SIEMENS

Ingenuity for life

Gas safety & control solutions

Control Products & Systems OEM

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Easy solutions based on modular approach

To us, the valve and actuator are two separate components. Due to their features and excellent performance, any of our actuators can be combined with any of our valves. The range of double gas valves includes valves of class A in nominal sizes from 1½" to DN 150, covering typical burner capacities from 300 kW to 30 MW. The modular design of valve and actuator ensures flexibility in terms of mounting, on site service and stock holding.

Even in the case of service, there is no need to worry about operating conditions since only one type of actuator is required – independent of the type of valve. The actuators can be replaced while the system is under pressure, without having to remove the valve.

We see volumetric flow controlling elements as separate components too. This allows us to combine synchronous actuators or system actuators (stepper motors) with the same controlling elements. This covers the nominal size range from ½" to DN 200 for gas and air.

Extremely versatile and cost-saving

Future-oriented burner management from Siemens

In addition to products for floor-standing and wall-hung boilers, Siemens develops, produces and supplies components for use with forced draft standard burners and industrial burners.

The comprehensive range of products includes burner controls, actuators, dampers, sensors and flame detectors, control systems, valves, test equipment and integrated system solutions.

These products and systems enable us to offer optimum solutions for our customers' market segments. They include single- and multi-family houses (residential buildings), commercial buildings and complex firing systems for industrial processes.

Extensive coverage of processes

Thanks to the modular concept, the VG/SKP products meet the requirements of a broad range of applications in the commercial and industrial sectors.

Only a small number of versions are needed to cover all kinds of operating conditions, thus facilitating on site service work and stock holding.

Siemens Solution Partner program

Our Solution Partners deliver all elements and services required for operating closed thermal process plants – from engineering and measures required for plant optimization to gas control systems and switchboard construction including comprehensive services.

The Solution Partners for Industrial Combustion are well trained and have the latest information about Siemens products. We maintain a continuous dialog with these partners, aimed at meeting current market needs.

HIGHLIGHTS

- Modular concept
- Broad application area
- Service-friendly
- Proven Solution Partner program
- Worldwide approvals

Valves

Valve actuators

SKP valve actuators – simply exemplary

A wide range of applications
Siemens gas valves and actuators of the VG/SKP line are based on decades of experience.

More than one million Siemens gas valves are installed in the field, operating on a host of different applications – be it in the commercial heating market or in industrial firing systems.

The modular concept of the VG/SKP line has been continually improved with regard to functionality, robustness and user friendliness.

This enabled us, for example, to reduce the electrical power consumption once again. This resulted in an unrivaled level of efficiency for the gas valve market.

Our series of valves and valve actuators aim for the highest level of modularity. Any actuator can be combined with any of our valves.

To complete and perfect our range, we also offer controlling elements and damper actuators.

1 DIN connector
2 Stroke indication (control position)
3 LED indication power on

Extensive scope of functions

In terms of functions, the SKP are available in four different versions: As basic open/closed actuators, as open/closed actuators with constant pressure governor, with differential pressure governor, or with pressure ratio controller. Each actuator is compatible with all nominal valve sizes and can be fitted to the valve in various positions.

The settings are made independently of the nominal size of valve.

All operating elements are located on the same side. This simplifies operation and improves service friendliness. The actuators feature an LED to indicate power on. All types of actuator with control function feature stroke indication (=valve stroke).

Straightforward operation and mounting

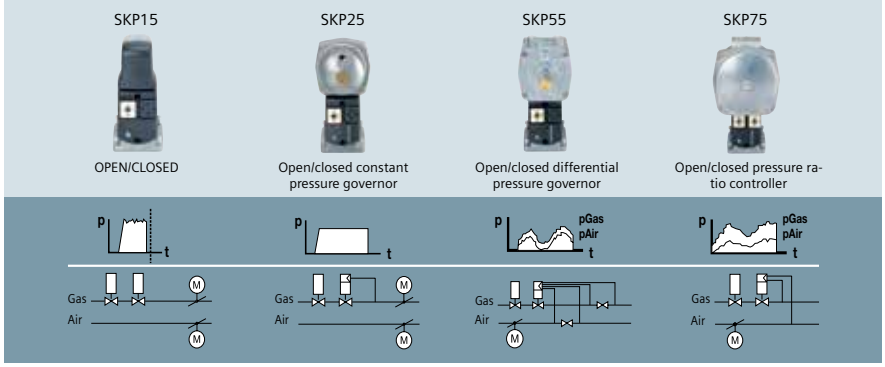
The actuator's current position and control behavior can be viewed at a glance. Also, the actuator can be equipped with an optional integrated end switch.

