Butterfly Valves VKF41…
PN 6, PN 10, PN 16

- **Grey cast iron housing EN-GJL-250**
- **DN 40…200**
- **k_{vs} 50…4000 m^3/h**
- **For fitting between PN 6, PN 10, PN 16 counter-flanges to ISO 7005**
- **Metallic tight-closing**
- **Angle of rotation 90°**
- **No maintenance required**
- **Can be fitted with type SQK33.00, SQL33…, SQL83.00, SQL35.00 or SQL85.00 electromotoric actuators**

Use

For use as a control or shut-off valve in heating, ventilation and air conditioning systems, e.g:

- In closed circuits
- For 2-position controls (open/closed)
- For boiler and chiller sequencing circuits
- To open or close the flow to a heat exchanger or to complete plant sections
- In applications where minimal leakage through the fully closed valve is allowable

Type summary

Type	DN	k_{vs} [m^3/h]	Leakage rate in % of k_{vs}-value	Velocity of flow [1] Water [m/s]		Gas [m/s]	
VKF41.40	40	50	0.22	4		40	
VKF41.50	50	80	0.14				
VKF41.65	65	200	0.09				
VKF41.80	80	400	0.06				
VKF41.100	100	760	0.04				
VKF41.125	125	1000	0.04				
VKF41.150	150	2100	0.02		5.5 [2]		55 [2]
VKF41.200	200	4000	0.01				

[1] Recommended maximum velocity of flow and the butterfly valve fully open
[2] Only valid with type SQL35.00 and SQL85.00 actuators

k_{vs} Nominal flow rate of cold water (5…30 °C) through the fully open butterfly valve by a differential pressure of 100 kPa (1 bar)

Accessories

Centering sleeves

4 centring sleeves are supplied with each butterfly valve, for fitting the valve between PN 10 and PN 16 flanges

Mounting kits

ASK33
For mounting SQK33.00, SQL33… and SQL83.00 actuators on VKF41… DN 40…200

ASK35
For mounting SQL35.00 and SQL85.00 actuators on VKF41… DN 150…200

Order

Butterfly valve, actuator and mounting kit must be ordered separately.
When ordering please specify the quantity, product name and type code.

Example
1 butterfly valve VKF41.40 including centering sleeves
1 actuator SQL33.03
1 mounting kit ASK33

Delivery

Butterfly valve, actuator and mounting kit are packed separately.

Equipment combinations

Butterfly valve	Mounting kit		Electromotoric actuator SQK33.00	SQL33…	SQL83.00	SQL35.00	SQL85.00
			Δp_s [kPa]				
VKF41.40	ASK33		200	500			
VKF41.50							
VKF41.65							
VKF41.80							
VKF41.100							
VKF41.125				300			
VKF41.150		ASK35 [1]		250		500	
VKF41.200				150		300	

[1] Mount SQL35.00 and SQL85.00 with ASK35 on VKF41… butterfly valves

Δp_s Maximum permissible differential pressure at which the motorised butterfly valve will close securely against the pressure (close off pressure)

