

## Instruction and parts list Ramén Rubber Lined Ball Sector Valve Type KSG

### General description



*Ramén Ball Sector Valve type KSG*

Valve type KSG is especially intended for use on abrasive, but not corrosive, slurries and cold water suspensions. The moving element of the valve, item 3, is a sector of a ball with shafts journaled in the valve body. On 90-degree rotation it alters the flow area from fully open to tight shut-off. The outlet ring, item 2, is providing a rubber lip that tightens against the ball sector in closed position. Valve body, ball sector and outlet ring are rubber lined on almost all wetted parts. The ball sector valve is primarily intended for throttling control but can also be used for two-position on-off control. It is tight in both flow directions for a maximum delta P= 3bar. Maximum working pressure is 5barg.

### Operation

The ball sector valve is a low torque valve, not affected by dynamic forces in throttling position. It can be equipped with:

- Lockable hand lever. Option with flow scale 0-100% available.
- Worm and gear drive unit with handwheel
- Pneumatic cylinder for on-off or throttling control with positioner
- Electric actuator for on-off or throttling (position adjusting type) control

## Installation

The valve body KSG is flangeless and should be mounted between flanges according to ISO-PN10 or ANSI-125LB standard. No flange gaskets are required thanks to the rubber lined body surfaces. The valve is by the manufacturer delivered with a special silicon grease on the rubber seat and ball sector sealing surface. Do Not Remove eventual excessive grease. It is needed for operation on service bench and start-up.

Recommended flow direction is with the throttling orifice on the outlet side of the valve body as indicated in sectional drawing. Thereby lowest flow velocity and abrasion in valve body will be achieved. Eventual wear will normally occur only on outlet ring and ball sector which are easy to replace if necessary. It is recommended that wetted parts of downstream pipe near the valve are rubber lined in those cases where unlined pipes of steel are worn through too quick in the severe applications.

A flanged valve body type KSGF is available if required to facilitate mounting of the valve with outlet pipe on tank bottom applications. Flanges are then mounted with tie rods on the valve body. Face to face dimensions are the same as for type KSG.

<b>Pressure rating:</b>	Maximum 500kPa (5 bar).
<b>Pressure drop:</b>	Maximum about 300kPa (3 bar) depending on temperature and nature of abrasive flow material.
<b>Temperature rating:</b>	Maximum 40 – 60 degr C or lower depending on velocity and the nature of abrasive flow.

## Maintenance

Ramén type KSG rubber lined Ball Sector valve is supposed to be used to control cold water with hard particles in suspension and does not require regular lubrication or maintenance. Ball Sector (3), outlet ring (2) and o-rings 13/14/16 may be replaced when needed. Use silicon grease as suggested below under the below head line "Reassembly". Disassembly and reassembly of the valve may be done as described below. Spare parts may be ordered by specifying valve type (KSG), body size DN with orifice size, item number and part description per enclosed spare parts list and drawing.

