

Data sheet

## Pressure relief valve

VRH 5 / VRH 30 / VRH 60 / VRH 120



|                          |                                     |
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| <b>1. Introduction</b> | <p>The relief valve is used for protecting the components of a system against overload as a result of a pressure peak.</p> <p>Further, the valve is designed for controlling/limiting the system pressure by draining off the surplus water from the pressure side.</p> | <p>The valve is designed for tap water, i.e. without additives of any kind to the medium. (EU-drinking water directive 98/83/EC).</p> |
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| <b>2. Features</b> | <ul style="list-style-type: none"> <li>• Excellent functional characteristics.</li> <li>• Surface easy to clean.</li> <li>• Corrosion-proof parts (stainless steel, AISI 304, W. No. 1.4301).</li> </ul> |  |
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| <b>3. Variants</b> | <p>The valves are available in four sizes:</p> <ul style="list-style-type: none"> <li>• 5 l/min.</li> <li>• 30 l/min.</li> <li>• 60 l/min.</li> <li>• 120 l/min.</li> </ul> | <p>Standard versions made of rustproof steel AISI 304/W. No. 1.4301. Upon request also available in versions made of stainless steel AISI 316L/W No. 1.4401</p> <p>The relief valves are available with different pressure ranges.</p> |
|--------------------|---|--|

4. Technical data

| Type                    | Code no. | Pressure range barg (psig) | Setting screw (min. to max.) mm (inch) | Flow (max.) l/min. (gpm) | Media and ambient temperature °C (°F) | Internal leakage 20% below max.. setting pressure l/min. (gpm) | Weight kg (lbs) |
|-------------------------|----------|----------------------------|--|--------------------------|---------------------------------------|--|-----------------|
| VRH 5                   | 180G0034 | 30-120 (435-1740)          | 5.3 (0.2)                              | 5 (1.3)                  | 50 (122)                              | up to 0.3 (up to 0.08)   | 0.62 (1.5)      |
| VRH 5 CA <sup>1)</sup>  | 180G0033 | 30-120 (435-1740)          | 5.3 (0.2)                              | 5 (1.3)                  | 50 (122)                              | up to 0.3 (up to 0.08)   | 0.62 (1.5)      |
| VRH 30                  | 180G0030 | 25-140 (362-2030)          | 5.3 (0.2)                              | 30 (7.9)                 | 50 (122)                              | up to 0.3 (up to 0.08)   | 0.62 (1.5)      |
| VRH 30                  | 180G0029 | 10-40 (145-580)            | 5.3 (0.2)                              | 30 (7.9)                 | 50 (122)                              | up to 0.3 (up to 0.08)   | 0.62 (1.5)      |
| VRH 30                  | 180G0031 | 45-210 (652-3045)          | 5.3 (0.2)                              | 30 (7.9)                 | 50 (122)                              | up to 0.3 (up to 0.08)   | 0.62 (1.5)      |
| VRH 30 CA <sup>1)</sup> | 180G0032 | 25-140 (362-2030)          | 5.3 (0.2)                              | 30 (7.9)                 | 50 (122)                              | up to 0.3 (up to 0.08)   | 0.62 (1.5)      |
| VRH 60                  | 180G0002 | 25-80 (362-1160)           | 6.2 (0.24)                             | 60 (15.8)                | 50 (122)                              | up to 1.0 (up to 0.3)  | 1.3 (2.4)       |
| VRH 60                  | 180G0003 | 80-140 (1160-2030)         | 6.2 (0.24)                             | 60 (15.8)                | 50 (122)                              | up to 1.0 (up to 0.3)  | 1.3 (2.4)       |
| VRH 120                 | 180G0020 | 25-80 (362-1160)           | 7.3 (0.28)                             | 120 (31.7)               | 50 (122)                              | up to 1.0 (up to 0.3)  | 2.8 (6.2)       |
| VRH 120                 | 180G0021 | 80-140 (1160-2030)         | 7.3 (0.28)                             | 120 (31.7)               | 50 (122)                              | up to 1.0 (up to 0.3)  | 2.8 (6.2)       |
| VRH 120 F <sup>2)</sup> | 180G0035 | 80-140 (1160-2030)         | 7.3 (0.28)                             | 120 (31.7)               | 50 (122)                              | up to 1.0 (up to 0.3)  | 2.8 (6.2)       |

