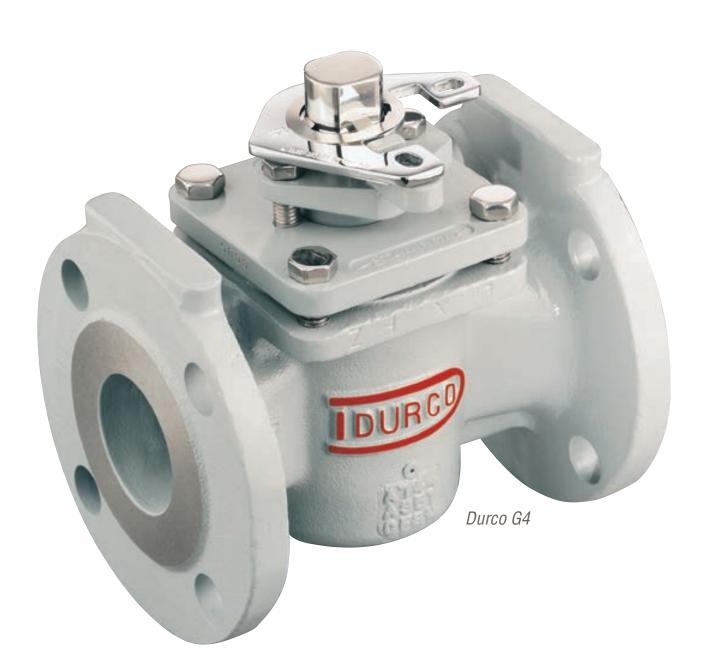
# Конические клапаны

# Технические характеристики

Архангельск (8182)63-90-72 Астана (7172)727-132 Астрахань (8512)99-46-04 Барнаул (3852)73-04-60 Белгород (4722)40-23-64 Брянск (4832)59-03-52 Владивосток (423)249-28-31 Волгоград (844)278-03-48 Вологда (8172)26-41-59 Воронеж (473)204-51-73 Екатеринбург (343)384-55-89 Иваново (4932)77-34-06 Ижевск (3412)26-03-58 Казань (843)206-01-48 Калининград (4012)72-03-81 Калуга (4842)92-23-67 Кемерово (3842)65-04-62 Киров (8332)68-02-04 Краснодар (861)203-40-90 Красноярск (391)204-63-61 Курск (4712)77-13-04 Липецк (4742)52-20-81 Магнитогорск (3519)55-03-13 Москва (495)268-04-70 Мурманск (8152)59-64-93 Набережные Челны (8552)20-53-41 Нижний Новгород (831)429-08-12 Новокузнецк (3843)20-46-81 Новосибирск (383)227-86-73 Омск (3812)21-46-40 Орел (4862)44-53-42 Оренбург (3532)37-68-04 Пенза (8412)22-31-16 Пермь (342)205-81-47 Ростов-на-Дону (863)308-18-15 Рязань (4912)46-61-64 Самара (846)206-03-16 Санкт-Петербург (812)309-46-40 Саратов (845)249-38-78
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# **PLUG**

The range of plug valve applications is broad, and the Flowserve portfolio reliably addresses the vast majority of requirements. High temperatures and pressures. Corrosive or dirty media. Lethal, toxic and sub-zero fluids. Our family of plug valves delivers low energy consumption through low-torque designs and safe operation with tight shutoff performance. High levels of uptime are achieved through pressure-balanced designs. Absolute shutoff requirements can be addressed by double-isolation models.

