



Excellence Every Time Every Where

## **PLUG VALVE**



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## 1. Company Overview

Anante Controls India Pvt. Ltd. was founded in 2024 with a singular vision: to become a customer-first, problem-solving force in the valve industry. The company is the brainchild of Mr. Anant Randhave, a seasoned expert with over two decades of hands-on experience in quality assurance and control across multiple valve manufacturing companies.

Throughout his 20+ year career, Mr. Randhave built a reputation as a reliable problem-solver—someone who could not only identify root causes in the most complex flow control systems but also drive long-term solutions that enhanced performance, safety, and reliability. He has worked with a wide range of valves—gate, globe, check, ball, butterfly, and control valves—serving industries such as oil & gas, petrochemicals, water treatment, power, and general manufacturing.

His deep involvement in New Product Development (NPD) projects sharpened his ability to tackle tough design and functionality challenges, often bridging the gap between customer expectations and shop-floor realities. Customers and internal stakeholders alike trusted his insights, not just because of his technical acumen, but because of his genuine desire to help them succeed.

With a burning passion to go beyond the boundaries of traditional QA roles, Mr. Randhave envisioned a company that would not just manufacture valves—but solve problems. That vision became reality with the establishment of Anante Controls India Pvt. Ltd. The company was built on a foundation of strong technical knowledge, relentless customer focus, and a commitment to quality without compromise.

## 2. Introduction & USPs

Anante Controls Plug Valves are designed for reliable shutoff performance in demanding industrial applications. These quarter-turn valves employ a tapered plug that rotates within the body to control flow, offering a compact design, low maintenance, and exceptional sealing capability. Available in both lubricated and non-lubricated designs, Anante Plug Valves are engineered to meet the stringent requirements of industries such as petrochemical, power, chemical, food & pharma, and oil & gas.

Each valve is precision-manufactured to comply with international standards like API 599, API 6D, ASME B16.34, and BS EN 12266, ensuring consistent performance, safety, and interchangeability.

With design variants available in forged and cast constructions, the valves cover a wide pressure and size range from ½” to 14” and Class 150 to 2500, making them ideal for both low-pressure and high-pressure critical applications.

**Comprehensive Range:** Available in both forged and cast designs covering a wide pressure spectrum (150–2500 Class).

**Versatile Applications:** Suitable for on-off and diverting service in corrosive and high-pressure environments.

**Tight Shutoff Performance:** Advanced sealing technology with PTFE or metal seats ensures bubble-tight performance with minimal torque.

**Low Maintenance Design:** Simple configuration with minimal parts ensures long service life and easy in-line maintenance.

**Full Compliance:** Designed, manufactured, and tested as per API 599 / API 6D / ASME B16.34 / BS EN 12266.

**Material Flexibility:** Offered in materials such as A105, F11, F22, WCB, WC6, WC9, and stainless steel variants for wide process compatibility.

**Operational Reliability:** Available with manual, gear, pneumatic, hydraulic, or electric actuation options.

**Enhanced Sealing Integrity:** Optional lubricated sealing for heavy-duty service and non-lubricated PTFE sleeve sealing for clean or corrosive media.

**Certified Assurance:** Valves tested and certified to PED, IBR, ATEX, SIL, TÜV, and NACE MR0175 / MR0103 standards.

**Custom Solutions:** Jacketed, cryogenic, and high-temperature versions available on request to suit specialized applications.

### 3. Product Offering

Anante Controls offers a comprehensive range of Plug Valves engineered for reliability, ease of operation, and long service life in critical industrial applications. Available in forged and cast constructions, these valves are designed to handle a wide range of pressures, temperatures, and service conditions with consistent sealing performance.

Each variant is available with multiple end connections and actuation options to suit diverse process requirements. This catalog details our Standard Product Range. For requirements involving larger sizes, higher pressure classes, or customized specifications, please contact the manufacturer directly.