Actuator overview

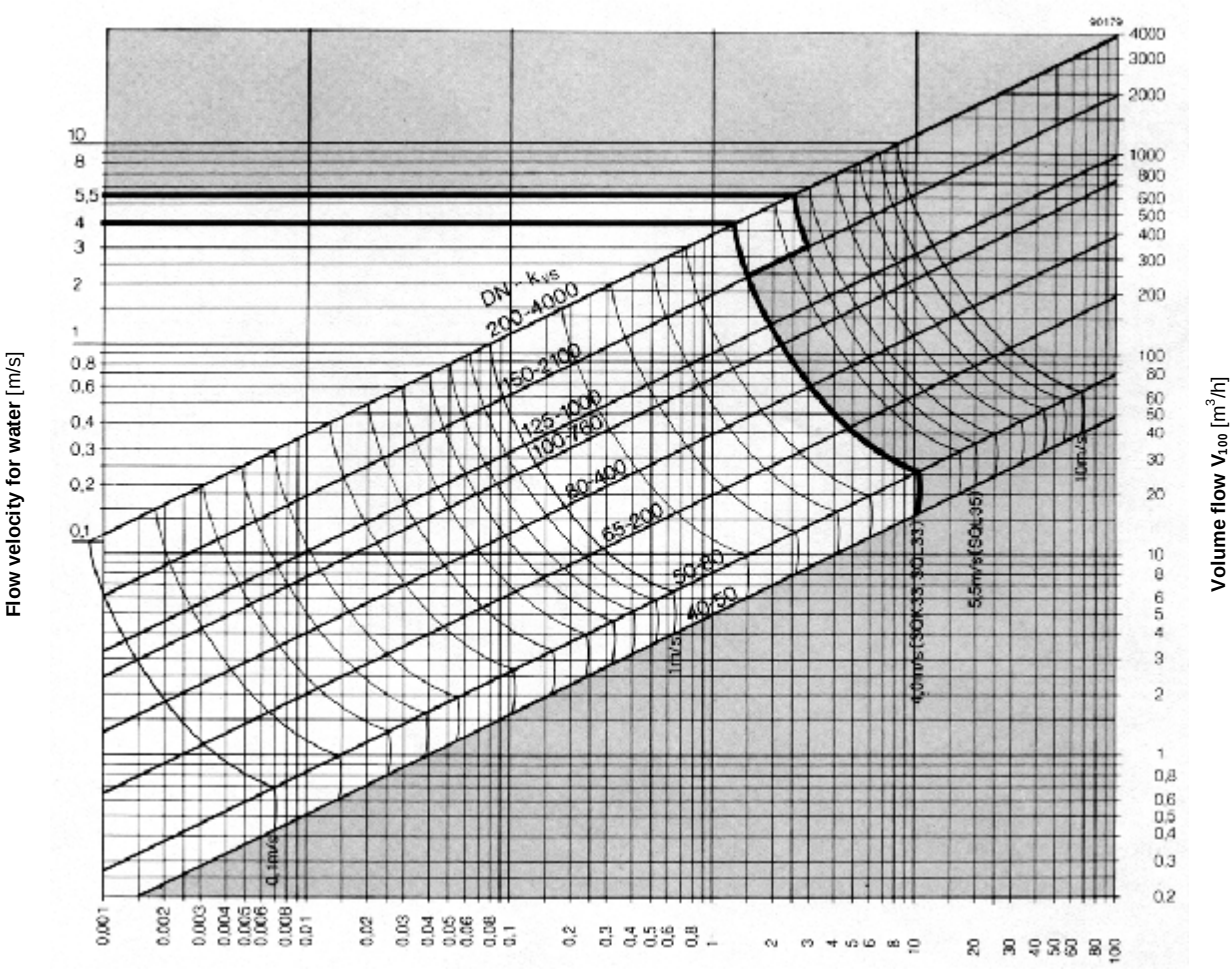
Type	Actuator type	Operating voltage	Positioning signal	Spring return	Positioning time	Positioning force	Data sheet
SQK33.00	Electro-motoric	AC 230 V	3-position	No	125 s	5 Nm	N4506
SQL33.00						12.5 Nm	
SQL33.03					30 s	10 Nm	
SQL83.00		AC 24 V			125 s	12.5 Nm	
SQL35.00		AC 230 V				20 Nm	N4505
SQL85.00		AC 24 V					

Mechanical design

Butterfly valve Stainless steel disk and shaft. The valve disk closes against an end-stop. The position of the valve disc is indicated by a notch on the front of the shaft.

Mounting kit ASK... In all cases, a mounting kit is required to assemble the actuators on a VKF41… valve.

Sizing diagram



Δp_{v100} = Differential pressure across the fully open butterfly valve by a volume flow $\dot{V}_{100}$

$\dot{V}_{100}$ = Volume flow through the fully open butterfly valve

100 kPa = 1 bar ≈ 10 mWC

1 m^3/ h = 0.278 l/s water at 20 °C

Engineering notes

The VKF41... butterfly valves can accommodate flow in either direction.

In heating systems, the valve should preferably be installed in the return, where the seal will be exposed to lower temperatures, so extending its service life.

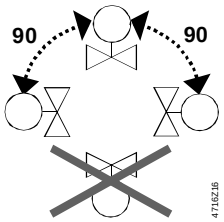
Warning ⚠ To avoid pressure shocks on the butterfly valve, the VKF41… must be driven to its fully open position (either manually or via positioning signal Y1) prior to activating the pump(s).

Mounting notes

The Mounting Instructions 4 319 8927 0 are enclosed in the product packaging.

⚠ VKF41… butterfly valves can be mounted in PN 6, PN 10, PN 16 applications.

Orientation



Upright to horizontal

The valve, actuator and mounting kit are easily assembled directly on site. There is no need for special tools or calibration.

Commissioning notes

The butterfly valve must be commissioned only with the mounting kit and actuator correctly assembled.

- Disk rotated clockwise: Increasing flow
- Disk rotated anti-clockwise: Decreasing flow

Maintenance

The VKF41... butterfly valves require no maintenance.

Caution ⚠ Before performing any service work on the valve, actuator or mounting kit:

- Switch off the pump and power supply
- Close the main shut-off valves in the pipework
- Release pressure in the pipes and allow them to cool down completely

If necessary, disconnect electrical connections from terminals.

The valve must be re-commissioned only with the manual adjuster or the actuator correctly assembled.

Disposal

Before disposal the valve must be dismantled and separated into its various constituent materials.
Legislation may demand special handling of certain components, or it may be sensible from a ecological point of view.
Current local legislation must be observed.

Warranty

The technical data given for these applications is valid only in conjunction with the Siemens actuators as detailed under «Equipment combinations».
All terms of the warranty will be invalidated by the use of actuators from other manufacturers.