# Plug – Quick Reference\*

Product	Sub-Type	Sizes	Pressures	Temperatures
Mach 1™	Non-Lubricated	DN 25 to 200 NPS 1 to 8	PN 10, 16, 25, 40 and 100 Class 150, 300 and 600	-46°C to 274°C (-50°F to 525°F)
G4	Non-Lubricated	DN 15 to 450 NPS ½ to 20	PN 10, 16, 25 and 40 Class 150 and 300	-46°C to 288°C (-50°F to 550°F)
G4Z-HF	Non-Lubricated	DN 15 to 450 NPS ½ to 20	PN 10, 16, 25 and 40 Class 150 and 300	-46°C to 288°C (-50°F to 550°F)
Multiport Series — Steel and Iron	Lubricated	NPS ½ to 12 DN 15 to 300	PN 20 to 420; Class 150 to 2500; 150 to 400 CWP (iron)	to 450°C (232°F)
Super Nordstrom® — Steel	Lubricated	NPS ½ to 4 DN 15 to 100	Class 150 to 600	-29°C to 177°C (-20°F to 350°F)
Bolted Gland — Iron	Lubricated	NPS 6 to 36 DN 150 to 900	120 to 500 CWP	-29°C to 177°C (-20°F to 350°F)
Bolted Gland — Steel	Lubricated	NPS 6 to 12 DN 150 to 300	Class 150	-29°C to 177°C (-20°F to 350°F)
Dynamic Balance® — Iron	Lubricated	NPS 4 to 20 DN 100 to 500	150 to 200 CWP	-29°C to 177°C (-20°F to 350°F)

<sup>\*</sup> Additional products shown on next page

# **Plug** — Quick Reference, cont'd.

Product	Sub-Type	Sizes	Pressures	Temperatures
Dynamic Balance — Steel	Lubricated	NPS 1 to 30 DN 25 to 750	Class 150 to 2500	-46°C to 816°C (-50°F to 1500°F)
Super Nordstrom Two-Bolt Cover — Iron	Lubricated	NPS ½ to 5 DN 15 to 125	200 CWP	-29°C to 93°C (-20°F to 200°F)
Super Nordstrom Two-Bolt Cover — Steel	Lubricated	NPS ¾ to 4 DN 20 to 100	13.7 bar (200 psi)	-29°C to 93°C (-20°F to 200°F)
DIPV — Double-Isolation	Lubricated	DN 15 to 600 NPS ½ to 24	PN 20 to 420 Class 150 to 2500 API 2000 to 10 000	-46 to 375°C (-51 to 700°F)
Double-Isolation — Steel	Lubricated	DN 50 to 300 NPS 2 to 12	Class 150 to 2500	-46°C to 232°C (-50°F to 450°F)
Screwed Gland Type — Iron	Lubricated	DN 15 to 100 NPS ½ to 4	200 to 800 CWP	-29°C to 178°C (-20°F to 353°F)
Taper Plug	Lubricated	DN 15 to 300 NPS ½ to 12	to PN 50 to Class 300	-20°C to 250°C (-5°F to 480°F)
Super-H	Lubricated	DN 15 to 300 NPS ½ to 36	PN 20 to 420 Class 150 to 2500 API 2000 to 10 000	-46°C to 375°C (-51°F to 700°F)
TIPV — Twin Isolation	Lubricated	DN 15 to 600 NPS ½ to 24	PN 20 to 420 Class 150 to 2500 API 2000 to 10 000	-46°C to 375°C (-51°F to 700°F)
T4E	Lined	DN 15 to 300 NPS ½ to 12	PN 16 Class 150 to 300	-29°C to 204°C (-20°F to 400°F)

Durco

#### NON-LUBRICATED

### Mach 1

All-purpose, non-lubricated Sleeveline plug valve designed to provide reliable service with consistent, lower torques for cost-effective actuation.

- Dependable, tight shutoff and in-line seal adjustment from tapered plug design
- Reduced actuation costs from lower constant turning torques owing to unique plug and sleeve design
- · Lower maintenance costs with in-line seat replacement
- High-temperature and high-pressure capabilities to 274°C (525°F) and Class 600 (derated)
- Ease of operation enabled by ISO 5211 mounting pad with universal flange and double-D plug stem that accepts most standard actuation

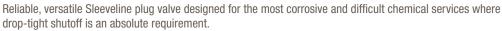
#### **SPECIFICATIONS**

Sizes: DN 25 to 200: NPS 1 to 8 Press: PN 10. 16. 25. 40 and 100: Class 150, 300 and 600

Temp: -46°C to 274°C (-50°F to 525°F) Refer to literature DVATB0030 at /

library.