Forged Plug Valve				
Size	Pressure Class			
1/2"	800	900	1500	2500
3/4"	800	900	1500	2500
1"	800	900	1500	2500
1.5"	800	900	1500	2500
2"	800	900	1500	2500

Cast Plug Valve						
Size	Pressure Class					
2"	150	300	600	900	1500	2500
3"	150	300	600	900	1500	2500
4"	150	300	600	900	1500	2500
5"	150	300	600	900	1500	2500
6"	150	300	600	900	1500	2500
8"	150	300	600	900	1500	2500
10"	150	300	600	900	1500	
12"	150	300	600	900		



## 4. Material of Construction

Anante Controls Plug Valves are engineered using high-quality materials that ensure strength, corrosion resistance, and long-term durability under demanding process conditions. Both forged and cast body designs are available in a wide range of metallurgies to meet various service requirements, from general industrial to high-temperature and corrosive media.

All materials conform to ASTM, ASME, and API standards, with traceability ensured through a certified quality management system.

Non Lubricated Plug Valve			
Body MOC	Seat Material	Plug MOC	Typical Application
ASTM A105	PTFE	ASTM A182 F6	General industrial service, water, air, neutral gas lines
ASTM A105	RPTFE	ASTM A182 F316	Corrosive chemicals, solvents, and low-temperature service
ASTM A216 WCB	PTFE	ASTM A351 CF8	Hydrocarbon, oil, and utility applications
ASTM A216 WCB	RPTFE	ASTM A351 CF8M	Corrosive media, process gas, and organic chemical service
ASTM A351 CF8	PTFE	ASTM A351 CF8	Food, pharmaceutical, and mild corrosive fluids
ASTM A351 CF8M	PTFE / PEEK	ASTM A351 CF8M	Corrosive and high-purity process systems, seawater
ASTM A182 F11 / F22	PTFE	ASTM A182 F6	High-temperature and low-alloy steam service
Duplex / Super Duplex	PTFE / PEEK	Duplex Stainless Steel	Brine, seawater, and chloride-rich environments

Lubricated Plug Valve			
Body MOC	Seat Material	Plug MOC	Typical Application
ASTM A105	Metal (Grease-Sealed)	ASTM A182 F6	Hydrocarbon and fuel transfer systems
ASTM A216 WCB	Metal (Stellite Overlay)	ASTM A182 F6A	Crude oil, steam, and general refinery applications
ASTM A217 WC6 / WC9	Metal (Stellite Overlay)	ASTM A182 F22	High-temperature, high-pressure steam, and power plants
ASTM A351 CF8	Metal (Stellite Overlay)	ASTM A351 CF8	Corrosive chemical and process fluid service
ASTM A351 CF8M	Metal (Monel / Inconel Overlay)	ASTM A351 CF8M	Acidic, saline, and sour gas service
ASTM A890 Gr.4A / 6A	Metal	Duplex / Super Duplex SS	Offshore, desalination, and seawater handling
Monel / Inconel Alloys	Metal	Monel / Inconel	Highly corrosive and acidic chemical process lines

- All materials comply with ASTM / ASME / API 599 & API 6D standards.
- Seat combinations (PTFE, RPTFE, PEEK, or Stellite metal) are selected based on temperature, media, and operating pressure.
- Valves for sour gas and hydrocarbon service are available in NACE MR0175 / MR0103 compliant materials.
- Optional trims like Alloy 625 / 825, Monel, and Hastelloy available upon request.

## 5. Actuator Options

Anante Controls Plug Valves are designed for versatile operation and can be equipped with a wide range of actuation systems to meet process automation, safety, and operational ease requirements. The valves are compatible with manual, gear, and automated actuator systems, ensuring reliable performance under varying service conditions.

All actuators are selected based on valve torque, line pressure, service media, and duty cycle, and are mounted in accordance with ISO 5211 standards.

Operation Type	Actuator Type	Size Range	Typical Application
Manual Lever	Direct Handle	Up to 2"	Low-torque, on-off operation
Gear Operated	Worm Gear	2" and above	General and high-torque applications
Pneumatic	Rack & Pinion / Scotch Yoke	All sizes	Fast, remote, or automated control
Electric	Motorized Actuator	All sizes	Remote and modulating control
Hydraulic	Piston Type	Large sizes / High DP	High-pressure or subsea systems

## 6. Design & Construction Features

Anante Controls Plug Valves are engineered to deliver leak-tight shutoff, low operating torque, and long-term durability under varying process conditions. Each valve is designed and manufactured in strict compliance with international standards such as API 599, API 6D, ASME B16.34, and BS EN 12266, ensuring consistent quality and performance.

