



PLUG VALVE SERIES

# Threaded Sleeve Plug Valve

## X13F

Compact non-lubricated plug valve for natural gas, LPG, oil, chemical and compatible industrial service, with threaded ends and PTFE sleeve sealing.

## 01 Key Specifications

|                 |                                                                    |
|-----------------|--------------------------------------------------------------------|
| Product Type    | Sleeve-type non-lubricated plug valve, quarter-turn, threaded      |
| Nominal Size    | DN15-DN100                                                         |
| Pressure Rating | PN10 / PN16 / PN25 / PN40; ASME Class 150 / 300                    |
| Body Materials  | WCB carbon steel / CF8 (SS304) / CF8M (SS316) / CF3 / CF3M         |
| Sleeve Material | PTFE standard; reinforced PTFE where offered                       |
| Plug Material   | Stainless steel; Monel option where offered                        |
| Operation       | Manual lever standard; pneumatic or electric actuator options      |
| Typical Service | Natural gas / LPG / oil / chemical and compatible industrial media |

## 02 Design Features & Configuration

|                                                                                                                                                              |                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Threaded Connection</b></p> <p>Compact installation in small-bore piping without flanges, saving space and material cost.</p>                          | <p><b>Non-Lubricated Sleeve Design</b></p> <p>PTFE sleeve provides sealing and low-friction plug rotation without periodic grease lubrication.</p> |
| <p><b>Self-Cleaning Action</b></p> <p>The plug wipes the sealing surface during each quarter turn, helping reduce buildup from viscous or scaling media.</p> | <p><b>Cavity-Free Construction</b></p> <p>Minimizes trapped media around the plug and helps simplify process isolation.</p>                        |
| <p><b>Quarter-Turn Operation</b></p> <p>90-degree rotation provides rapid open/close operation and compact actuation.</p>                                    | <p><b>Automation Options</b></p> <p>Pneumatic and electric actuator configurations can be supplied for automated service.</p>                      |

## 03 Materials of Construction

| Component               | Standard Material                                | Options                           |
|-------------------------|--------------------------------------------------|-----------------------------------|
| Body / Cover            | ASTM A216 WCB carbon steel                       | CF8 / CF8M / CF3 / CF3M           |
| Plug                    | Stainless steel                                  | Monel / F6 / F316 / F304L / F316L |
| Sleeve                  | PTFE                                             | Reinforced PTFE where offered     |
| Stem / Adjusting Washer | Stainless steel                                  | F6 / F316 / F304L / F316L         |
| Gasket / Shim           | Flexible graphite + stainless steel spiral wound | Confirm for selected model        |
| O-ring                  | FKM / Viton where fitted                         | Confirm for selected medium       |
| Bolts / Nuts            | ASTM A193-B7 / A194-2H                           | Stainless grades where offered    |

## 04 Pressure Ratings & Temperature

|                      |                                                                                             |
|----------------------|---------------------------------------------------------------------------------------------|
| Pressure Classes     | PN10 / PN16 / PN25 / PN40; ASME Class 150 / 300                                             |
| PTFE Sleeve          | -29 C to +180 C reference                                                                   |
| Reinforced PTFE      | Higher temperature range where offered                                                      |
| Pressure-Temperature | Final P-T limits depend on sleeve, body material, pressure class and selected configuration |

## 05 Thread & Operation Options

|                    |                                                                                     |
|--------------------|-------------------------------------------------------------------------------------|
| Thread Standards   | NPT / BSPT / BSPP-G                                                                 |
| Manual Operation   | Quarter-turn manual operation, locking option where offered                         |
| Pneumatic Actuator | Double-acting or spring-return options                                              |
| Electric Actuator  | On/off or modulating control; power supply and control signal confirmed per project |

06 Typical Reference Dimensions

| DN  | NPS      | Thread Size | L, mm | H, mm | Weight, kg |
|-----|----------|-------------|-------|-------|------------|
| 15  | 1/2 in   | 1/2         | 90    | 120   | 1.5        |
| 20  | 3/4 in   | 3/4         | 100   | 130   | 2.0        |
| 25  | 1 in     | 1           | 115   | 145   | 2.8        |
| 32  | 1-1/4 in | 1-1/4       | 130   | 160   | 4.0        |
| 40  | 1-1/2 in | 1-1/2       | 145   | 175   | 5.5        |
| 50  | 2 in     | 2           | 165   | 200   | 8.0        |
| 65  | 2-1/2 in | 2-1/2       | 195   | 225   | 12.0       |
| 80  | 3 in     | 3           | 220   | 250   | 17.0       |
| 100 | 4 in     | 4           | 250   | 280   | 24.0       |

Dimensions are reference values for the supplied X13F data. Actual dimensions depend on thread standard, pressure class, body construction and operation type. Confirm final dimensions on the approved drawing.

07 Standards & Testing

|                        |                                                                          |
|------------------------|--------------------------------------------------------------------------|
| Design / Manufacturing | API 599 / API 6D / GB/T 12240 / GB/T 22130                               |
| Thread Standards       | ASME B1.20.1 / ISO 7-1 / ISO 228-1                                       |
| Pressure Testing       | API 598 / API 6D / GB/T 13927                                            |
| Pressure-Temperature   | ASME B16.34                                                              |
| Fire-Safe              | API 607 / API 6FA only where the selected design has valid qualification |
| Anti-Static            | Optional for gas service where specified                                 |

08 Quality & Documentation

Pressure Test Report

Shell and seat pressure test documentation may be supplied for the selected order.

Dimensional Inspection

Key dimensions can be verified against the approved drawing.

Third-Party Inspection

Third-party inspection can be coordinated according to order requirements.

Material Certificate

EN 10204 2.2 / 3.1 documentation available where specified.

Sleeve Material Record

PTFE sleeve grade and temperature rating can be documented for the selected configuration.

Export Documentation

Protective packing and shipment documents can be arranged for export supply.

## 09 Applications

- Natural gas meter inlet and small-bore gas distribution lines
- LPG transfer and distribution systems
- Instrument and gauge isolation points
- Oil and gas field small-bore process lines
- Chemical and petrochemical service with viscous or scaling media
- Compact skids and equipment isolation
- General industrial service requiring quarter-turn threaded isolation

## 10 Product Views



## 11 Frequently Asked Questions

### What is the difference between X13F and X43F?

X13F uses threaded ends and is intended for compact small-bore installations. X43F uses flanged ends and is more suitable for larger sizes or applications requiring a rigid removable flange connection.

### Can X13F be used for natural gas?

Yes, the supplied product information includes natural gas and LPG among typical services. The final pressure, temperature, leakage and anti-static requirements should be confirmed for the selected project.

### Which thread standard should I specify?

NPT, BSPT and BSPP-G are not interchangeable. Specify the exact thread standard and sealing method to match the mating piping.

### Why use a sleeve plug valve instead of a ball valve?

The PTFE sleeve provides a wiping, self-cleaning sealing action and a cavity-free arrangement that can be advantageous in viscous, scaling or dirty media.

## 12 How to Order

Send the valve size and quantity, body material, pressure class, thread standard, sleeve material, service medium and operating temperature, operation method, port configuration, and required quality documentation. ZeMin Gas can support configuration confirmation before quotation.

**Note:** Technical data in this datasheet is based on the product information supplied for X13F. Final dimensions, materials, ratings and documentation should be confirmed against the approved quotation and drawing for the selected model.