WE CONTROL WHAT MATTERS

Valve & control solutions for gas processing plants

RAMÉN

Industrial Control Valves and Regulators

Ramén Valves

Control Made in Sweden

Industries

Ramén Ball Sector Valve Type KS, designed and manufactured in Sweden was introduced in 1967 and since then thousands of valves have been installed in:

- Pulp and paper industry
- Mining industry
- Chemical industry
- Oil and gas industry
- Mineral ore processing plants
- Steel mills
- Cement industry
- Pharmaceutical industry
- Water- and waste water treatment plants
- Power, heating and cooling plants

The design and construction technique of Ramén KS series are based on long and diversified practice in harsh applications and environments. Ramén KS has proved to be advantageous for tight shut off and for throttling control of gases, liquids and slurries at moderate pressure and temperature conditions.

We handle

Hydrocarbon Gases
Natural gas and heavier cuts C2+

Industrial Gases
Oxygen, ammonia, hydrogen, Carbon dioxide, Chlorine

Off-Spec Gases
Corrosive and dirty associate gas, flare gases, sour gas and heavier hydrocarbons (C2+)

Gases and vapours
Instrument and compressed air, Nitrogen and steam, corrosive vapors

Cryogenic
LNG

Controlability simpler, wider and less cost

Quarter turn movement gives simpler and less expensive control possibilities. The trunnion design with the significant elliptical to circular opening enables 300:1 rangeability and gives a chance for process designers to avoid higher required quantities of valves, providing an accurate wide range and affordable control.

Reliability solid design for minimum OPEX

Compact design with protected stem gives an excellent maintenance free choice for users in heavy industrial areas. Rigid designed valve made of high quality materials guarantees a long life time, high performance valve with optimized life cycle cost. The unique Ball Sector design enables a constant seat support and seat protection in open position. With tight shut off and self draining construction it creates a safe operation for all types of isolating and modulating applications. Simple and quick installation, compact design and minimum space requirement makes the Ball Sector Valve to a unique option for revamping and debottlenecking projects.

Flexibility simply fit

Ramén Ball Sector valves can easily be fitted with an electrical, pneumatic, hydraulic or hybrid actuator. Valves can be simply ordered in wide range of materials like rubber lined carbon steel, stainless steel, Duplex, super Duplex, SMO, Hastelloy and titanium. The Ball Sector KS 25-250 standard connection is wafer design to eliminate cost for fixed flanges and to save our environment when transporting from factory to sites all over the world. The KS 300 comes with flanges. On request Ball Sector Valves can be delivered in different styles; wafer, flanged, welded or threaded according to ANSI, DIN/EN, ISO, API, JIS or other standards.

Ramén Ball Sector valves are made of high quality and certified materials based on the client requirements like ISO/EN or ASME material certifications. Ball Sector valves can be fitted with noise reduction trims, to comply with different standards for noise limits. Ramén KS valves can also be certified by different third party/notified bodies if required.

Sustainability intelligent design, environmentally friendly

Ramén KS valves presents a creative design to minimize the required material of construction, reducing the environmental impact. Maintenance free valves with no consumables leaves an evironmentally friendly valve through the plant life cycle. Ball sector valves, provide higher C_v (K_{vs}) value compared to other competitor valves which can substantially reduce the size of piping, saving cost and our environmenrtal resources at the same time.

Construction principle

Ramén Ball Sector Valve is made from a half ball sector which via two shafts is journal led in the valve body. One part of the ball sector sphere is used for shut-off. The other part of the sphere has a hole with a diameter, which is about 80% of the nominal valve size.

The ball sector is turned through 90° on operation from open to fully closed. The shape of the valve opening (flow area) is thereby changing from fully circular to elliptical. The circular opening reduces the risk of plugging and is less subject to wear in throttling position than the more slot-like flow in certain other types of control valves.