Both Lubricated and Non-Lubricated designs are available to meet specific process and maintenance needs.

### General Design Features

- Quarter-Turn Operation: Provides quick and reliable shutoff with minimal movement.
- Top Entry Construction: Allows easy access to the plug and internals for inspection and maintenance without removing the valve from the pipeline.
- Pressure Balanced Plug Design: Equalizes pressure around the plug, reducing torque and preventing plug lifting during operation.
- Full Bore Flow Path: Ensures minimal pressure drop and maintains high flow efficiency.

- Bidirectional Sealing: Capable of sealing in both flow directions, ensuring operational flexibility.
- Antistatic Device: Standard across all designs to prevent static charge accumulation.
- Fire-Safe Design (Optional): Available as per API 607 and ISO 10497 standards.
- ISO 5211 Mounting Interface: For direct actuator mounting without additional brackets.

### Non-Lubricated Plug Valve (Soft Seated Type)

- Sealing Mechanism: Plug is surrounded by a PTFE sleeve which provides a self-lubricating, bubble-tight seal.
- Low Torque Operation: Friction is minimized by the low coefficient of PTFE, making it suitable for frequent operation.
- Corrosion Resistance: Ideal for chemical and clean process applications.
- Maintenance-Free Operation: No external lubrication required throughout the valve life.
- Anti-Blowout Stem Design: Ensures safety during pressurized operation.

### 6.3 Lubricated Plug Valve (Metal Seated Type)

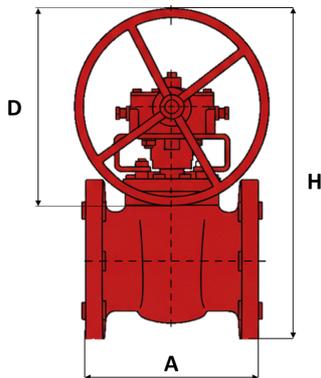
- Sealing Mechanism: Metal-to-metal contact with grease injection system through stem channels.
- Pressure Balanced Plug: Prevents plug locking due to differential pressure, ensuring smooth operation.
- Grease Injection Points: Allow in-line sealing maintenance and re-greasing during service.
- High Durability: Metallic sealing surfaces with optional Stellite or Monel overlay ensure long wear life.

Service Flexibility: Suitable for heavy-duty, high-pressure, or hydrocarbon applications.

## 7. Product Dimensions

Anante Controls Plug Valves are manufactured to precise dimensional standards ensuring compatibility and interchangeability with international piping systems. All face-to-face and end-to-end dimensions conform to ASME B16.10 and API 6D, while flanged end dimensions meet ASME B16.5 requirements. Butt-weld end valves comply with ASME B16.25.

Valves are available in both Lubricated and Non-Lubricated designs across pressure classes 150, 300, 600, and 900.



Forged / Cast Non Lubricated Plug Valve				
Size	A (RF)	A (BW)	H (Open)	D
½"	108	140	180	400
¾"	117	149	180	400
1"	127	172	185	500
1¼"	140	241	200	500
1½"	165	267	210	600
2"	178	305	215	600
3"	203	356	270	820
4"	229	457	300	820
6"	267	559	365	1000
8"	292	635	400	1000
10"	330	686	450	1200
12"	356	762	510	1200

