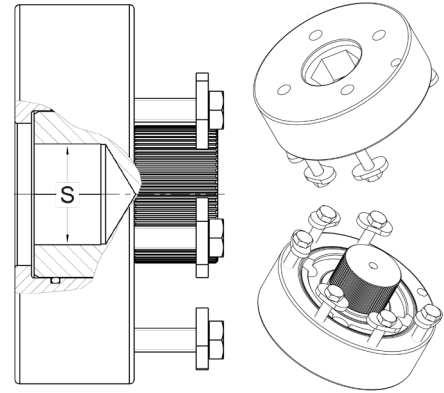
HyRAV® Flex Series

Technical Data

Models

Options	Types	
	Single Acting	Double Acting
• Electrical / Visual Position Indication • Manual Operation • Valve Blocks • HPU (Power Units)		

Connection Kit



Technical Data

HyRAV® Flex												
HyRAV® Type	Valve Attachment Flange EN ISO 5211			Hollow Shaft With Feather Keys (S)				Hollow Shaft With Square (S)				lbs (kg)
	Standard	Torque	Possible	Max. Diameter		Max. Size						
		in-lbs (Nm) at 1,950 psi [135 bar]		in. (H9)	mm (H9)	in. (H11)	mm (H11)					
AS000	F10	4,420 (500)	F07 – F10 – F12	1.102 +0.002 -0.000	28 +0.052 -0.000	0.866 +0.005 -0.000	22 +0.130 -0.000	44 (20)				
AS001	F12	8,850 (1,000)	F10 – F12 – F14	1.417 +0.002 -0.000	36 +0.062 -0.000	1.062 +0.005 -0.000	27 +0.130 -0.000	66 (30)				
AS002	F14	17,700 (2,000)	F12 – F14 – F16	1.889 +0.002 -0.000	48 +0.062 -0.000	1.417 +0.006 -0.000	36 +0.160 -0.000	99 (45)				
AS004	F16	35,400 (4,000)	F14 – F16 – F25	2.362 +0.002 -0.000	60 +0.074 -0.000	1.811 +0.006 -0.000	46 +0.160 -0.000	121 (55)				
AS006 sa	F25	53,100 (6,000)	F16 – F25 – F25	2.834 +0.002 -0.000	72 +0.074 -0.000	2.165 +0.007 -0.000	55 +0.190 -0.000	1,212 (550)				
AS008	F25	70,900 (8,000)	F16 – F25 – F30	2.834 +0.002 -0.000	72 +0.074 -0.000	2.165 +0.007 -0.000	55 +0.190 -0.000	253 (115)				
AS012	F30	106,200 (12,000)	F25 – F30 – F35	3.346 +0.003 -0.000	85 +0.087 -0.000	2.755 +0.007 -0.000	70 +0.190 -0.000	352 (160)				
AS016	F30	141,600 (16,000)	F25 – F30 – F35	3.858 +0.003 -0.000	98 +0.087 -0.000	2.952 +0.007 -0.000	75 +0.190 -0.000	440 (200)				
AS024	F35	212,410 (24,000)	F30 – F35 – F40	4.527 +0.003 -0.000	115 +0.087 -0.000	3.937 +0.008 -0.000	100 +0.220 -0.000	771 (350)				
AS032	F35	283,200 (32,000)	F30 – F35 – F40	5.118 +0.003 -0.000	130 +0.100 -0.000	4.527 +0.008 -0.000	115 +0.220 -0.000	992 (450)				
AS063	F40	557,500 (63,000)	F35 – F40 – F48	6.496 +0.003 -0.000	165 +0.100 -0.000	5.118 +0.009 -0.000	130 +0.250 -0.000	1,278 (580)				
AS100	F48	885,000 (100,000)	F40 – F48	7.874 +0.003 -0.000	200 +0.100 -0.000	6.496 +0.009 -0.000	165 +0.250 -0.000	1,984 (900)				
AS125	F48	1,110,000 (125,000)	F40 – F48	8.661 +0.003 -0.000	220 +0.100 -0.000	7.086 +0.009 -0.000	180 +0.250 -0.000	2,425 (1,100)				
AS185	F60	1,640,000 (185,000)	F48 – F60	9.842 +0.003 -0.000	250 +0.100 -0.000	7.874 +0.009 -0.000	200 +0.250 -0.000	3,306 (1,500)				
AS250	F60	2,210,000 (250,000)	F48 – F60	11.023 +0.003 -0.000	280 +0.100 -0.000	8.661 +0.009 -0.000	220 +0.250 -0.000	4,409 (2,000)				

The IC Difference

The Power Behind the Part

Connecting you to world-class quality hydraulic components

IC-Fluid Power, Inc. helps companies achieve sourcing excellence through a range of services including engineering and hydraulic component design, outsourcing partner selection and transition, strategic implementation and support, and logistics management. We help provide sourcing strategies for organizations looking to expand their current scope for sourcing hydraulic components.

We help engineers, purchasing departments and project managers source the world for hydraulic components without the need to invest significant time and resources developing an internal sourcing team, learning languages and cultures and establishing the direct relationships necessary to be successful.

Our experienced freight brokers ensure that freight moves quickly through customs and is delivered to your location on time, giving you peace of mind. IC-Fluid provides you with the solution, without the hassle.

Our Industries:

- Aerospace
- Agriculture
- Construction
- Energy
- Entertainment
- Marine & Offshore
- Material Handling
- Metals
- Military
- Mining
- Packaging
- Plastics & Injection Molding
- Transportation
- Waste-Management

Our Broad In-House Capabilities:

- Multi-lingual staff
- Deep product knowledge
- Experienced freight brokers
- Factory authorized and trained repairs
- Highly customized hydraulic systems
- Product demonstrations
- Project management
- Replacement parts
- Technical expertise and support





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