Throttling control characteristics

It is important to observe the difference between inherent valve flow characteristic at constant pressure drop and installed valve flow characteristic at varying pressure drop. The left hand diagram below (Fig. 1) presents the inherent flow characteristic of Ramén KS for air and water when pressure drop is constant. It is near to equal percentage. Shown also for comparison is the characteristic of a linear valve.

The right hand diagram (Fig. 2) presents the installed characteristic for the same valves when installed in a control loop where the valve pressure drops increases when the valve is closing. An equal percentage characteristic becomes more like linear. A linear characteristic becomes more like quick opening. The more the pressure drop is changing for a certain change of flow, the more the installed characteristic is altered. The comparison shows that the installed flow characteristic of Ramén KS is very suitable for the majority of all control valve installations with its equal percentage characteristics.

Inherent flow characteristic at constant pressure drop

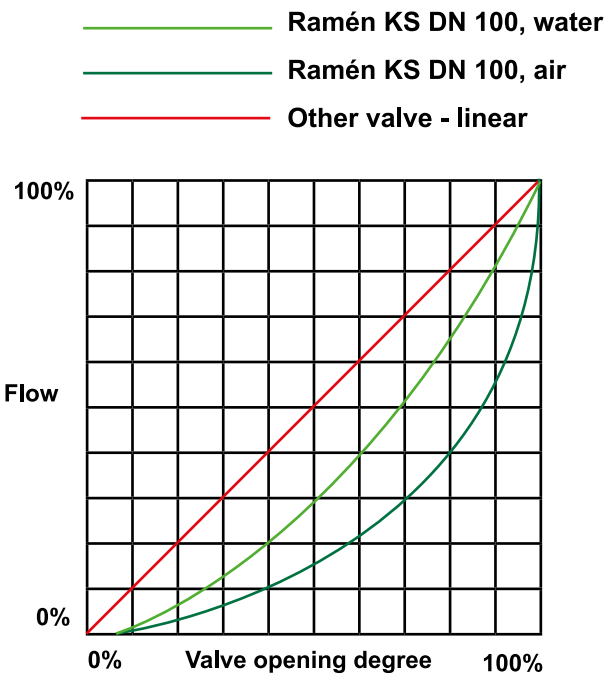


Fig. 1

Example of installed flow characteristic with increasing pressure drop on closing valve