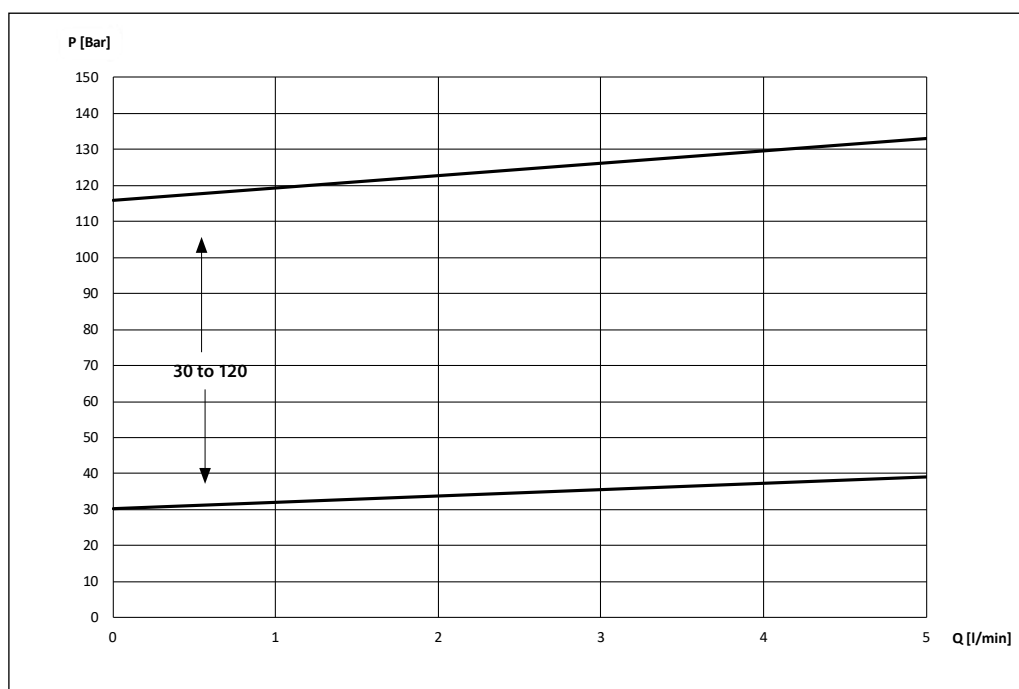
<sup>1)</sup> Cartridge version

<sup>2)</sup> Fire fighting version - recommended inspection after 500 hours of operation

5. Flow

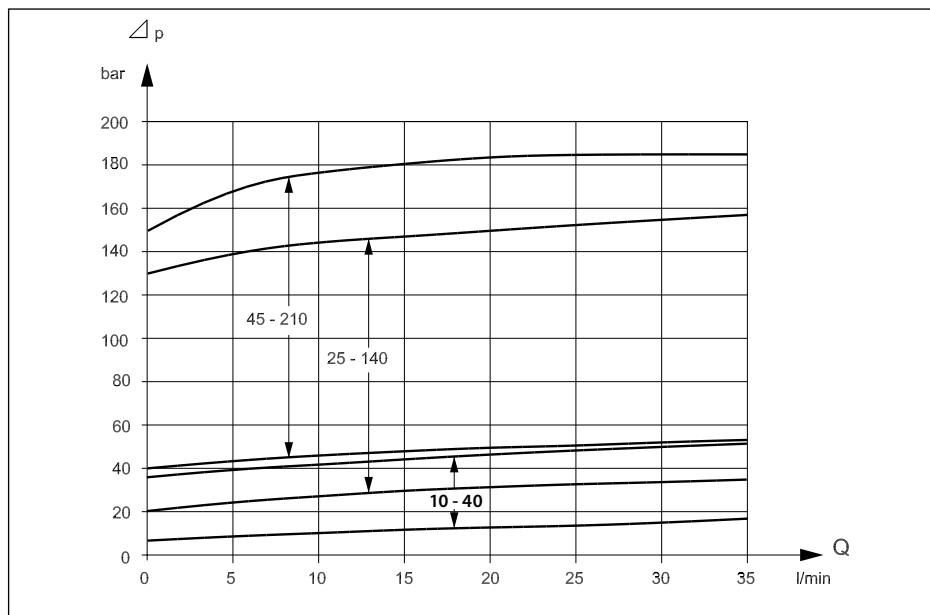
5.1 VRH 5 Max. flow: 5 l/min.

