The following is the relevant information about the resilient seated gate valve specially designed for fire protection, including product introduction, typical installation schematic diagram, maintenance and troubleshooting, as well as performance characteristics:

Product Introduction

The resilient seated gate valve for fire protection is a crucial valve component specifically developed for fire protection systems. It is mainly composed of a valve body, a gate, a valve stem, a resilient sealing seat, and other key parts. The valve body is usually fabricated from high-strength materials such as ductile iron or stainless steel, which endows it with excellent corrosion resistance and mechanical strength to withstand harsh environmental conditions and high-pressure impacts in fire protection scenarios.

The gate is precisely machined to ensure seamless cooperation with the resilient sealing seat. The resilient sealing seat, made of high-quality rubber materials that meet relevant fire protection and hygiene standards, can achieve a tight seal, effectively preventing the leakage of fire protection water or other media. This type of valve is primarily installed in fire protection pipelines, including sprinkler systems, hydrant systems, and other fire protection water supply pipelines, playing a vital role in controlling the flow of fire protection media and ensuring the normal operation of fire protection systems.

Typical Installation Schematic Diagram

1. **Installation on Fire Protection Pipeline**: When installing on a fire protection pipeline, the valve should be positioned according to the pipeline layout and design requirements. It is generally recommended to install it on a horizontal or vertical pipeline. When installed horizontally, ensure that the valve is in a stable state, and the direction of the medium flow should be consistent with the arrow marked on the valve body. For vertical installation, make sure that the gate can move freely up and down without any obstruction, and the valve stem should be in a vertical position.
2. **Connection Method**: Flange connection is commonly used for this valve. Before installation, accurately align the flanges of the valve and the pipeline, and install suitable gaskets between them to ensure a reliable seal. In addition, it is necessary to ensure that the installation location is easily accessible for operation and maintenance.
3. **Surrounding Facilities**: Pressure gauges and flow switches can be installed before and after the valve to monitor the pressure and flow of the fire protection medium in real-time. In some cases, a bypass pipeline may be set up to facilitate valve maintenance and replacement without affecting the normal operation of the fire protection system. At the same time, appropriate supports and fixing devices should be provided to ensure the stability of the valve during operation.

Maintenance and Troubleshooting

- **Maintenance**:
    - **Regular Inspection**: Regularly check the valve for any signs of leakage, especially at the connection between the gate and the resilient sealing seat, as well as the flange joints. Inspect the valve stem for corrosion, wear, or deformation, and ensure that the threads are in good condition. In addition, check the overall condition of the valve body for any cracks or damage.
    - **Lubrication**: Lubricate the valve stem regularly with a suitable lubricant that

complies with fire protection requirements to reduce friction and ensure smooth operation of the valve. Pay attention to cleaning the valve stem before lubrication to remove any dirt or debris.
    - **Cleaning**: Keep the valve body and its surrounding area clean, and remove any debris or sediment that may accumulate on the surface or inside the valve. For valves used in fire protection systems with relatively poor water quality, more frequent cleaning may be required to prevent blockages and ensure the normal flow of the medium.
- **Troubleshooting**:
    - **Leakage**: If leakage occurs at the flange joints, check whether the bolts are tightened evenly and whether the gaskets are damaged. If leakage occurs between the gate and the resilient sealing seat, it may be due to wear of the sealing seat, damage to the gate, or improper installation. In such cases, replace the damaged parts in a timely manner and ensure correct installation.
    - **Difficult Operation**: If the valve is difficult to open or close, it may be caused by insufficient lubrication of the valve stem, rust or debris blocking the movement of the gate, or deformation of the valve stem. Check and solve these problems according to the specific situation, such as adding lubricant, cleaning the valve, or replacing the damaged parts. In addition, check whether the actuator (if any) is working properly.
    - **Malfunction of Monitoring Devices**: If the pressure gauges or flow switches installed around the valve malfunction, check the electrical connections, calibration status, and whether there are any blockages or damages to the sensing parts. Repair or replace the faulty devices as needed to ensure accurate monitoring of the fire protection system.

Performance Characteristics

1. **High Sealing Performance**: The resilient sealing seat of the valve provides excellent sealing performance, which can effectively prevent the leakage of fire protection media, ensuring the reliability of the fire protection system during emergency situations.
2. **Fire Resistance and Corrosion Resistance**: The materials used in the valve body and other components have good fire resistance and corrosion resistance, enabling the valve to maintain stable performance under high-temperature and humid environments, as well as in the presence of various corrosive substances.
3. **Quick Opening and Closing**: The valve is designed to achieve quick opening and closing, which is crucial for rapidly responding to fire emergencies and ensuring the timely supply of fire protection water.
4. **High Pressure Resistance**: It can withstand high-pressure impacts in fire protection systems, ensuring the normal operation of the pipeline under high-pressure conditions and providing sufficient water pressure for firefighting operations.
5. **Easy to Operate and Maintain**: The valve has a simple structure and is easy to operate, whether it is manual operation or equipped with an automatic actuator for remote control. Regular maintenance is also relatively convenient, which helps to reduce the maintenance cost and workload of the fire protection system.

6. **Compliance with Fire Protection Standards**: This valve complies with relevant national and international fire protection standards and regulations, ensuring its safety and reliability in fire protection applications.