

# Minimize plant risks

Following the valve manufacturer's maintenance recommendations ensures plant availability.

## Mapag BO valve maintenance recommendation for Vacuum Swing Adsorption (VSA) / Vacuum Pressure Swing Adsorption (VPSA) units

Components	Elements	Recommended maintenance 1,5M cycles	Recommended maintenance 3M cycles
<b>Valve</b>	Bearings, Seals	Check valve performance and operation on site (1)	Replace
	Seat		Replace
	Shaft (2)		Check
	Disc		Check
<b>Actuator</b>	Bearings, Seals, Keilpack	Replace	Replace
	Housing, Cylinder	Check	Check
	Pistons	Check	Check
	Shaft connection (2)	Check	Check
<b>Valve controller</b>	Complete device	Calibration	Calibration, replace after 4,500k cycles
	Spool valve	Replace	Replace
	Prestage	No action	Check
<b>Booster / quick exhaust valve</b>	Complete device	Check	Replace
<b>Solenoid valve</b>	Complete device	Check	Check
<b>Limit switch</b>	Complete device	Check	Check
<b>Air filter</b>	Complete device	Replace	Replace

(1) External leakage = Damaged seals / Need in higher supply air pressure = Damaged Actuator, Bearing / Slow Opening, closing time = Damaged Seat, Actuator, Bearings / Noise = Damaged shaft connection, bearings.

(2) If valve shaft or actuator shaft connection is damaged both have to be replaced.

Other non mentioned parts are checked during maintenance in Metso Service Center. Damaged parts are replaced if possible and advice for parts replacement are made for the upcoming maintenance.

Use of device condition monitoring helps to determine if a particular valve needs an early maintenance.

Oxygen (O<sub>2</sub>) valves can be maintained only by authorized persons.

### Wearing out of devices:

Bearings and sealing elements



Bearings and sealing elements



Valve controller components



Instrumentation components



Operational benefits:



Improved plant availability



Optimized performance



Ensured quality



Improved safety