



EC Declaration of Conformity

Issued in accordance with the Pressure Equipment Directive

Name and Address of Manufacturer within the European Community: -

Parker Hannifin Manufacturing Ltd., Instrumentation Products Division, Riverside Rd,
Barnstaple EX31 1NP United Kingdom

Description of Pressure Equipment:-

H-series Proportional Pressure Relief Valve – low pressure - (HPRV) in all specified materials. These products are manufactured in accordance with Parker Hannifin Instrumentation Products Division's ISO 9001:2000 Quality Management System.

Conformity Assessment Procedure Followed:- Module B + D

Name and Address of Notified Body monitoring the manufacture's quality assurance system:-

Zurich Engineering
126 Hagley Road
Edgbaston
Birmingham
B16 9PF

EC Design Examination Certificate:-

CEN – 060749/B

References of Harmonised Standards Used: -

N/A

References of other Technical Standards and Specifications used: -


ISO 15156 /
NACE MR0175
ASME VIII
ISO 4126/1
ISO 4126/7
AMS5678
ASTM A479-316

References of Other European Directives Used: -

Machinery Directive(2014/68/EU)

Authorised Person for the Manufacturer within the European Community

Signed:



Name: Mr. K. Ballard
Title: Division Engineering Manager
Date: 31/5/2018

Statement of Safe Operating Limits
For H-series Proportional Low Pressure Relief Valves.



Issued in accordance with the Pressure Equipment Directive (2014/68/EU)

**Parker Hannifin Manufacturing Ltd., Instrumentation Products Division, Riverside Rd,
 Barnstaple EX31 1NP United Kingdom**

The pressure equipment directive 2014/68/EU (PED) requires Parker Instrumentation Division Europe (IPDE), as a supplier, to confirm that valves are suitable and safe for the intended usage. This document is intended to provide guidance on the safe operating limits of the valve type, shown below. Should the actual application not fall within these limits or if there is any uncertainty the details should be referred back to Parker for confirmation of suitability of the product for the specific duty.

Basic valve model code:- HPRV

Inlet Pressure:- Minimum Setting:- 10 psi (0.7 bar)
 Maximum Setting:- 400 psi (27.6 bar)

Temperature:- Dependent on seal material – see figure 1.

Designator	Material	Temperature Range
V	Fluorocarbon Rubber	-23°C to +204°C (-10°F to +400°F)
EPR	Ethylene Propylene Rubber	-57°C to +135°C (-70°F to +135°F)
BN	Nitrile Rubber (Buna-N)	-34°C to +107°C (-30°F to +225°F)
KZ	Highly Fluorinated Fluorocarbon Rubber	-29°C to +93°C (-20°F to +200°F)
NE	Neoprene Rubber	-43°C to +121°C (-45°F to +250°F)

Figure 1: Operating temperature range

Please note at elevated temperatures the maximum working pressure of this product will be reduced – please see product literature for pressure vs. temperature curves.

Operating Media:-

It is the user's responsibility to ensure that the fluid (gas or liquid) is compatible with the materials as detailed by the bill of materials (BOM) – see figure 2.

Maximum Relieving Flow:-

Water 2.4 l/min @ 10 psi set pressure with zero back pressure.
 Nitrogen 6.8 l/min @ 10 psi set pressure with zero back pressure.
 Ambient temperature

Gas flow will be choked when $P_1 - P_2 / P_1 = X_T$ $X_T = 0.7$

Figure 3 denotes the capacity correction calculations for fluids other than Nitrogen and water.

Note:- For a 'safe' system the relieving flow capacity should exceed the maximum input flow. In this respect it should be noted that some standards permit the use of multiple relief valves to achieve required capacity. The maximum discharge capacity is not a given design specification for this valve, therefore the maximum discharge capacity quoted within the instructions is for informative purposes only. Should this guideline value not be sufficient to protect the equipment or systems from exceeding maximum pressure, another type of relief or safety valve should be used.