## Forged / Cast Lubricated Plug Valve

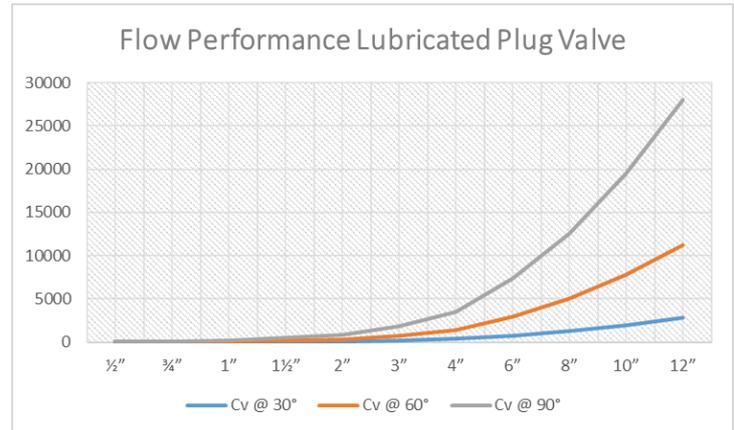
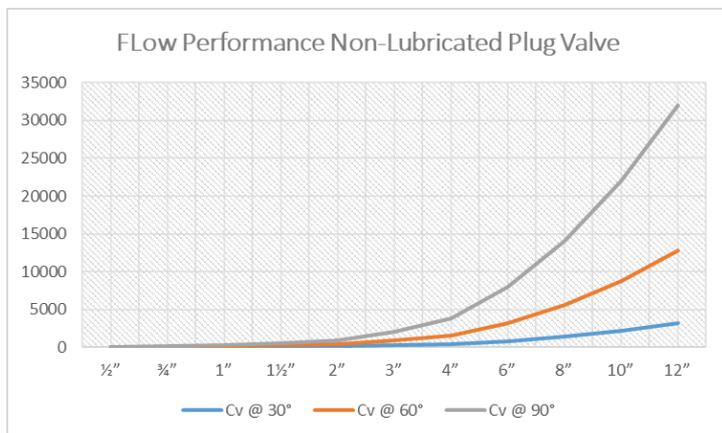
Size	A (RF)	A (BW)	H (Open)	D
½"	108	140	110	175
¾"	117	149	115	175
1"	127	172	115	175
1½"	165	267	140	280
2"	178	305	150	305
3"	203	356	180	405
4"	229	457	380	405
6"	267	559	520	600
8"	292	635	580	600
10"	330	686	620	680
12"	356	762	680	680

## 8. Flow Performance

Anante Controls Plug Valves offer excellent flow characteristics owing to their streamlined port design and full-bore flow path. The Cv (Flow Coefficient) represents the valve's capacity to pass fluid – defined as the flow rate (in US gallons per minute) of water at 60°F that will cause a 1 psi pressure drop across the valve in the fully open position. The plug valve, with its conical closure and 100% port area, provides smooth flow, low turbulence, and minimal pressure loss, making it suitable for both on-off and limited throttling applications.

Non Lubricated Plug Valve			
Size	Cv @ 30°	Cv @ 60°	Cv @ 90°
½"	8	24	48
¾"	15	45	90
1"	25	80	160
1½"	55	175	350
2"	95	290	580
3"	210	630	1250
4"	380	1130	2260
6"	800	2400	4800
8"	1400	4200	8400
10"	2200	6600	13200
12"	3200	9600	19200

Lubricated Plug Valve			
Size	Cv @ 30°	Cv @ 60°	Cv @ 90°
½"	6	20	40
¾"	12	38	75
1"	20	65	130
1½"	45	140	280
2"	80	240	480
3"	180	540	1080
4"	350	1050	2100
6"	730	2200	4400
8"	1250	3750	7500
10"	1950	5850	11700
12"	2800	8400	16800



## 9. Pressure vs Temperature

Anante Controls Plug Valves are designed and tested to meet or exceed the requirements of ASME B16.34 and API 6D, ensuring safe operation under

a wide range of pressure and temperature conditions.

The following tables illustrate the maximum allowable working pressure (MAWP) at various temperatures for different material categories. These values are for reference and should be verified based on process design conditions.