Pressure setting range: 30-140 barg (435-1740 psig)



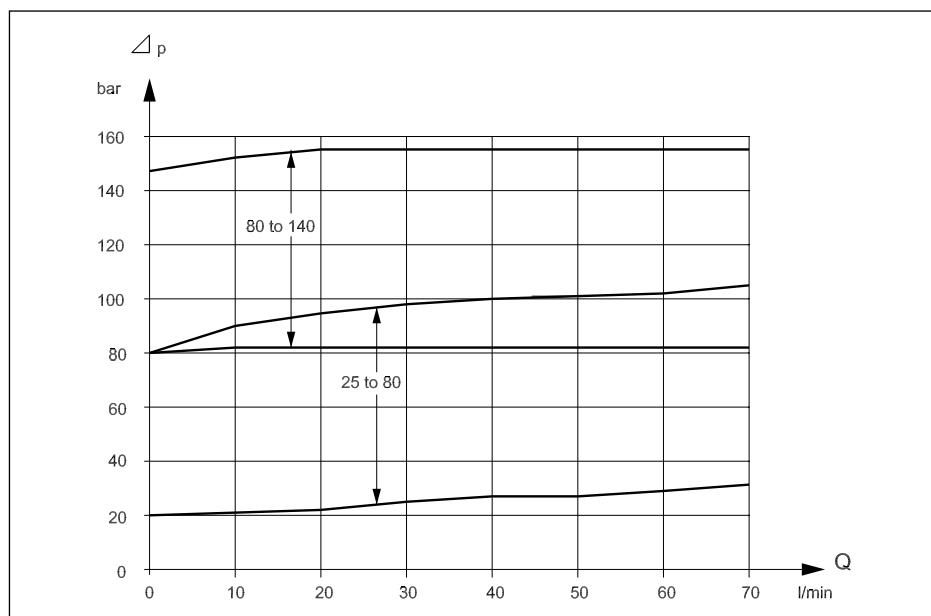
**5.2 VRH 30 Max. flow: 30 l/min.**

Pressure setting range: 10-40 barg, 25-140 barg, 45-210 barg  
(145-180 psig, 362-2030 psig, 652-3045 psig)

