

ICS 23.060.99

CCS J 16



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 24921.2-2010

**Sizing, se-lection and installation of pressure relieving valves
for petrochemical industries -- Part 2: Installation**

(English Translation)

Issued on: August 9, 2010

Implemented on: December 31, 2010

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of PRC**

Table of Contents

Foreword...	3
1 Scope...	4
2 Normative references...	4
3 Terms and definitions...	4
4 General installation requirements...	4
5 Inlet and discharge pipelines...	5
6 Isolation valve installation...	11
7 Installation of vent holes...	14
8 Installation of multiple valves with different set pressures...	15
9 Pre-installation inspection...	16
Appendix A (Informative) Examples of installation of typical isolation valve...	18

1 Scope

This Part of GB/T 24921 specifies the general requirements for the installation of pressure relief valves for petrochemical industry, inlet and discharge pipelines, isolation valve installation, vent installation, multi-valve installation with different set pressures, pre-installation inspection.

This Part is applicable to pressure relief valves which have a set pressure of not less than 0.1 MPa for petrochemical industry.

2 Normative references

The provisions in following documents become the provisions of this Part through reference in this Part of GB/T 24921. For the dated references, the subsequent amendments (excluding corrections) or revisions do not apply to this Part; however, parties who reach an agreement based on this Part are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/T 12241 Safety valves - General requirements

GB/T 12242 Pressure relief devices - Performance test code

GB/T 24920 Steel pressure relief valves for petrochemical industries

GB/T 24921.1 Sizing, installation and installation of pressure relieving valves for petrochemical

industries - Part 1. Sizing and selection

3 Terms and definitions

The terms and definitions established in GB/T 12241, GB/T 12242, GB/T 24921.1 apply to this Part.

4 General installation requirements

4.1

In order to ensure the reliable and normal operation of the pressure equipment system, the pressure relief valve shall be installed correctly.

5.3.5 When the additional back pressure is higher than the inlet pressure of the pilot pressure relief valve, the main valve will be opened to produce backflow. When installing the discharge pipe of the pilot pressure relief valve, especially when multiple valves lead to a common discharge main pipe, consider installing auxiliary devices to prevent backflow.

5.3.6 When liquid accumulates at the outlet of the pressure relief valve, a sewage pipe or a drain pipe shall be installed. This sewage pipe or drain pipe can be installed on the discharge pipe (see Figure 1) or on the drain port of the pressure relief valve body, or at a separate connection sewage port.

5.3.7 Where there are flammable, toxic, or corrosive hazardous media in the discharge pipeline, the installation must take into account the ability to discharge to a safe location.

5.3.8 The discharge reaction force generated by the discharge pipeline shall take into account the excessive stress caused by the reaction force on the pressure relief valve and the inlet pipeline.

5.3.9 When a muffler is installed on the discharge pipeline, it shall be considered that the muffler has sufficient flow area and meets the requirements of 5.3.2.

6.1 Installation requirements

6.1.1

The typical installation of the isolation valve on the inlet and discharge pipeline of the pressure relief valve is shown in Figures 10 ~ 13. See Appendix A for typical installation examples.

6.1.2

When installing the isolation valve on the inlet and discharge pipeline of the pressure relief valve, it shall not violate the requirements of national laws or regulations.

6.1.3

The isolation valve shall be properly installed and used; a locking device shall be provided to ensure that the safety of the system is not endangered. Appropriate control measures must be taken for the relevant potential hazards.

7.2 Installation method

7.2.1

Conventional pressure relief valves can be closed or open, without special exhaust requirements. The open valve cover is used for steam and is directly discharged to the atmosphere. The valve cover closed valve is discharged internally to the discharge side, the vent holes on the valve cover are usually sealed with screw plugs.

7.2.2

The valve cover of the bellows balanced pressure relief valve must always keep the vent hole in the vent state, to ensure the normal operation of the valve. The vent hole on the valve cover can also be used as a visual leak detection hole, to determine whether the bellows is broken. Ice, insects or other obstacles shall be prevented from blocking the vent hole.

7.2.3 For bellows balanced pressure relief valves with auxiliary balancing pistons, the

vent holes on the valve cover shall be connected to the atmosphere and allow part of the medium to flow out from the vent holes.

7.2.4 When the medium is flammable, toxic or corrosive, a pipe shall be installed to connect the valve cover vent holes to a safe location.

7.2.5 For pilot pressure relief valves, the pilot valve vent holes are usually connected to the atmosphere during installation. If discharge to the atmosphere is not allowed, the pilot valve can be connected to the discharge pipe or discharged to a safe place through the auxiliary pipe system.

7.2.6 For the design of the pilot valve vent hole, unless the pilot valve is a balanced design structure, back pressure shall be avoided as much as possible.

8.1 General requirements

In order to ensure the pressure, large displacement, action and sealing performance of the pressure relief valve of the pressure-bearing equipment system, meanwhile, to avoid the inconvenience caused by a single low-pressure and large-size pressure relief valve to the operation and maintenance of the equipment, multiple pressure relief valves with different set pressures are usually installed in the system, to achieve overpressure discharge, as

shown in Figure 16.

8.2 Installation requirements

8.2.1

When the inlet pipelines of multiple pressure relief valves are shared pipelines, the flow channel area of the shared pipeline must be at least equal to the sum of the inlet areas of each pressure relief valve connected to it, as shown in Figure 16a).

.....