Safety Requirements Overview

Hydro-pneumatic accumulators are pressure equipments subjected to legal pressure regulations. For the operation and the testing of accumulator equipped hydraulics, all local regulations have to be observed to avoid any risks and to guarantee the safety for the whole lifetime of the units.

Therefore “safety devices in accordance with the PED 97/23/EC ANNEX 1:2.11” are available.

HYDAC offers various types of standard “safety devices”, which should be used on the gas and fluid sides to protect against pressures in excess of design parameters.

WARNING!

CAUTION!

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from HYDAC, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

HYDAC does not assume the risk of and shall not be liable for failure due to fire. HYDAC offers fire safety devices and recommends their use.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by HYDAC Corporation and its subsidiaries at any time without notice.

All accumulators should be visually inspected (signs of leakage etc.), tested for functionality and have a complete seal change out within 10 years of service.

Safety Devices

Protection on the Fluid Side

The fluid side has to be protected against excessive pressures with approved safety valves. HYDAC provides the pressure relief valve *(DB12 Series)* which has a pressure setting *(set by HYDAC)* up to 5800 psi (400 bar). The sealed valves carry a CE mark, and are integrated into the Safety and Shut-off Blocks in nominal sizes DN10 to DN32.

(See pages 53-59 for more details)

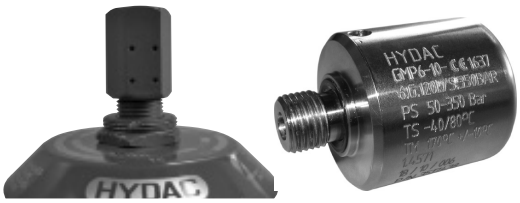
Note: The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact Product Management at HYDAC.

Protection on the Gas Side

Excess pressure on the gas side, especially by increased ambient temperatures (e.g. in case of a fire) has to be reduced completely or controlled with safety devices.

To achieve this, HYDAC offers three different types of protection which are available as optional equipment:

Thermal Fuse Caps and Plugs

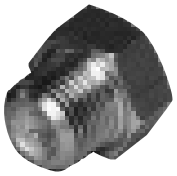


Protection by means of complete discharge in the case of excessive temperature and pressure.

Thermal Fuse Cap and Plugs are “safety devices” and are used for permissible working pressures of up to 690 bar in a temperature range of -40° to 176°F. Their melting point is approximately 320° to 356°F and bleeds off the gas pressure by discharging the nitrogen completely when the rise in temperature reaches unacceptable levels *(e.g. in case of fire)*.

Model Code	Part Number
Thermal Fuse Caps 7/8-14UNF	363501
GMP6-10-CE1637.6.G.120L/S.350Bar ISO228-G 1/4	3517438
GMP6-10-CE1637.6.G.120L/S.350Bar ISO228-G 1/2	3517439

Burst Discs



Protection by means of complete discharge when pressure exceeds the permitted level.

Burst discs are designed for different pressure settings and will be supplied with a Declaration of Conformity.

If their set pressure is exceeded, the burst disc is destroyed. The passage remains open and discharges the nitrogen completely.

Burst discs are made entirely of stainless steel and/or stainless steel / nickel alloy.

Model Code	Burst Pressure ±10% at 122°F	Part Number
Burst Disc Plug 1/4 NPT	3045 psi (210 bar)	3156148
Burst Disc Plug 1/4 NPT	3626 psi (250 bar)	3156150
Burst Disc Plug 1/4 NPT	5076 psi (350 bar)	3156152
Burst Disc Plug 1/4 NPT	6527 psi (450 bar)	3156155

Note: higher pressures on request

Gas Safety Valves

Protection by means of controlled pressure reduction when pressure exceeds the permitted level.

The Gas Safety Valve *(GSV6 Series)* is a direct-operating, spring loaded safety valve with a setting range of 435 to 5366 psi (30 to 370 bar) within a temperature range of -4° to 176°F (-20° to 80°C).

All the components of the valve are in stainless steel and therefore suitable for a variety of applications. The GSV6 Series will be supplied with a Declaration of Conformity and an operating instruction manual. Due to its self-centering seal ring, fitting is simple and safe.

Model Code	Pressure Setting ±5%	Part Number
GSV6-10-CE1637.ISO4126-1.6.G.015.030	450 psi (30 bar)	3123965
GSV6-10-CE1637.ISO4126-1.6.G.095.160	2320 psi (160 bar)	3124038
GSV6-10-CE1637.ISO4126-1.6.G.125.210	3045 psi (210 bar)	3124043
GSV6-10-CE1637.ISO4126-1.6.G.148.250	3626 psi (250 bar)	3124047
GSV6-10-CE1637.ISO4126-1.6.G.205.350	5076 psi (350 bar)	3124057

Note: Others available on request

WARNING: HYDAC does not assume the risk of and shall not be liable for failure due to fire. HYDAC offers fire safety devices and recommends their use.

Note: The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact Product Management at HYDAC.