



VRD

innovative bio gas
valve range.

[siemens.com/buildingtechnologies-oem](https://www.siemens.com/buildingtechnologies-oem)

Bio gas valve VRD40

is an additional version of the well known VGD4 valve series prepared for the use with gases outside of the EN437 range.

These gases coming from digester processes or generated by thermal processes (bio/recycling gases) do not fulfill the requirements of defined gases e.g. natural gas- families I, II and III according to EN437.

The bio/recycling gases could contain aggressive elements like H₂S or NH₃ which the VRD40 valves has to be resistant.

Therefore VRD40, compared to VGD40, has been equipped with specific materials which provide a general suitability and a better lifetime in these environments. VRD40 covers also all well known burner specific features like the VGD40.

Additional safety- measures are given in combination with SKP (valve proving systems via CPI-switches, IP65 kit AGA66).

HIGHLIGHTS

- 7 sizes, DN40...DN150
- For gases outside of EN437 (e.g. G262)
- Resistant against 1% H₂S
- Resistant against 1% NH₃
- "Gas"- compatible to VRF/ VRH
- CPI- control at SKP...1E
- IP65 protection class using AGA66

General Information

The chemical composition and aggressiveness of each type of biogas or recycling gas is different, not constant and depends on various factors.

- Aggressiveness of the gas augments especially:
 - as the hydrogen sulfide content H₂S increases
 - as the moisture content of the gas increases
- Therefore condensation in the valve is not permitted.
- The composition of the gases and the concentration of the components may vary.
- Based on a gas analysis, it is recommended to consult Siemens whether the valve is suitable for the relevant type of recycling gas.
- For safety reasons, it is recommended to
 - install a valve proving device
 - the use of SKPx5 with valve closure contact (CPI switch)
 - increase the IP rate to IP65 using AGA66 Kit

Applications

Gas burning appliances using natural gas as well as artificial gases

- landfill gas extraction
- digester gas from organically waste eg. septic tanks
- process gas from heat treatment applications coal gas

VRD – proven technology with extras

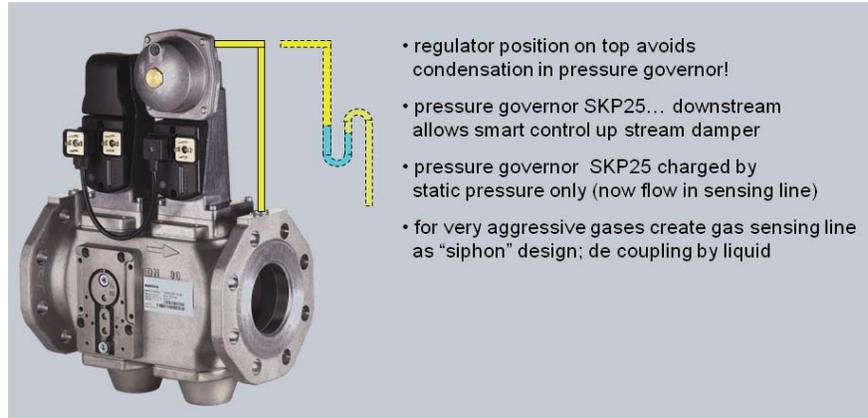


Due to the modular concept SKP actuators can be replaced easily; the valve stays as a closed unit in the gas ramp.

Combinable SKP- actuators

For pure ON/OFF applications VRD40 bio gas valves will be equipped with 2x SKP15 which do not have contact to the gas at all. SKP2/5/7 gas pressure regulators can be used.

There are design properties which support the use of gas pressure regulators out of the SKP range. According to the given gas analysis the suitability will be confirmed by Siemens.



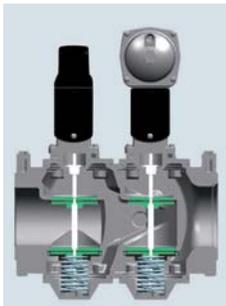
- regulator position on top avoids condensation in pressure governor!
- pressure governor SKP25... downstream allows smart control up stream damper
- pressure governor SKP25 charged by static pressure only (now flow in sensing line)
- for very aggressive gases create gas sensing line as "siphon" design; de coupling by liquid

Specific - compounds inside

VRD40 valves are equipped with special rubber compounds. These compounds have to withstand the aggressive gas components combined with the dynamic stress at rough operating conditions.



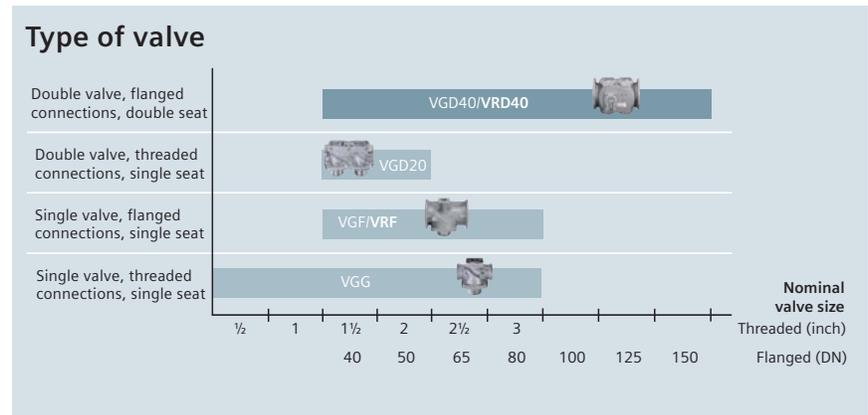
Beispiel: VGD40 natural gas



Beispiel: VRD40 bio gas

Available product range

VRD40 bio gas valves are available from DN40 to DN150 and extend significantly the known VRF single bio gas valve range.



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