Pilot-operated Control Valves

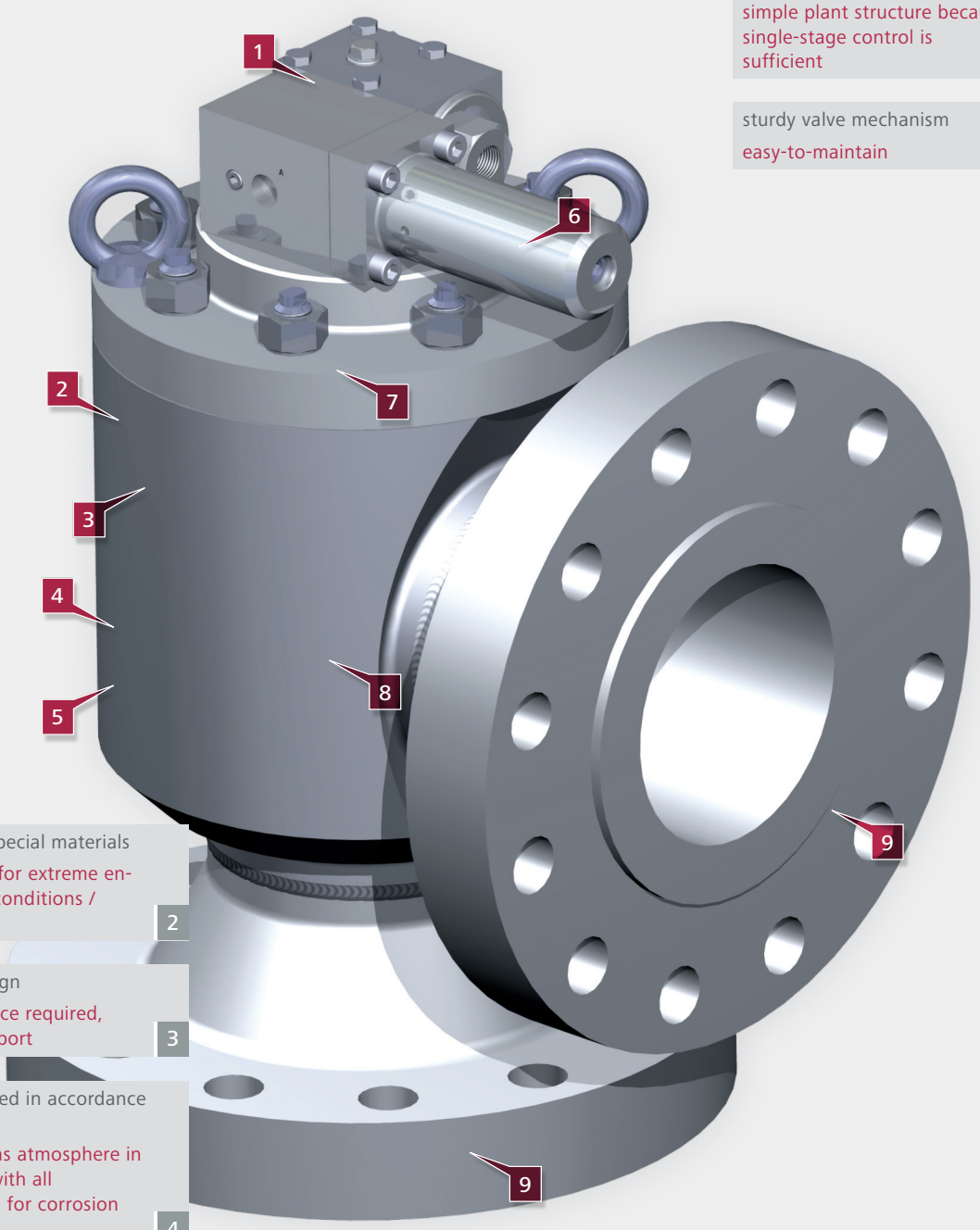
MANKENBERG

exchangeable pilot control
flexible application possibilities 1

precise regulation through pilot valve
highest regulating accuracy without auxiliary energy 6

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

sturdy valve mechanism
easy-to-maintain 8



available in special materials
also suitable for extreme environmental conditions / applications 2

compact design
minimum space required, easy-to-transport 3

can be supplied in accordance with NACE
use in acid gas atmosphere in compliance with all specifications for corrosion resistance 4

optional elastomers
suitable for ozone, adaptation to varying conditions of use 5

various connection possibilities …
no adapters or fitting pieces required 9

Pilot-operated Pressure Reducing Valve — RP 820 Eck

Pilot-operated Control Valve in Action

MANKENBERG

Pilot-operated Pressure Reducing Valve — RP 820ECK

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

DN	40 - 150	PN	16 - 160
P_1	up to 160 bar	T	130 °C
P_2	1 - 40 bar	K_{VS}	20 - 70 m^3/h

HIGH GRADE

Recirculation of Saline Reservoir Water into the Ground

In oil fields the oil is not available as pure crude oil, which means that during oil extraction a mixture of oil and water or crude oil and sand is conveyed from the ground. The proportion of oil is separated in order to obtain crude oil that is suitable for further processing. After separation of the oil content, the saline water contaminated with aggressive particles is pressed into the ground through small and vastly branched injection boreholes around the periphery of the oilfield. Thus the pressure on the oil-bearing strata increases, whereby the mixture of oil, solid particles and water is delivered at the drilling site.

An oil production facility in Sudan has installed pilot-operated backpressure regulators of the type Mankenberg RP 820 Eck. Since the operational area of the single-seated angle valves requires a very high level of resistance to corrosion, they have been entirely manufactured from Duplex steel (1.4462) and designed for temperatures from -10 through to +100 °C. A maximum pump capacity of 100 m^3/h flow rate was indicated. At zero extraction rate, the maximum delivery pressure is 83 bar at up to 95 °C, so the nominal pressure of the valve has been designed for PN 160. The backpressure regulators have been arranged in the course of the injection line directly downstream of a strainer. The valves have the task of building up a constant counterpressure to the pumps and, in so doing, they offer protection from damage through cavitation.