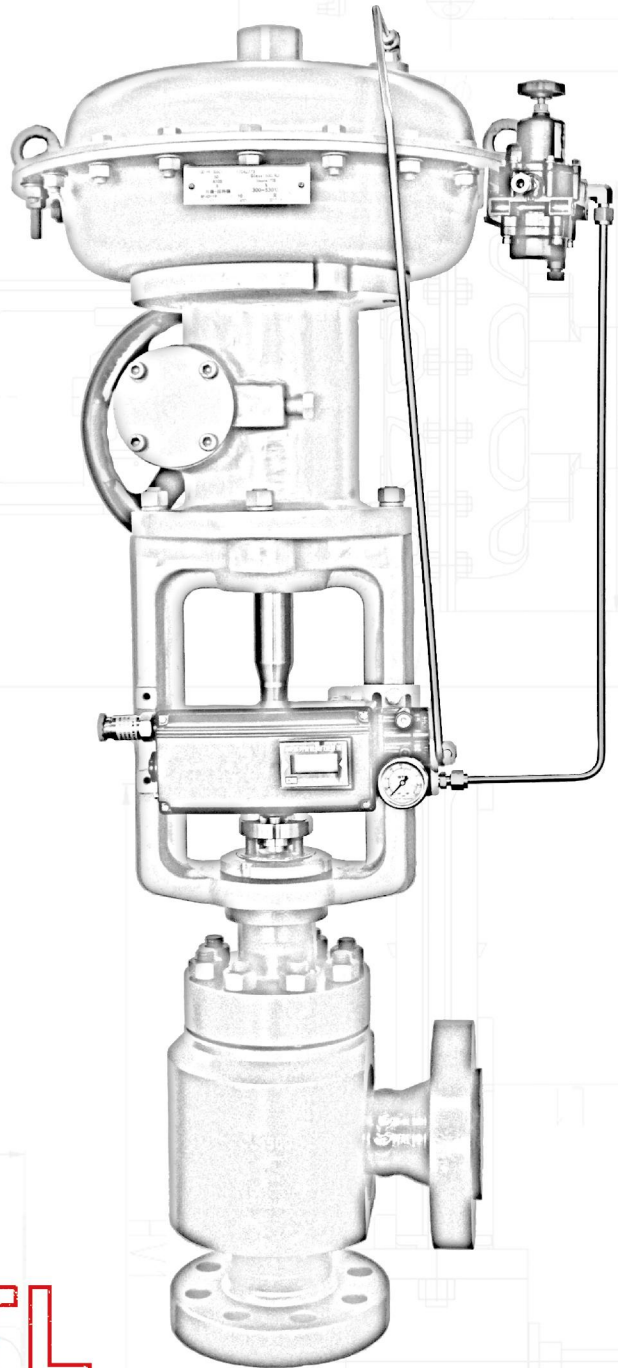
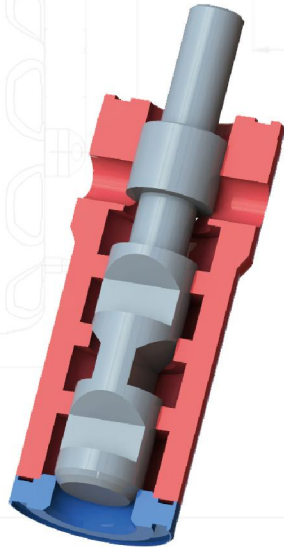