## Disassembly

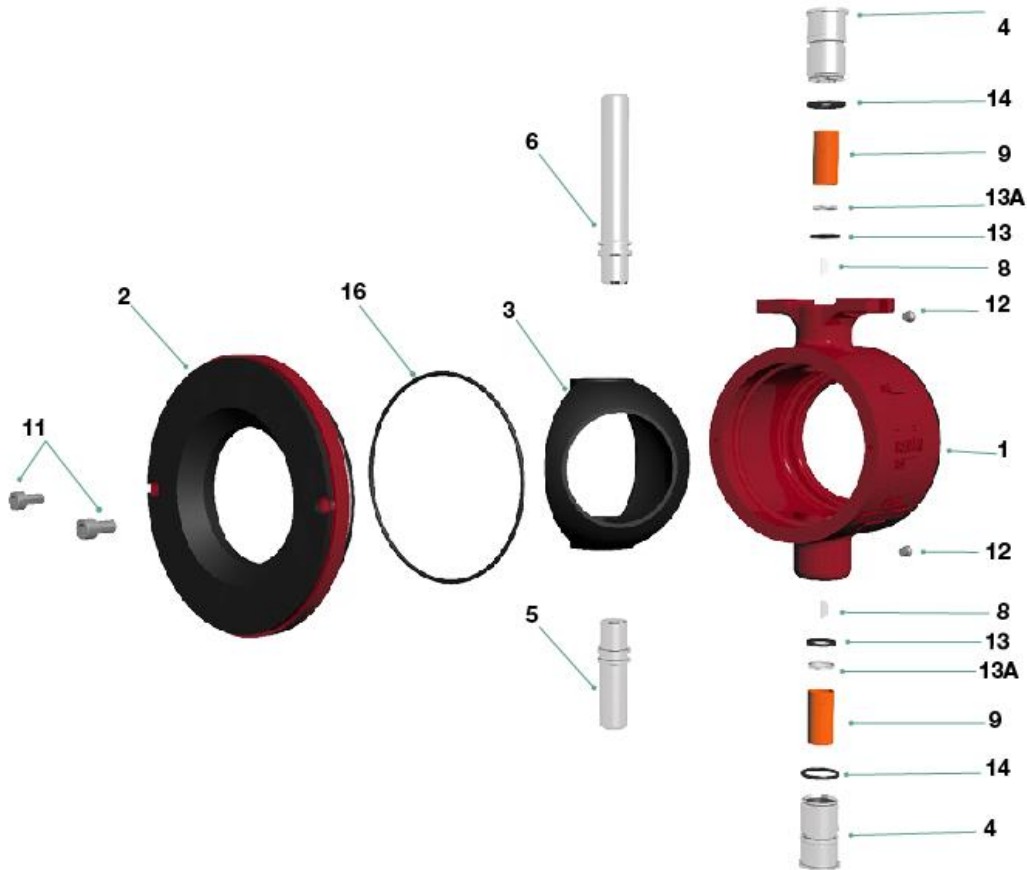
- a) Remove screws item 11, outlet ring item 2 and O-ring item 16.
- b) Unset screws item 12 and remove bearing sleeves item 4.
- c) Dismount drive shaft item 6.
- d) Push out shaft item 5 by means of a suitable rod or tube which can be inserted through the hole where the drive shaft has been mounted.
- e) Replace all worn parts i.e. ball sector, outlet ring. O-rings and Rulon bearings when necessary.

## Reassembly

Assemble the valve in reverse order. O-rings (13,14,16) must be lubricated with a suitable silicon grease before assembly. Sliding ring 13A can only be mounted by means of a special tool per fig. 2 below. Lubrication is needed of the spherical sealing surface of the ball sector and the rubber seat area of the outlet ring (2). For the manual operation on the bench after assembly, and in absence of lubricating water.

### Recommended grease:

- For o-rings 13/14/15, silicon grease Chemplex SI 400M (Fuchs-Lubritech).
- For the spherical sealing surface of the ball sector and the seat area of the outlet ring, silicon grease Chemplex 750 (Fuchs-Lubritech).

**Parts list for rubber lined Ball Sector Control Valve Ramén type KSG**


Item No	Qty of each part, valve sizes DN80-200					Description
	80/3"	100/4"	125/5"	150/6"	200/8"	
1	1	1	1	1	1	Valve body
2	1	1	1	1	1	Outlet ring w. rubber seat
3	1	1	1	1	1	Ball Sector
4		2		2		Shaft bearing SST
5		1		1		Short Shaft
6S/L		1		1		Drive Shaft, (short=S, long=L)
8		3		3		Woodruff key
9		2		2		Shaft bearing, PTFE
11		2		2	2	Screw for outlet ring
12			2			Screw for bearing sleeve (4)
13		2		2		O-ring for shafts, nitrile (std)
13A		2		2		Sliding ring, PTFE
14		2		2		O-ring for bearing sleeve, nitrile (std)
16	1	1	1	1	1	O-ring for outlet ring, nitrile (std)

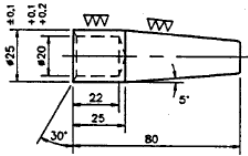
**Mounting actuator on the valve**

See separate document "AI-E-KS-PA (XXXX) Instruction and guidelines for the mounting of pneumatic actuator on Ramén Ball Sector Valves type KS". The document can be provided by your valve supplier.

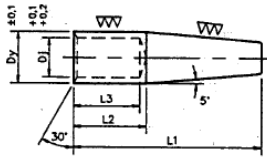
**Fig. 2**

Auxiliary tool for mounting of sliding ring (13A) and O-rings (13).

**Valve sizes DN 80-125 (3" to 5")**



**Valve sizes DN 150-200 (6" and 8")**



Valve size	Dy	Dj	L1	L2	L3
DN 150-200	32	26	100	40	36

Mounting of Sliding ring (13A) and shaft o-ring (13).

