Pilot-operated Control Valves

MANKENBERG

adjustable opening and closing velocities
optimal control performance 1

exchangeable pilot control
flexible application possibilities 2

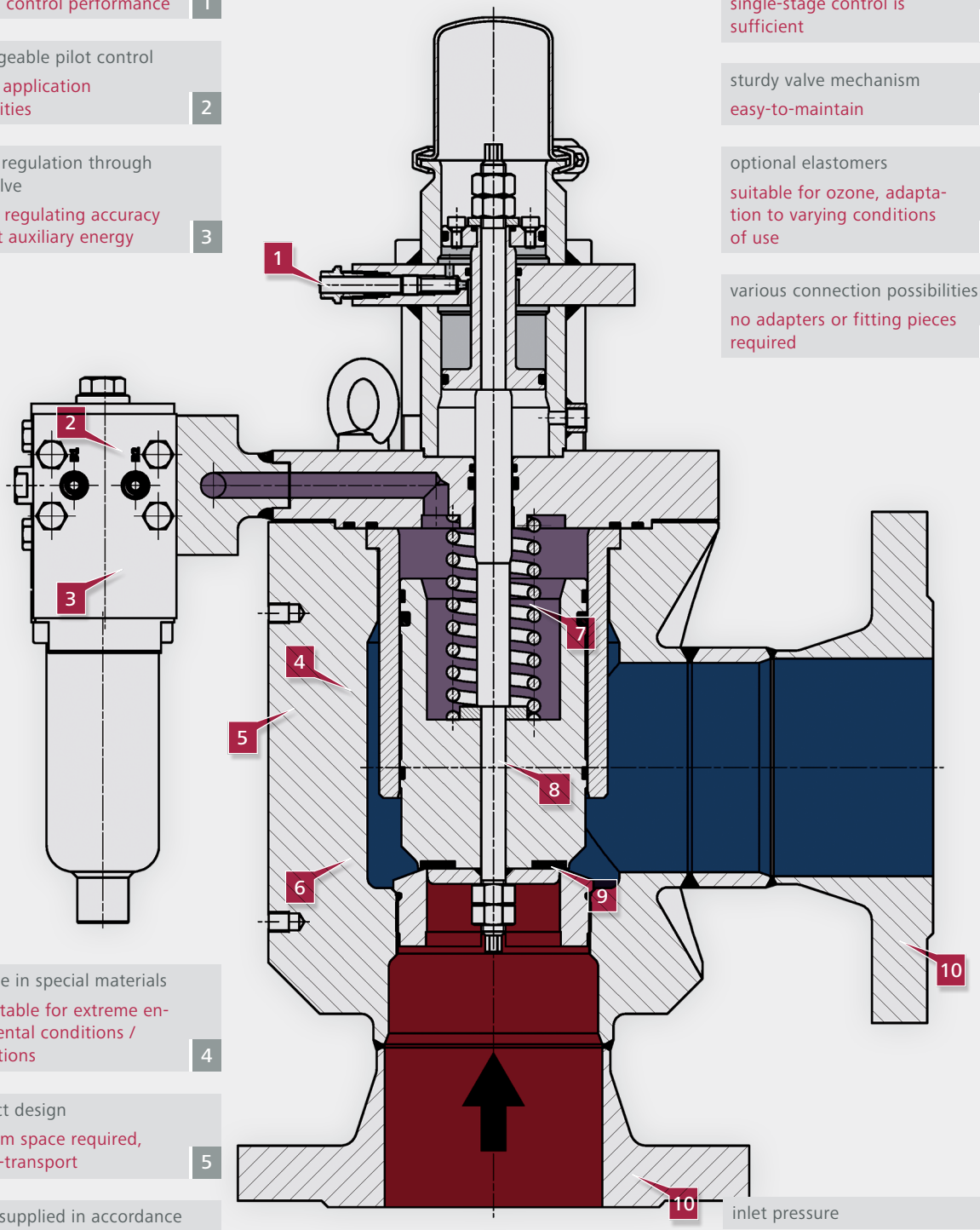
precise regulation through pilot valve
highest regulating accuracy without auxiliary energy 3

high pressure drops possible
simple plant structure because single-stage control is sufficient 7

sturdy valve mechanism
easy-to-maintain 8

optional elastomers
suitable for ozone, adaptation to varying conditions of use 9

various connection possibilities …
no adapters or fitting pieces required 10



available in special materials
also suitable for extreme environmental conditions / applications 4

compact design
minimum space required, easy-to-transport 5

can be supplied in accordance with NACE
use in acid gas atmosphere in compliance with all specifications for corrosion resistance 6

inlet pressure
outlet pressure
control pressure
hydraulic damping

Pilot-operated Pressure Reducing Valve — RP 810ECK

Pilot-operated Control Valve in Action

MANKENBERG

Pilot-operated Pressure Reducing Valve — RP 810ECK

single-seat, angled design suitable for high flow rates and high pressures | usable for gas | body made of C-steel, CrNiMo-steel, special materials such as Duplex, Superduplex or Hastelloy® available | NACE-compatible | pilot valve and hydraulic damping with throttle valves completely of CrNiMo-steel | hardfaced valve cone and seat available for high pressure drops

DN	40 - 150	PN	16 - 160
P_1	up to 160 bar	T	130 °C
P_2	1 - 40 bar	K_{VS}	20 - 250 m^3/h

Constant Pressure Control in a Gas Treatment Plant

Natural gas is of paramount importance to respond to worldwide market demand for fossil combustibles. It is extracted from underground deposits, where – owing to its high pressure – it rises to the surface after successful drilling.

Natural gas is composed nearly entirely of highly combustible methane, but during extraction from the wellhead it contains various impurities, for example ethane, propane, butane, hydrogen, hydrogen sulphides, helium and others, which must be separated and removed prior to further processing. Only after drying and cleaning, the natural gas is termed to be of ‚pipeline quality' and can be transmitted to the customers. Pipeline operating companies issue severe guidelines with regards to the composition of natural gas transported across their pipeline network to the final consumer. Treatment of the gas is accomplished in special treatment plants, which are often located in the gas extraction area.

In a natural gas separation plant the incoming gas firstly flows through a filter, the so-called slug catcher, in which for example sand and other solid particles, water and/or crude oil are removed. Having a pressure of 34 - 40 bar, the gas is then conducted to a high pressure separator unit that is to separate all of the condensates from the gas. Since the separator works at a pressure of 30 bar, the Mankenberg pressure control valve RP 810ECK has been installed upstream of the unit. The valve constantly reduces the gas pressure within the high pressure separator unit to the required pressure of 30 bar. The flow rate varies between 1,890 and 26,295 Nm^3/h at temperatures between 25 °C and 45 °C.

The pilot-operated pressure control valve RP 810ECK consists of a main valve with a pilot valve, a throttle unit with integrated strainer, non-return valve and throttle valves which are permanently attached on the cover. The material is particularly corrosion-resistant in accordance with NACE. The medium-wetted parts (springs and mesh of the integrated strainer) are made of Inconel, the adjusting spring was produced from Duplex steel.

The valve has a special hydraulic damping for gas applications, thus adapting in an optimal way the regulating behaviour to the plant.