### NON-LUBRICATED **G4**





- Lower maintenance costs due to design that utilizes two adjuster fasteners that permit in-line seal adjustments under pressure within seconds
- · Low fugitive emissions through fluoropolymer reverse-lip diaphragm that provides a pressure-activated, self-energizing dynamic and static stem seal
- Compatibility with a range of Automax<sup>™</sup> actuators and other instrumentation
- . Options for lethal, toxic and sub-zero fluid services plus process control and high flow requirements

#### **SPECIFICATIONS**

Sizes: DN 15 to 450; NPS 1/2 to 20 Press: PN 10, 16, 25 and 40; Class 150 and 300

Temp: -46°C to 288°C (50°F to 550°F)

Refer to literature DVENBR0024 at / library.



### G4Z-HF

Reliable, HF alkylation plug value preferred at refineries throughout the world when drop-tight shutoff is an absolute requirement.



Durco

Durco

- Corrosion-resistant Monel M35-1 and API 607 fire-sealed construction ideal for refinery applications that include HF and H<sub>2</sub>SO, alkylation
- Dependable, tight shutoff and in-line seal adjustment from tapered plug design
- Low fugitive emissions through fluoropolymer reverse-lip diaphragm that provides a pressure-activated, self-energizing dynamic and static stem seal
- · Ease of operation enabled by compatibility with a wide range of Automax actuators and other instrumentation

#### **SPECIFICATIONS**

Sizes: DN 15 to 450; NPS 1/2 to 20 Press: PN 10, 16, 25 and 40;

Class 150 and 300

Temp: -46°C to 288°C (-50°F to 550°F)

Refer to literature DVENTB0025 at /

library.

### **PLUG**



Nordstrom

#### LUBRICATED

### Multiport Series - Steel and Iron

Dynamic Balance (steel), Super Nordstrom (steel) and Nordstrom Iron multiport plug valves are extremely efficient and designed for applications that ordinarily require two to four straightway valves.

- Low inventory carrying costs and convenient operations as a result of the simplified piping that eliminates the need for other fittings
- Broad application use via the ports and stops that can be arranged to fit required operating conditions
- Greater process control by eliminating waste, overpressure on equipment or incorrect mixtures due to the convenient design
- Efficient operation facilitated by the sealant grooves, which provide consistent lubrication while protecting against corrosion

#### **SPECIFICATIONS**

Sizes: NPS ½ to 12; DN 15 to 300 Press: PN 20 to 420; Class 150 to 2500;

150 to 400 CWP (iron) Temp: to 450°C (232°F)

Refer to literature NVABR0014 at / library.

### LUBRICATED

## **Super Nordstrom – Steel**

Well-tested, economical line of super-steel plug valves that provides dependable operations and eliminates the need for field readjustments.



- Increased uptime provided by the precisely controlled vertical lifting of the plug, which eliminates its wedging without affecting tight shutoff
- Durable performance via the specially shaped weather seal that protects the stem, gland and packing from hostile environments and corrosion
- Reliable operation enabled by the Sealdport<sup>™</sup> sealant grooving system, designed to give complete distribution of pressurized sealant to seating surfaces

#### **SPECIFICATIONS**

Sizes: NPS ½ to 4, DN 15 to 100 Press: Class 150 to 600

Temp: -29°C to 177°C (-20°F to 350°F)

Refer to literature NVENBR1004 at /

library.

Nordstrom

### LUBRICATED

### **Bolted Gland - Iron**

Reliable bolted gland iron valve for applications in high-stress environments, such as gas, HVACI, wastewater, oil, steam and more.