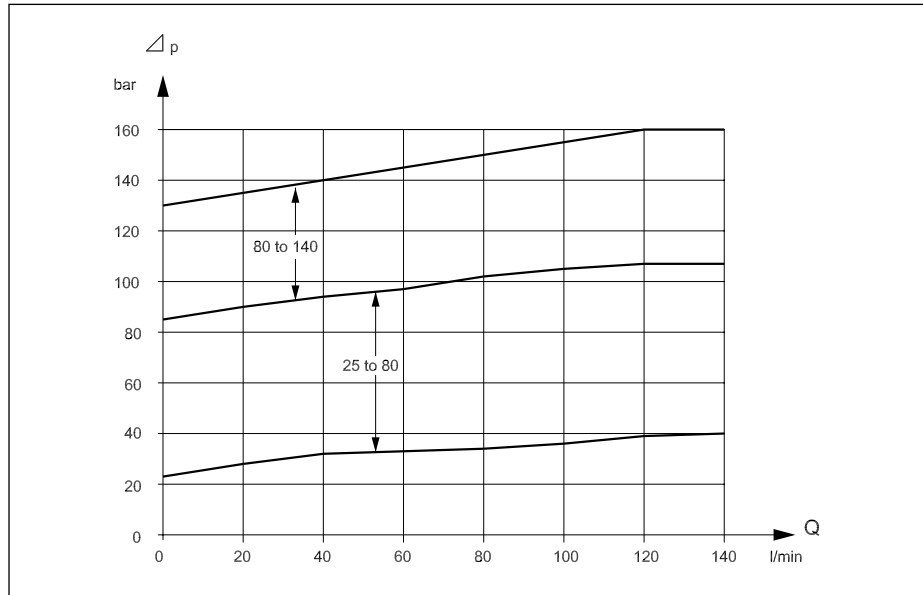


**5.3 VRH 60 Max. flow: 60 l/min.**

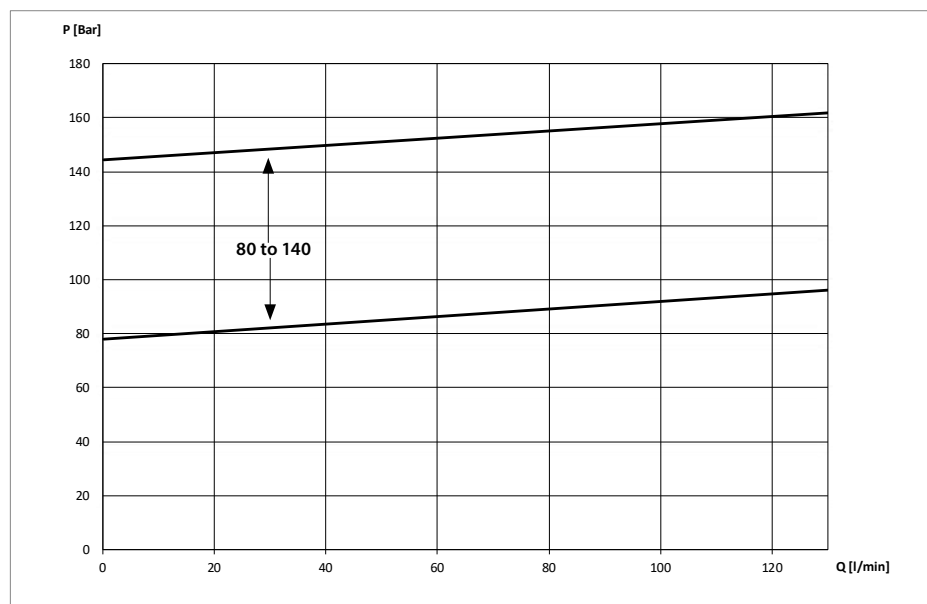
Pressure setting range: 25-80 barg, 80-140 barg  
(362-1160 psig, 1160-2030 psig)



**5.4 VRH 120 Max. flow: 120 l/min.**  
**Pressure setting range: 25-80 barg, 80-140 barg**  
**(362-1160 psig, 1160-2030 psig)**



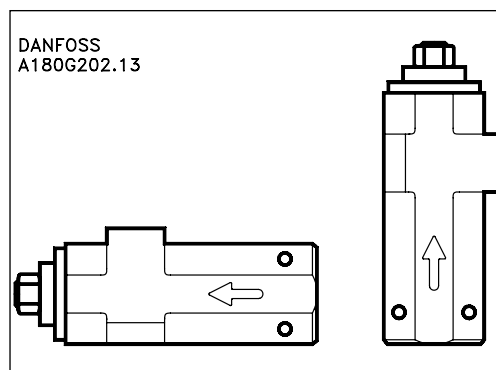
**5.5 VRH 120F Max. flow: 120 l/min.**  
**Pressure setting range: 80-140 barg**  
**(1160-2030 psig)**



**6. Mounting**

The valve is mounted in-line and fixed by means of the system's piping or fastened (only VRH 120) by means of the two 8.4 mm holes in the valve.

It is important that valve is bleed to avoid noise and therefore must the valve be mounted in the correct position - please see drawing



**7. Operation**

**Starting up**

To ensure stable working conditions for the valve it is very important to bleed the valve during starting up.

**Noise level**

Since the valve typically is mounted in-line or on a frame, the noise level can only be determined for the complete system, It is therefore very important that the valve is mounted correctly on a frame to minimize vibrations and noise.

**The noise level is influenced by:**

- Mounting position of the valve is important to ensure a good bleeding of valve.
- Sufficient bleeding of the valve.
- High pressure generates more noise than low pressure.
- Rigid mounting of the valve generates more noise than flexible mounting.
- Pipe mounting direct to the valve increases the noise level compared to a flexible hose connection.