Carbon Steel (ASTM A105 / A216 WCB)				
Temperature (°C)	Class 150 (bar)	Class 300 (bar)	Class 600 (bar)	Class 900 (bar)
-29 to 38	19.6	51	102	153
50	19.2	49.8	99.5	149.3
100	17.5	45.5	91	136.5
150	16	42	84	126
200	14	38	76	114
250	12.1	33.5	67	100.5
300	10.2	29.5	59	88.5
350	8.4	25.5	51	76.5
400	6.6	21.5	43	64.5
425	6	19.5	39	58.5

## 10. Torque

The operating torque of a Plug Valve depends on the valve size, pressure class, seat design, lubrication type, and service medium.

Stainless Steel (ASTM A351 CF8 / CF8M)				
Temperature (°C)	Class 150 (bar)	Class 300 (bar)	Class 600 (bar)	Class 900 (bar)
-29 to 38	19.6	51	102	153
50	19.3	50	100	150
100	17.7	46	92	138
150	16.2	42	84	126
200	15	39	78	117
250	13.5	36	72	108
300	12	33	66	99
350	10.8	30	60	90
400	9.5	27	54	81
425	9	25.5	51	76.5

Anante Controls Plug Valves are designed to ensure low operating torque through precision machining, pressure balancing, and optimized seat design. All torque values listed are indicative for water service at ambient temperature (20°C) and maximum rated differential pressure. For valves operating in dry gas, viscous fluids, or high-temperature conditions, torque values may vary and should be confirmed with Anante Controls.

Non-Lubricated Plug Valve			
Size	Operating Torque (Nm)	Breakaway Torque (Nm)	Actuator Output (Nm)
½"	12	18	30
¾"	18	25	40
1"	25	35	60
1½"	38	55	90
2"	60	85	130
3"	120	165	250
4"	200	280	400
6"	420	590	850
8"	750	1050	1500
10"	1200	1650	2300
12"	1800	2500	3500

Lubricated Plug Valve			
Size	Operating Torque (Nm)	Breakaway Torque (Nm)	Actuator Output (Nm)
½"	20	30	50
¾"	28	40	70
1"	40	55	90
1½"	65	90	140
2"	100	140	200
3"	200	270	400
4"	320	440	650
6"	700	950	1400
8"	1200	1650	2500
10"	1900	2600	3800
12"	2600	3600	5200

## 11. Standards & Certifications

Anante Controls Plug Valves are designed, manufactured, and tested in accordance with the latest international standards to ensure safety, reliability, and interchangeability in diverse industrial applications. Our valves undergo stringent quality checks throughout design, machining, assembly, and testing stages to comply with global performance norms.

**Design & Manufacturing Standards**

Category	Standard / Specification	Description
Design & Construction	API 599 / API 6D	Specification for Plug Valves for Refinery and Pipeline Applications
General Valve Standard	ASME B16.34	Valves – Flanged, Threaded, and Welding Ends
Face-to-Face Dimensions	ASME B16.10 / API 6D	Standardized End-to-End and Face-to-Face Dimensions
End Flanges	ASME B16.5	Pipe Flanges and Flanged Fittings
Butt Weld Ends	ASME B16.25	Weld End Preparation Standards
Socket Weld Ends	ASME B16.11	Forged Fittings, Socket-Welding, and Threaded Ends
Pressure Testing	API 598 / BS EN 12266	Hydrostatic & Seat Leakage Tests
Fire Safe Testing	API 607 / ISO 10497	Fire Test for Valves
Actuator Mounting Interface	ISO 5211	Dimensions for Top-Mounting Pad
NACE Compliance	NACE MR0175 / MR0103	Materials for H <sub>2</sub> S Service (Sour Gas)

## Inspection & Testing Standards

- Hydrostatic Body Test: At 1.5 times design pressure
- Seat Leak Test: At 1.1 times design pressure
- Pneumatic Seat Test: At 6 bar air pressure (when specified)
- Fire Safe Test: In accordance with API 607 / ISO 10497
- Torque & Operational Test: Conducted on all valves prior to dispatch
- CV / Flow Characterization Test: On representative samples as per API 6D

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F-56, MIDC, Ahilyanagar (Ahmednagar), Maharashtra,  
India - 414111 + 91 9011560779

[Info@anantecontrols.com](mailto:Info@anantecontrols.com)