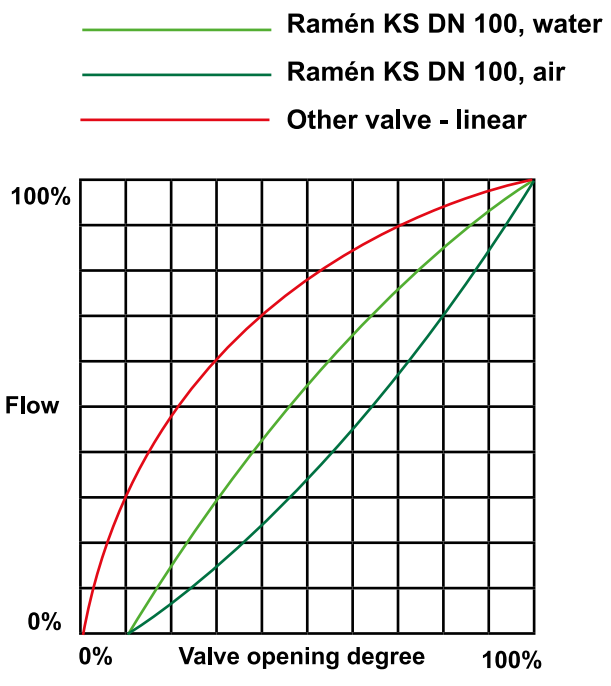


Fig. 2

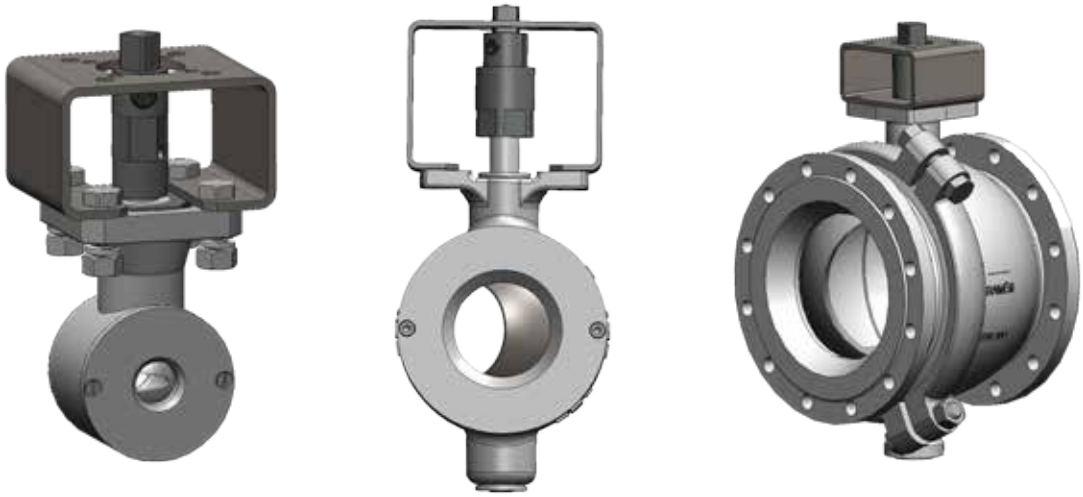
Technical specifications

DN		25	40	50	80	100	150	200	250	300
K_{vs} [m^3/h]		0,3-25	34 / 64	94	255	390	810	1365	3840	3840
C_v [gpm]		0,25-21	40 / 75	110	300	390	950	1600	2600	4500
Actuator torque [Nm]	Recommended*	20-50	30-90	30-90	80-200	80-200	160-400	160-400	250-600	700-1200
	Max.	100	100	100	200	200	400	400	700	2000
Max Δp @ 170°		31	31	31	19	19	12	12	12	12

**The lower value of the torque range can be used for on-off applications for clean media at normal temperatures. The higher value of the torque range shall be used for pneumatic actuators with positioner when high control accuracy is needed or for dirty/sticky media.*

Technical information

Design		Flangeless, wafertype (size DN 300 flanged)	
Nominal sizes		DN 25 - DN 300	1”-12”
Material	Body	EN 1.4408, SS 2343	AISI 316
	Shafts	EN 1.4460, SS 2324	AISI 329
	Ball Sector	EN 1.4408, SS 2343	AISI 316
	O-rings	Viton®	
	Bearing	Rulon®	
Nominal pressure	DN 25 - DN 50	PN 40	300 lb
	DN 80 - DN 100	PN 25	150 lb
	DN 150 - DN 300	PN 16	150 lb
Fluid temperature		Max 250° C	Max 480° F
Characteristic		Equal percentage	
Rangeability/Rotation angle		300:1 / 90°	
Seat		PTFE (carbon/graphite reinforced), stellite, PEEK	
Options	O-rings	EPDM, Nitril, Kalrez®	
	Alloy steels	316L, SMO, Hastelloy, Duplex, Super Duplex, Titanium	
	Other	Rubber lined carbon steel	



Ramén KS DN 25/80/300, 3D animations

Automation options*

Ramén KS control valve with electrical step motor for precise control and highest rangeability.

Ramén KSG rubber lined control valve with pneumatic actuator and electro/pneumatic positioner.

Ramén KS control valve with electrical actuator for control with integrated positioner.

Ramén KS control valve with electric actuator with feedback and limit switches.

**We offer various customized actuator and positioner options according to clients specifications.*

Applications

Fuel Oil Distribution

Water & Waste Water Treatment

Fuel Gas

Gas Recovery Systems

Version 1.0 160816 | Subject to changes

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