**Filtration**

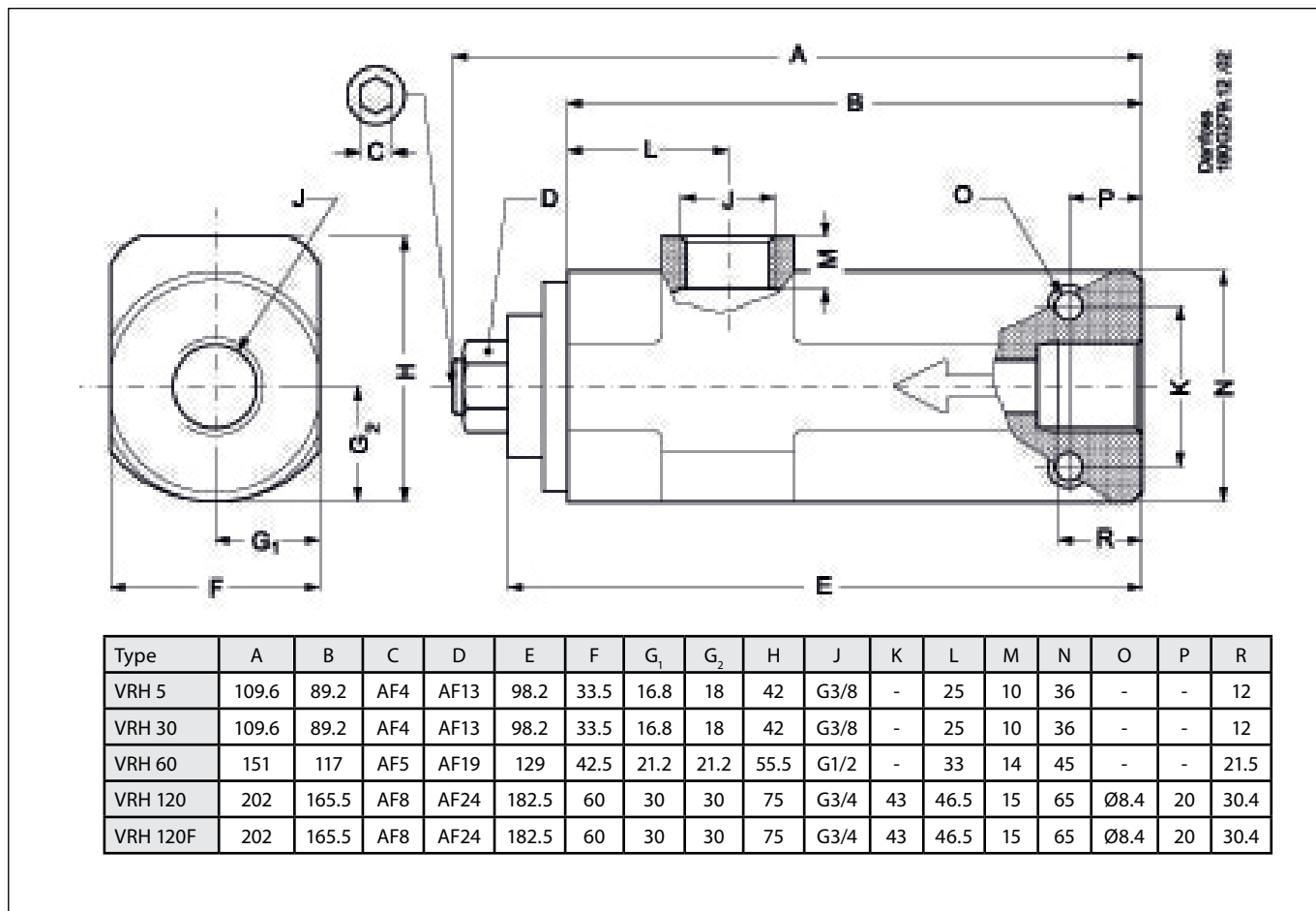
We strongly recommend that you always use precision depth filter cartridges in the system, rated 10 µm abs. β10 ≥ 5,000. or better.