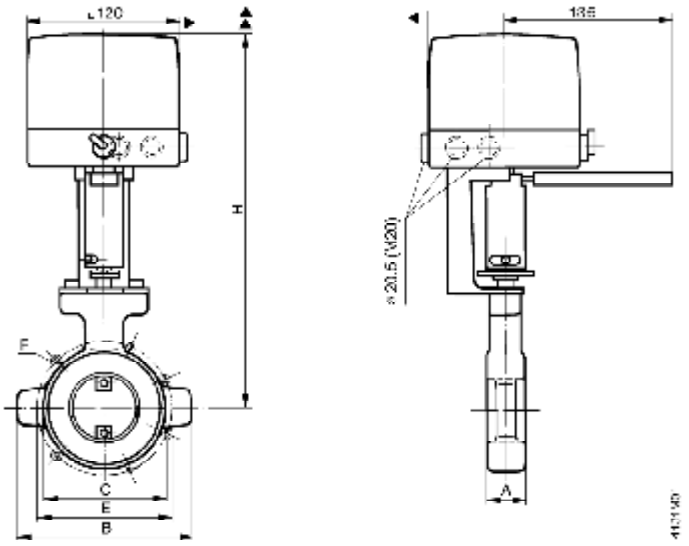
Technical data

Operating data	PN class		PN 16 to EN1333
	Permissible operating pressure		1600 kPa (16 bar)
	Leakage rate		refer to «Type summary»
	Permissible media		chilled water, low temperature hot water, high temperature hot water, brine, softened water, water with anti-freeze; recommendation: water treatment to VDI2035
	Medium temperature		-10…120 °C
	Flanged connection for pipes		PN 6, PN 10, PN 16 to ISO7005
	Angle of rotation		90° (to end stop)
Standards	Pressure Equipment Directive		PED 97/23/EC
	Pressure Accessories		as per article 1, section 2.1.4
	Fluid group 2:	DN 40…50	without CE-marking as per article 3, section 3 (sound engineering practice)
		DN 65…200	category I, with CE-marking
Materials	Housing		grey cast iron EN-GJL-250
	Shaft		stainless steel 1.4104
	Valve disc		stainless steel 1.4016
	Shaft seal		EPDM O-rings
Dimensions			refer to «Dimensions»
Weight			refer to «Dimensions»

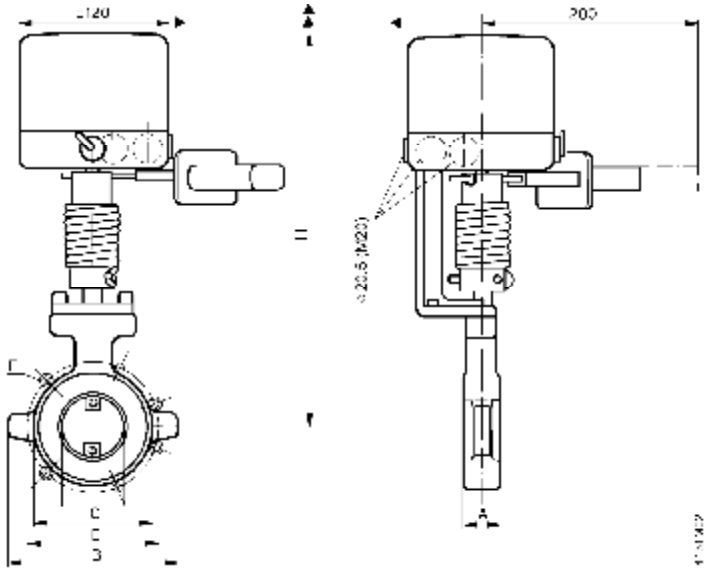
Dimensions

Dimensions in mm

VKF41… with SQK33.00, SQL33…, SQL83.00 and ASK33



VKF41… with SQL35.00, SQL85.00 and ASK35



„ > 100 mm: minimum clearance from the wall or ceiling

„ „ > 200 mm: minimum clearance for mounting, connection, operation, maintenance etc

Type	DN	A	B	C	E	F	E	F	H			kg
			ø	ø	PN 6		PN 10, PN 16		SQK33.00	SQL33… SQL83.00	SQL35.00 SQL85.00	[kg]
VKF41.40	40	30	130	87	100	M12 (4x)	110	M16 (4x)	249	275		1.72
VKF41.50	50	30	140	97	110	M12 (4x)	125	M16 (4x)		280		1.94
VKF41.65	65	30	160	117	130	M12 (4x)	145	M16 (4x)		287.5		2.37
VKF41.80	80	30	175	133	150	M16 (4x)	160	M16 (8x)		295		2.63
VKF41.100	100	30	195	153	170	M16 (4x)	180	M16 (8x)		305		2.92
VKF41.125	125	40	225	183	200	M16 (8x)	210	M16 (8x)		325.5		5.25
VKF41.150	150	40	255	208	225	M16 (8x)	240	M20 (8x)		338	383	6.29
VKF41.200	200	40	310	263	280	M16 (8x)	295	M20 (8x) für PN 10 M20 (12x) für PN 16		363	408	8.44

DN = Nominal size
H = Total actuator height plus minimum distance to the wall or the ceiling for mounting, connection, operation, maintenance etc.

© 2000 – 2008 Siemens Switzerland Ltd