WZIFLOW CONTROL

3
YEAR
WARRANTY

1M+
VALVES
INSTALLED

ASSEMBLED
IN USA

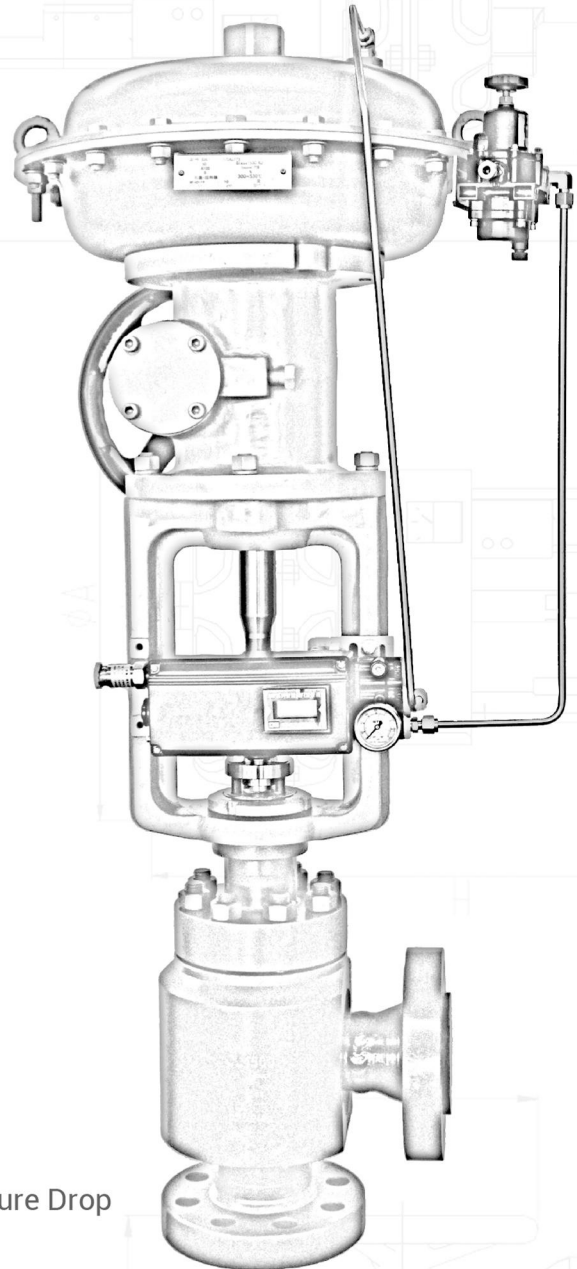


SERIES ATL

MULTISTAGE CONTROL VALVE

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SERIES ATL FEATURES

- **Multistage, Axial Flow Control Valve** for High Pressure Drop
- **Progressive Staged, High Resistance Trim**
- **Simple, Quick Change Trim**
- Variety of **Angle or Globe Style** Body Configurations
- **Smooth, Accurate Control** of Liquids and Vapor
- For Use in **Clean and Dirty Services** Resistant to Plugging and Clogging
- For Control of **Cavitation, Erosion, Vibration, and High Noise**
- **Linear and Modified Equal Percentage Trims** Available
- Notch-Style Trim Allows **Smooth Throttling Resolution** Even in Small Cv Designs
- **Tight Shutoff** to ANSI/FCI 70.2 Class IV or V