**Corrosion and frost protection**

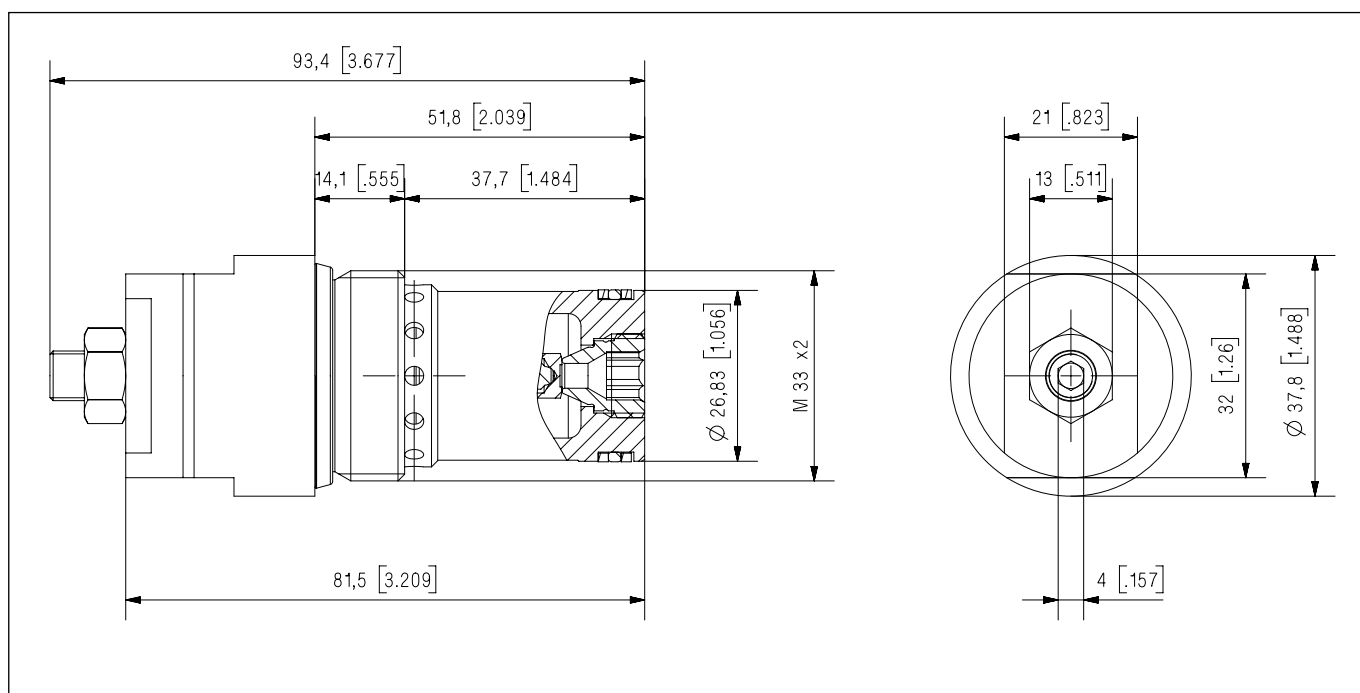
If the valve is exposed to temperature below freezing, it must be protected against freezing. Danfoss recommends DOWCAL N or Zitrec FC antifreezes both being biologically degradable Mono Propylene Glycol (MPG).

8. Dimensions

8.1 VRH 5, VRH 30, VRH 60 and VRH 120



8.2 VRH 5 CA and VRH 30 CA



## 9. Spare parts

| Valve size | Description  | Code no. |
|------------|--|----------|
| VRH 5      | Valve seat and cone kit 25-100 barg (362-1450 psig)                                  | 180G4018 |
| VRH 5      | Seal and spring kit  | 180G4019 |
| VRH 30     | Valve seat and cone kit [pressure range 10-40, 25-140 barg (145-580, 362-2030 psig)] | 180G4000 |
| VRH 5/30   | Guide and guide pin kit  | 180G4001 |
| VRH 30     | Seal and spring kit [pressure range 10-40 barg (145-580 psig)]                       | 180G4002 |
| VRH 5/30   | Tool kit   | 180G4003 |
| VRH 30     | Seal and spring kit [pressure range 25-140, 45-210 barg (362-2030, 652-3045 psig)]   | 180G4004 |
| VRH 30     | Valve seat and cone kit [pressure range 45-210 barg (652-3045 psig)]                 | 180G4005 |
| VRH 60     | Valve seat and cone kit [pressure range 10-140 barg (145-2030 psig)]                 | 180G4006 |
| VRH 60     | Guide and guide pin kit  | 180G4007 |
| VRH 60     | Seal and spring kit [pressure range 10-40 barg (145-580 psig)]                       | 180G4008 |
| VRH 60     | Seal and spring kit [pressure range 25-60 barg (362-1160 psig)]                      | 180G4009 |
| VRH 60     | Seal and spring kit [pressure range 80-140 barg (1160-2030 psig)]                    | 180G4010 |
| VRH 60     | Tool kit   | 180G4011 |
| VRH 120    | Valve seat and cone kit [pressure range 25-140 barg (362-2030 psig)]                 | 180G4012 |
| VRH 120    | Guide and guide pin kit  | 180G4013 |
| VRH 120    | Seal and spring kit [pressure range 25-80 barg (362-1160 psig)]                      | 180G4014 |
| VRH 120    | Seal and spring kit [pressure range 80-140 barg (1160-2030 psig)]                    | 180G4015 |
| VRH 120    | Tool kit   | 180G4016 |
| VRH 120 F  | Valve seat and cone kit [pressure range 80-140 barg (1160-2030 psig)]                | 180G4020 |

### 9.1 Recommendation for build in a VRH 5/30 CA