Our smart plug-and-play solution is extremely easy to mount and service-friendly: The actuator can simply be connected via a DIN connector. End switches (CPI) are factory set. Together with the captive screws, mounting time is thus minimized: Simply fit it, connect it and turn power on.

During commissioning or when service work is carried out, the burner pressure can be checked via a test point directly on the SKP's pressure governor.

HIGHLIGHTS

- Modular concept/flexibility
- Straightforward operation
- For high gas pressures
- Maximum safety based on hydraulic system



VGD double gas valves – extremely robust

About precision and other benefits

The VGD gas valves from Siemens make full use of the advantages offered by the double valve design: Compact and low weight. They afford high inlet pressures of up to 100 KPa and excel in high flow rates. Any valve of the VGD line can be combined with any of our actuators. And since we also attach great importance to versatile accessories, the universal mounting plate enables any valve of the VGD40 line to be equipped with pressure switches and valve proving systems of all major suppliers. The mounting plates are interchangeable, allowing them to be matched to gas trains arranged on the left or right hand side. The VRD40 variant was specifically designed and developed for use with alternative types of gas, such as recycling gas (see graphic on right with inner parts highlighted in green).

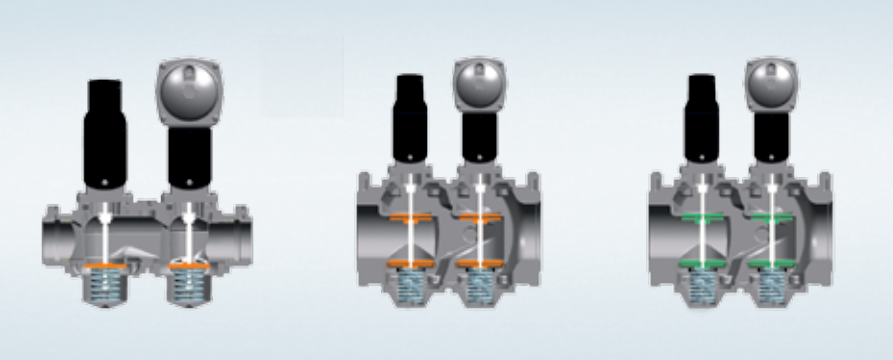
Technology for more safety

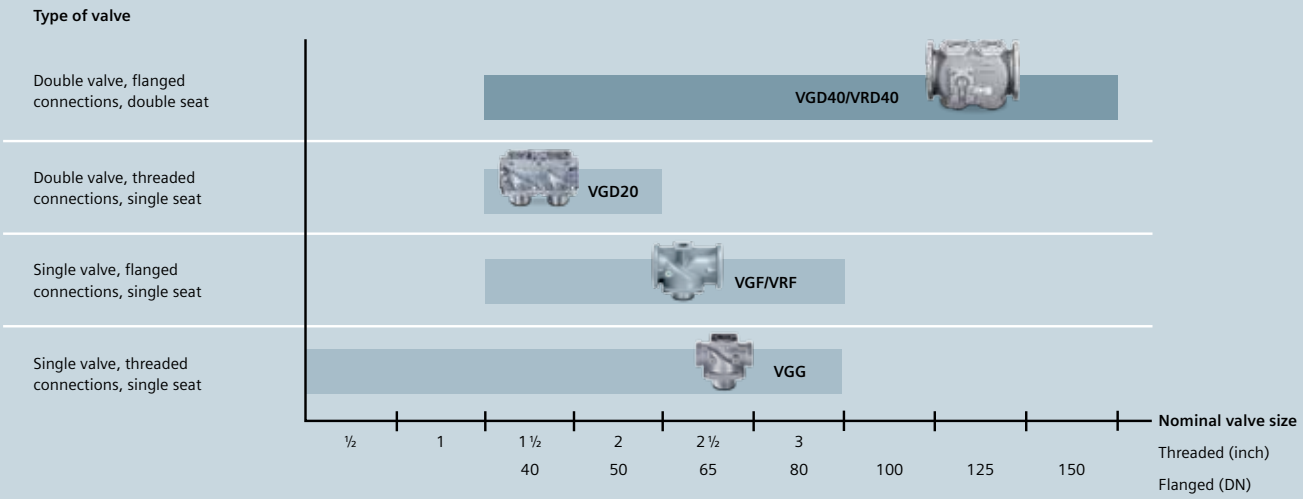
Safety is of prime importance when it comes to gas applications. While VGD20 are of single-seat design, all double valves of the VGD40 line use a unique, patented double-seat design.