Nordstrom

- Reduced downtime as a result of sealant channels that provide lubrication and protect the seating surface against corrosion, erosion or accumulation of solids
- Greater process control provided by leak-free, easy turning performance of the gland, which flexes
- High-pressure performance made possible by the heavy-wall body, which can withstand higher-than-line sealant pressure and expected line stresses
- Reliable operation enabled by the Sealdport sealant grooving system, designed to give complete distribution of pressurized sealant to seating surfaces

### **SPECIFICATIONS**

Sizes: NPS 6 to 36; DN 150 to 900

Press: 120 to 500 CWP Temp: -29°C to 177°C (-20°F to 350°F)

Refer to literature NVENBR1003 at /library.

Nordstrom

#### LUBRICATED

### **Bolted Gland - Steel**

Reliable bolted gland steel valve for applications in high-stress environments, such as gas, HVACI, wastewater, oil, steam and more.

- Reduced downtime provided by fixed-adjustment gland, which allows for guick field adjustments if necessary
- Personnel safety and ease of maintenance resulting from double ball checks, which maintain pressure in the enclosed grooving system and prevent back pressure on the sealant chamber
- Greater process control provided by leak-free, flexible metal sealing diaphragm
- · Reliable operation enabled by the Sealdport sealant grooving system, designed to give complete distribution of pressurized sealant to seating surfaces

#### **SPECIFICATIONS**

Sizes: NPS 6 to 12; DN 150 to 300

Press: Class 150

Temp: -29°C to 177°C (-20°F to 350°F)

Refer to literature NVENBR1004 at /

library.

Nordstrom

#### LUBRICATED

## Dynamic Balance – Iron

Dependable and durable iron plug valve that eliminates the problems often associated with conventional plug valves.

- Increased uptime due to pressure-balanced plug, which ensures predictable torque, even under high differential, vibration and thermal cycling
- Greater process control enabled by the stainless steel spring, which preloads to prevent vibration and thermal cycling
- Reduced maintenance derived from the equal pressure above and below the plug and port created by the balanced holes on both ends
- · Reliable operation enabled by the Sealdport sealant grooving system, designed to give complete distribution of pressurized sealant to seating surfaces

#### **SPECIFICATIONS**

Sizes: NPS 4 to 20; DN 100 to 500

Press: 150 to 200 CWP

Temp: -29°C to 177°C (-20°F to 350°F)

Refer to literature NVENBR1003 at /

library.

### LUBRICATED

## **Dynamic Balance – Steel**

Dependable and durable steel plug valve that eliminates the problems often associated with conventional plug valves.



Nordstrom

- Increased uptime due to pressure-balanced plug, which ensures predictable torque, even under high differential, vibration and thermal cycling
- Reliable performance in hostile environments provided by the anti-friction coating weather seal that provides superior corrosion resistance
- Reduced downtime with pressure-energized stem seals
- Broadest range of sizes, pressure classes and materials
- · Reliable operation enabled by the Sealdport sealant grooving system, designed to give complete distribution of pressurized sealant to seating surfaces

#### **SPECIFICATIONS**

Sizes: NPS 1 to 30; DN 25 to 750 Press: Class 150 to 2500 Temp: -46°C to 816°C (-50°F to 1500°F)

Refer to literature NVENBR1004 at /library.

### PI UG

#### LUBRICATED

## **Super Nordstrom Two-Bolt Cover – Iron**

Economical two-bolt cover iron valve designed to withstand the harsh gas industry environment and provide corrosion protection.



Nordstrom

- Cost-effective design that eliminates external leakage without the use of costly accessories to protect exposed threaded stems
- Ease of operations and maintenance through the use of valves that can be operated with standard 2-inch square wrench and adapter
- Increased uptime enabled by the thermally bonded, low-friction plug coating that creates low operating torque
- Greater process control through the sealant jacking that ensures positive operation and drop-tight closure

#### **SPECIFICATIONS**

Sizes: NPS ½ to 5; DN 15 to 125

Press: 200 CWP

Temp: -29°C to 93°C (-20°F to 200°F)

Refer to literature NVENBR1003 at /

library.

#### LUBRICATED

## **Super Nordstrom Two-Bolt Cover – Steel**

Highly reliable, two-bolt cover steel valve providing all the well-known Nordstrom features for the gas industry in a design that can be welded in-line.



