Instruction and guidelines for the mounting of pneumatic actuator on Ramén Ball Sector Valves type KS

General guidelines for proper actuator sizing

Do not use pneumatic actuators with torque beyond below figures. Use pressure reducing regulator for the air supply when necessary not to exceed the maximum torque.

Valve type KS	Torque range	
DN	Recommended	Max allowed
25	20-50	100
40-50	30-90	100
80-100	80-200	200
150-200	160-400	400
250	250-600	700
300	700-1200	2000

The lower torque values can be used for on-off actuators. The higher torque values are recommended for throttling control with positioner when best possible control accuracy is desired, or for on-off operation on sticky media where particles are wiped off from the ball sector by the seat ring.

1. Preparation before mounting

1. Turn the ball sector to perfect fully open position.

WARNING!
Never turn the ball sector beyond its normal 90 degree working angle between open and closed. If this is done accidentally, you must eliminate the seat ring pressure by loosening the two screws, item 12, which secure the seat holding ring, item 2, to the valve body before you turn the ball sector back.

2. Shaft coupling mounting

2A. Check that the shaft coupling fits the shaft nicely, **before** the key is mounted. The coupling must be able to mount without violence or hammer stroke. Work down defects in the surface if necessary. Eventually you may find a material deformation around the opening of the keyway in the shaft or the coupling that can be removed by means of a file or grinding paper.

2B. Check that the key fits the keyway in the coupling and the valve shaft. Adjust when necessary to easy running fit.

2C. Mount the key on the shaft and be careful not to deform it. Use eventually a jaw vice with soft grip.

2D. Mount also the coupling on the shaft without violence.

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WARNING! (Valves DN40-300) If the shaft is pushed some millimetre into the valve body it must be forced out again with some suitable tool i.e. a metal bar placed on the inside end of the shaft and some hammer strokes on the rod. Compare with the position of the opposite shaft end (item 5). The shaft ends shall more or less be flush with the inside surface of the ball sector.

3. Actuator mounting

3A. Check that the actuator is in perfect OPEN position as when the actuator shaft has been turned counter clockwise seen from the accessory/positioner side.

3B. Mount the bracket on the actuator.

3C. The actuator and the valve, both still in fully open position, are then mounted together. Check that there are no undue forces needed when the coupling shall enter into the actuator shaft. The bracket must fit nicely and be parallel to the surfaces on both the actuator bottom and the valve flange. Tighten all screws.

4. Adjustments

4A. Ramén standard couplings are supplied with one or two radial screws which, when they are tightened, eliminate any backlash between the coupling and the actuator shaft.

Tighten the screw(s).

4B. Connect an adjustable air pressure to the actuator and operate between open and closed. If there is any adjustable travel stop in open (and closed) position it shall be used to obtain the perfect fully open (respectively closed) valve position.

4C. Check with an air pressure regulator that the valve is operated smoothly and without steps even at low pressure. A properly sized double acting piston actuator that shall be equipped with a positioner, shall be able to operate the valve at an air pressure differential above the piston(s) of max 0,5-1 bar, or better the less

5. Accessories and/or positioner

5. Mount positioner or other accessories per their individual instructions.

Effective turning angel
All valve sizes may be turned 90^{o} on operation but due to extra reduced ball sector bore in some of the smaller sizes, the effective angle for throttling control from fully open to closed is somewhat reduced. For actual angels see table below.

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Valve DN	Shut	Flow range
25/A-K	0º-18º	18º - 90º
25/5	0º-30º	30º - 90º
25/10	0º	0º - 90º
25/15	0º-25º	25º - 90º
25/20	0º	0º - 90º
40/25	0º-30º	30 º- 90º
40/32	0º-20º	20º - 90º
50-300	0º	0º - 90º

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