This special design ensures that both valve seats are closed by two individual springs producing independent forces of more than 100 N. The resultant automatic compensation of distance offers more safety.

HIGHLIGHTS

- Nominal sizes from DN 40 to DN 150 or 1½" bis 2"
- High inlet pressure ranges
- Highest safety thanks to patented double seat design
- Market-specific versions (e.g. U.S. models)
- Bio recycling gas variant
- Suitable for integration in systems up to SIL3





Extensive choice of applications

Extremely versatile

The separation of gas valve and electrohydraulic actuator from the design point of view makes it possible to build robust and flexible gas trains with only a small number of product versions. Powerful closing springs ensure extremely tight valve seats, making the valves less susceptible to small particles in the gas flow. In certain cases, fine filters on the gas valve's inlet side can be dispensed with.

For use on industrial applications, SKP electro hydraulic actuators offer another decisive advantage: 100 % on time, if required, and an unlimited number of switching cycles. The actuators can be integrated into industrial combustion plants up to SIL3.

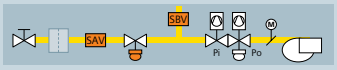
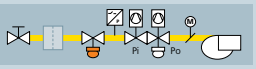
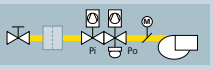
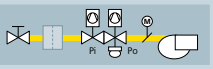
Smart technical design

The damped opening characteristic of the SKP actuator ensures smooth and reliable burner startup. Adjustment of the SKP is straightforward and always the same, irrespective of the nominal size of valve.

Overall efficiency is increased due to low power consumption, thus helping to cut plant operating costs.

HIGHLIGHTS

- Small number of versions
- Very low power consumption (< 10 VA/SKP)
- Robust and dirt-resistant
- Straightforward operation and adjustment

Mains pressure	Typical application VGD40/SKP	Pi static VGD40	Pi operation VGD40	Po burner pressure
100...400 KPa		150 KPa	...70 KPa all nominal sizes	Depending on SKP model/ setpoint spring 0...70 KPa
70...100 KPa		150 KPa	...70 KPa DN 65...150	
70...100 KPa		150 KPa	...100 KPa DN 40, DN 50	
...70 KPa		150 KPa	...70 KPa all nominal sizes	

Depending on mains pressure, certain high- pressure components may not be needed (shown in orange). Components shown in grey are optional.

GASP and other accessories

Valve sizing software

To simplify planning and engineering, Siemens developed a special gas valve sizing program (GASP).

GASP is used to size gas valves and to determine the presetting of the gas-air ratio with the SKP75.

Pressure switches

Siemens gas and air pressure switches of the QPL line monitor mains pressure, maximum burner pressure, or are used in connection with a gas valve proving system. Owing to their design, the pressure switches can be fitted to Siemens valves in a number of ways.

Increased IP degree of protection

Our AGA66 gasket set can easily be fitted between the SKP valve actuators and our VGx valves at any time.

Fitting the gasket set increases the degree of protection from IP56 to IP65.

HIGHLIGHTS

- Simplified valve sizing
- Pressure switch for air and gas pressures on gas trains
- Expansion sets for valves and valve actuators

On the left: VGD40 with QPL15
On the right: GASP

Always the right valve available

TYPE OF VALVES		Suited for bio/recycling gas	Connections	Nominal size	Permissible inlet pressure	Design	Suited for use with SKP	Suited for use with SKL/SAX (AGA60)
				FIELD OF USE				
	VGD20			1"...2"	150 KPa		■	
	VGD40			DN 40... DN 150	70...100 KPa		■	
	VRD40	■ 1)		DN 40... DN 150	70...100 KPa		■ 2)	
	VGG			½"...3"	...120 KPa	⊥	■	■
	VGF			DN 50... DN 80	60 KPa	⊥	■	■
	VRF	■ 1)		DN 50/ DN 80	60 KPa	⊥	■ 2)	■

Legende:

- Flange
- Internally threaded
- Seat
- Double seat

1) No nonferrous materials: VRD40 and VRF suitable up to 1% H2S, 1% NH3 combined with SKP15

2) Optional associated SKP2, SKP5, SKP7 actuators according to gas suitability check

1. Proportional controlling element with threaded connection version

2. Butterfly valve for intermediate flange mounting version (SQM3/4)

3. Butterfly valve for intermediate flange mounting version (SQM5)

Volumetric flow control solutions

Suitable actuators for any system requirements

A total of 10 lines of actuators are available offering solutions for burner up to 35 MW. The SQN1, SQM33 and SQM45/48/91 actuators are specifically matched to the requirements of our burner management systems. Special features include the safety-related communication.