Nordstrom

- Ease of installation provided by weld ends that permit installation directly into welded gas-distribution lines
- Improved resistance to fracture from ground movement provided by the increased strength and ductility compared to flanged iron valves
- Highly reliable operation provided by the coated, tapered iron plug, which has
  exceptionally low coefficient of friction and separates the metal plug and body
- Longer service life due to the corrosion protection provided by the weather seal and internal stops, which eliminate the trash pocket between the cover and stem

#### **SPECIFICATIONS**

Sizes: NPS ¾ to 4; DN 20 to 100 Press: 13.7 bar (200 psi)

Temp: -29°C to 93°C (-20°F to 200°F)

Refer to literature NVENBR1004 at /

library.

### LUBRICATED

### **DIPV** – **Double-Isolation**

Reliable, double-isolation plug valve with two independent obturators in a single body; ideal for double block and bleed applications.



Serck Audco

- Improved plant and personnel safety assured by double-isolation design that allows the operator to verify valve isolation before carrying out maintenance
- A cost-, space- and weight-saving alternative to a double block and bleed system using two valves in series
- Installation ease from compact design with the same face-to-face dimension as a single valve, often replacing it without the need for pipe work modifications
- Greater process control via pressure-balanced design that provides true bubble-tight, double- isolation capability within a single valve body

### **SPECIFICATIONS**

Sizes: DN 15 to 600; NPS  $1\!\!/2$  to 24 Press: PN 20 to 420; Class 150 to 2500;

API 2000 to 10 000

Temp: -46°C to 375°C (-51°F to 700°F)

Refer to literature SRENTB0001 at /

library.

#### LUBRICATED

### **Double-Isolation – Steel**

High-performance, double-isolation steel plug valve designed for critical shutoff applications where absolute shutoff is required for safety, environmental or process reasons.



Nordstrom

- Broad application versatility due to robust design, making valve well-suited for isolation in compressor, pump, meter, water or gas injection system applications
- Improved plant and personnel safety assured by double-isolation design
- Installation ease from compact design with the same face-to-face dimension as a single valve
- Greater process control via proven Dynamic Balance pressure-balanced and sealing technology to prevent unequal pressure above/below the plug
- Low lifecycle costs compared to two single valves

#### **SPECIFICATIONS**

Sizes: DN 50 to 300: NPS 2 to 12 Press: Class 150 to 2500

Temp: -46°C to 232°C (-50°F to 450°F)

Refer to literature NVENBR1016 at /

library.

### LUBRICATED

## Screwed Gland Type – Iron

Rugged, dependable, quarter-turn plug valve designed to require no adjustments in the field once the plug has been carefully adjusted by valve assembler.



Nordstrom

- Increased uptime via controlled plug motion design provided by the flexing of
- Greater process control enabled by tapered plug that is lapped individually with its matching body, providing perfect seating contact
- Longer service life assured by positive rotary action and sealant channels that protect the seating surfaces
- · Positive operation and drop-tight closure ensured by sealant jacking and thermally bonded, low-friction plug coating for low operating torque

#### **SPECIFICATIONS**

Sizes: DN 15 to 100: NPS 1/2 to 4

Press: 200 to 800 CWP

Temp: -29°C to 178°C (-20°F to 353°F)

Refer to literature NVENBR1003 at /

library.

### LUBRICATED

### **Taper Plug**

Reliable, standard type taper plug valve designed for general isolation purposes in a variety of liquid, gaseous and slurry services. Available in cast iron and steel to suit application.



Serck Audco

- · Greater process control via tapered plug design that offers leak tightness while maintaining smooth valve operation
- Longer service life through tapered seat surfaces of the plug and body that prevent exposure to line fluid when valve is in the open position
- Increased reliability due to the straight flow path design that minimizes pressure loss by allowing very little resistance to flow

#### **SPECIFICATIONS**

Sizes: DN 15 to 300; NPS 1/2 to 12 Press: to PN 50; to Class 300

Temp: -20°C to 250°C (-5°F to 480°F)

Refer to literature SRENTB0002 and

SRENTB0003 at / library.