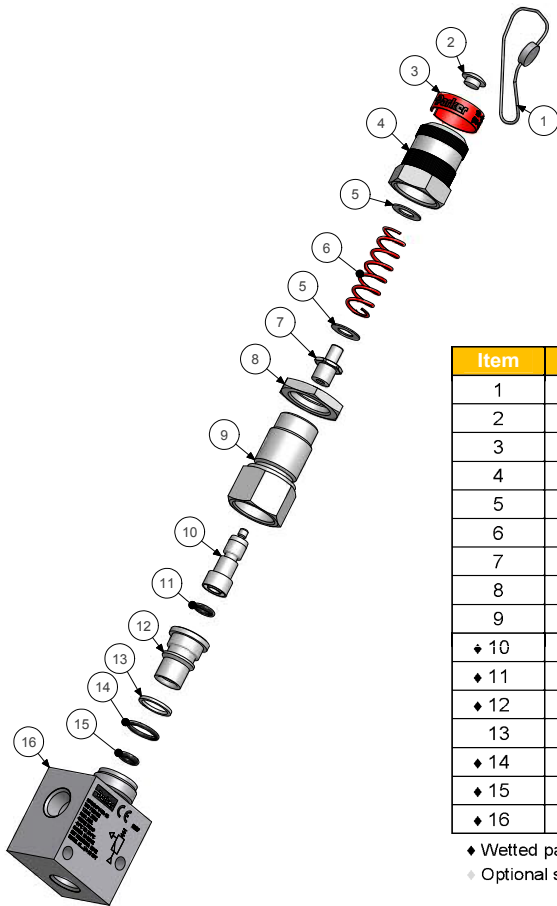


Figure 2: Bill of Materials

Item	Description	Material
1	Locking wire – with lead seal	316 stainless steel
2	Plug	Plastic
3	Spring identity label	Vinyl
4	Cap	ASTM A479 Type 316
5	Washer	PTFE
6	Spring	17Cr-7Ni Stainless steel
7	Upper stem	ASTM A479 Type 316
8	Locknut	316 Stainless steel
9	Bonnet	ASTM A479 Type 316
♦ 10	Lower stem	ASTM A479 Type 316
♦ 11	Seat	♦ Fluorocarbon rubber
♦ 12	Stem guide	ASTM A479 Type 316
13	Back-up ring	PTFE
♦ 14	Bonnet seal	♦ Fluorocarbon rubber
♦ 15	Stem seal	♦ Fluorocarbon rubber
♦ 16	Valve body	ASTM A182 Type F316

♦ Wetted parts

♦ Optional seat & seal materials are located in the How to Order section

Figure 3: Capacity Correction

Liquids other than water.

$$\text{Flow (Actual Liquid)} = \frac{\text{Flow (Water)}}{\sqrt{\text{SG (Actual Liquid)}}}$$

Where:

SG = Specific Gravity.

Actual Density of Water = 1000 kg/m³ @ 25°C.

Temperature effects are usually negligible, however this should be considered.

Gases other than Nitrogen(N₂) and temperatures other than 25°C.

$$\text{Flow (Actual Gas)} = \frac{\text{Flow (N}_2\text{)} * \sqrt{298}}{\sqrt{\text{SG (actual gas)}} * \sqrt{(273 + T)}}$$

Where:

SG = Specific Gravity relative to Nitrogen.

Actual Density of Nitrogen = 1.251 kg/m³ @ 25°C and 100 kPa.



Installation:-

This valve has been set to a predetermined cracking pressure. Such pressure is clearly stated on the valve body. No attempt should be made to use this valve in an application where the stated pressure is inappropriate. A tamper-proof system has been fitted, wire sealed, to the adjuster nut of the valve. Should the wire and seal show signs of tampering, please do not use this valve.

Capable of operating in all orientations, the valve can be mounted as required. The valve is supplied with a single inlet port and a single outlet port. It is the user's responsibility to establish if a return line is required and to install one as appropriate.

A-LOK and CPI tube end connections should be assembled in compliance to the supplied installation instructions (PKLFIT). NPT connections should be assembled in accordance with the assembly instructions of the chosen thread sealant / sealing tape. Adequate protection should be applied to all male threads to eliminate the risk of thread galling.

Maintenance:-

Disassembly / adjustment of the relief valve should only be undertaken by PED approved facilities – Any changes / modifications need to be clearly identified on the product to ensure compliance to the PED.