Universal synchronous actuators

Extremely versatile are the universal actuators SQN3, SQN7 and SQN9, delivering torques up to 3 Nm, and the more powerful versions SQM1/2, SQM40/41 and SQM5, delivering a maximum torque of 40 Nm. The burner controls, along with three-point controllers and – for the electronic version – an analog input (e.g. 4...20 mA) are responsible for control. Position feedback is provided by cam switches and single or double potentiometers. Combinations of actuators and dampers are possible for all actuators according to their type. The VKP40 proportional volume controlling elements are available up to a connection size of 2". The flange design of the VKF41...C gas/air dampers covers the nominal size range from DN40 to DN200.

1. VKP40+SQN72+2xAGF10 (Fig. 2)

Proportional controlling element with threaded connection version:
– Volumetric flow controlling elements with linear nature
– AGF10 flange ½" to 2"
– Direct mounting of system motors (SQN72, SQM40) or
– System actuators (SQN1, SQM33, SQM45 stepper motors).

2. VKF41...C+ASK33.4+SQM40 (Fig. 1)

Butterfly valves for intermediate flange mounting version:
– Fitting of synchronous motors (SQM40) or
– System actuators (SQM33, SQM45 stepper motors)

3. VKF41...C+ASK33.9+SQM5 (Fig. 3)

Butterfly valves for intermediate flange mounting version:
Fitting of synchronous motors (SQM50)

HIGHLIGHTS

- 10 product lines delivering torques from 1.2 to 60 Nm
- Clockwise or counterclockwise rotation (4.5 to 120 s)
- High accuracy, small hysteresis
- Different types of drive shaft available
- Electronic versions with analog inputs
- Degree of protection IP54 or IP66
- Worldwide appovals

Controlling elements and actuators

			Stepper motor	Synchronous motor	Torque (Nm)	Analog input	Potentiometer	Drive shaft version	End of drive shaft	Angular rotation	Degree of protection	Approvals	Matching burner controls, damper actuators and burner management systems
			FIELD OF USE										FOR USE WITH
DAMPER ACTUATORS		SQN72		■	2,5			5	□	0...90°	IP40	CE	LAL, LOK, LFL, LGK, LME, LME7, LMO
		SQN30		■	3,0 6,0		Option	4	□	0...90°	IP40	CE	LAL, LOK, LFL, LGK, LME, LME7,LMO
		SQM40		■	10,0 20,0	■	Build-in	4	□	0... 135°	IP65	CE, UL, CSA	LAL, LOK, LFL, LGK, LME, LME7,LMO
		SQM5		■	40,0	■	Option	6	□—	0... 130°	IP54 IP65 (Kit)	CE, UL	LAL, LOK, LFL, LGK, LME7
		SQN13	■		1,0			1	□	0...90°	IP40	CE	LMV2/3
		SQM33	■		3,0 10,0			1	□	0...90°	IP54	CE, UL, CSA	LMV2/3
		SQM45	■		3,0 20,0			2	□	0...90°	IP54	CE, UL	LMV5
DAMPERS		VKP ½"...2"			≥1			2		0...90°		CE	SQN13 (with ASK33.2), SQN72, SQM33/40/45 (with ASK33.1), SQM50 (AGA58.5 and ASK33.3)
		VKG10/20* DN32... DN80			≥1			2		0...90°		CE	SQN13 (with ASK33.2), SQN72, SQN33/40/45 (with ASK33.1), SQM50 (AGA58.5 and ASK33.3)
		VKF41...C DN40... DN200			≥2,5			1		0...90°		CE	refer to ASK33x
		VKF41...H DN65... DN200			≥2,5			1		0...90°		—	without Coupling
		ASK33.4 Coupling for- VKF41...C											SQM33/40/45 SQM50 (AGA58.5 and ASSK33.3)
		ASK33.9 Coupling for- VKF41...C											SQM5 (with AGA58.1)

Legende: □— Drive shaft on one side □—□ Drive shaft on both sides Potentiometer * VKG20: reduced diameter

When building technology creates perfect places –
that's Ingenuity for life.

Never too cold. Never too warm.
Always safe. Always secure.

With our knowledge and technology, our products,
our solutions and our services, we turn places into
perfect places.

We create perfect places for their users' needs –
for every stage of life.

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