### **PLUG**

#### LUBRICATED

### Super-H

Rugged, pressure-balanced plug valve designed for demanding oil and gas isolation applications where bubble-tight shutoff and reliable operation are critically important.



Serck Audco

- High reliability and certainty of zero-leakage sealing down the line achieved by large, metal-to-metal seat mating areas and precise seat mating procedures
- Increased uptime from pressure-balanced plug design that utilizes pressure to balance the forces acting on the plug and prevent taper locking
- Lower maintenance costs via in-line maintainable design that allows sealant to be injected with the valve in any position and under pressure
- Longer service life assured by seats that are protected against line media while the valve is open

#### **SPECIFICATIONS**

Sizes: DN 15 to 1050; NPS 1/2 to 42 Press: PN 20 to 420; Class 150 to 2500; API 2000 to 10 000

Temp: -46°C to 375°C (-51°F to 700°F)

Refer to literature SRENTB0004 at / library.

#### LUBRICATED

### **TIPV** – Twin Isolation



Serck Audco

Reliable, double-isolation plug valve with two independent obturators in a single body; ideal for double block and bleed applications.

- Improved plant and personnel safety assured by double-isolation design that allows the operator to verify valve isolation before carrying out maintenance
- Cost-, space- and weight-saving alternative to double block and bleed system using two valves in series; same face-to-face as a single valve in Class 600 and above
- Lower maintenance costs via in-line maintainable design that allows sealant to be injected with the valve in any position and under pressure
- Greater process control via pressure-balanced design that provides true bubble-tight, double-isolation capability within a single valve body

#### **SPECIFICATIONS**

Sizes: DN 15 to 600; NPS ½ to 24 Press: PN 20 to 420; Class 150 to 2500;

API 2000 to 10 000 Temp: -46°C to 375°C (-51°F to 700°F)

Refer to literature SRENTB0005 at / library.

### **Reduced Cost of Ownership**

We get it. Reducing equipment total cost of ownership is critical to improving your bottom line. Flowserve has helped more than 200 strategic alliance partners reduce their equipment ownership costs through programs that address asset management and optimization, engineering and technical services, education and training, and aftermarket parts and services. In fact, one customer with seven refineries is projected to save in excess of \$20 million over five years.





### Durco

### LINED

### T4E

Durco T4E valves provide maximum corrosion resistance while eliminating product contamination at a reasonable cost. Available with pneumatic or electric actuators for on-off or modulating control applications.

- Cost-effective alternative to high-alloy body materials
- Reliable performance in extreme service conditions such as severe cycling, vacuum applications, and elevated temperatures ensured by T-slots and anchor holes that provide strong attachment of lining to body and plug
- Efficient, high-flow capacity due to large ports, which reduce friction losses and pressure drop
- Easy maintenance with in-line adjustment; no disassembly is required to restore seating

#### **SPECIFICATIONS**

Sizes: DN 15 to 300; NPS ½ to 12 Press: PN 16; Class 150 to 300 Temp: -29°C to 204°C (-20°F to 400°F) Refer to literature DVENBR0066 at /

library.



# **ACTUATION & INSTRUMENTATION**

While pumps, seals and valves seem to get most of the attention, it's often the actuators and positioning solutions that are running the show. Fail-safe isolation. On-off modulation. Precision process control. These are the must-haves of fluid motion and control, no matter how difficult or remote the application.

Our actuator and positioning products are equal parts durability and sophistication, an ideal balance that delivers reliable valve control in tough, hazardous environments. From small-footprint, compact electric actuators to high-torque, high-speed, fluid-powered products, every solution is built to withstand its environment and deliver industry-leading service life. Embedded technologies make them easy to use and set up. More importantly, operators can readily identify and expedite solutions to process and equipment issues through advanced prognostics, diagnostics and communications protocols.

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Fluid Power Actuation	224
Positioners2	236
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