QUICK CHANGE TRIM MULTISTAGE VALVES

KEY COMPONENTS

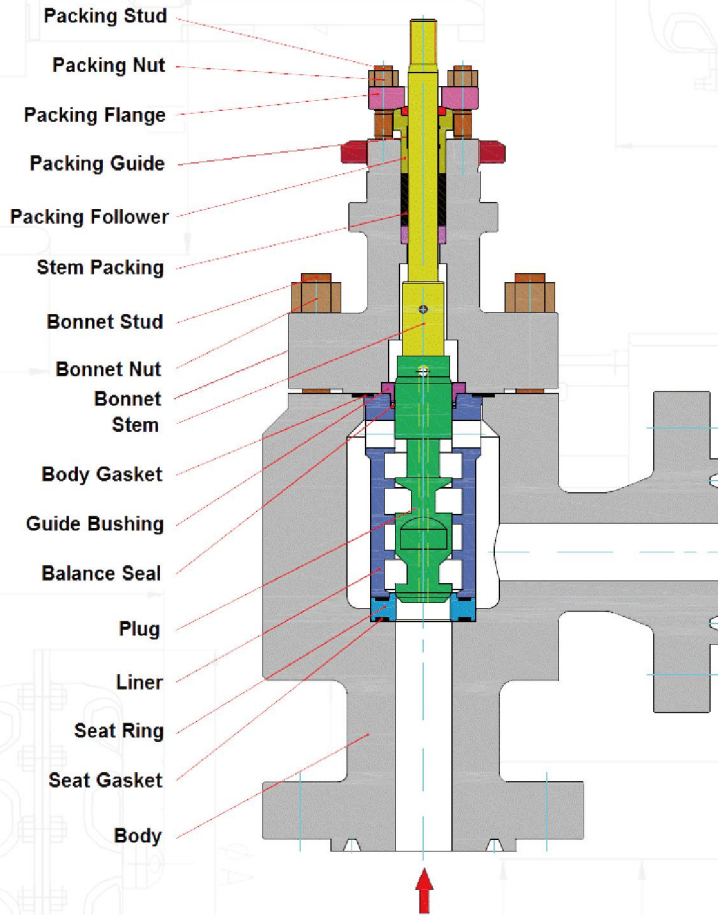


Table 1: Key Components

Type	Multistage Axial Flow Control Valve
Body Size	1" (DN25) to 4" (DN100)
Plug Characteristics	Modified Linear and Equal Percentage
Pressure Classes	ASME Class 600-2500
Body Connections	RF, RTJ, BW, SW
Face to Face Dimensions	See Catalog, Custom Design Available
Packing	Graphite/Braided Teflon and Graphite
Gasket	Stainless Steel/Grafoil®

MATERIALS OF CONSTRUCTION

Table 1.1: ATL Valve Sizes, 1" And 1-1/2"(DN25 And DN40)

Temperature -20°F to 500°F (-29°C to 260°C)			
Description	NACE, MR0175, ISO15156	NACE, MR0103	Power Plant Materials
Body	ASTM A105	ASTM A105	ASTM A105
Body Seat/Gasket	300 SS/Graphite	300 SS/Graphite	300 SS/Graphite
Seat Ring	XM19 50, Integral with Liner	XM19, Integral with Liner	17-4 H900, Integral with Liner
Liner	XM19	XM19	17-4 H900
Plug/Stem	Inconel 718	17-4 H1150M	410 SS HT
Balance Seal	Filled Teflon, Spring Energized	Filled Teflon, Spring Energized	Filled Teflon, Spring Energized
Guide Bushing	316 SS	316 SS	316 SS
Bonnet Stud	A193 - B7	A193 - B7	A193 - B7
Bonnet Nut	A194 - 2H	A194 - 2H	A194 - 2H
Stem Packing	Graphite/Teflon Rope, Carbon Spacer	Graphite/Teflon Rope, Carbon Spacer	Graphite/Teflon Rope, Carbon Spacer
Packing Follower	316 SS	316 SS	316 SS
Packing Guide	Metoplast™	Metoplast™	Metoplast™
Packing Flange	ASTM A105	ASTM A105	ASTM A105
Packing Stud	A193 - B7	A193 - B7	A193 - B7
Packing Nut	A194 - 2H	A194 - 2H	A194 - 2H

Table 1.2: ATL Valve Sizes, 2" to 4" (DN50 and DN100)

Temperature -20°F to 500°F (-29°C to 260°C)			
Description	NACE, MR0175, ISO15156	NACE, MR0103	Power Plant Materials
Body	ASTM A105	ASTM A105	ASTM A105
Body Seat/Gasket	300 SS/Grafoil®	300 SS/Grafoil®	300 SS/Grafoil®
Seat Ring	316 SS/Hardfaced	316 SS/Hardfaced	316 SS/Hardfaced
Liner	XM19	XM19	17-4 H900
Plug/Stem	Inconel 718	17-4 H1150M	410 SS HT
Balance Seal	Filled Teflon, Spring Energized	Filled Teflon, Spring Energized	Filled Teflon, Spring
Guide Bushing	316 SS	316 SS	316 SS
Stem	Inconel 718	17-4 H1150M	17-4 H1150M
Bonnet Stud	A193-B7	A193-B7	A193-B7
Bonnet Nut	A194-2H	A194-2H	A194-2H
Stem Packing	Graphite/Teflon Rope, Graphite	Graphite/Teflon Rope, Graphite	Graphite/Teflon Rope, Graphite
Packing Follower	316 SS	316 SS	316 SS
Packing Guide	Metoplast™	Metoplast™	Metoplast™
Packing Flange	ASTM A105	ASTM A105	ASTM A105
Packing Stud	A193-B7	A193-B7	A193-B7
Packing Nut	A194-2H	A194-2H	A194-2H

NOTES:

- 1) Optional materials are available, consult factory
- 2) 1" (DN25) size ATL is unbalanced trim

VALVE SIZES, RATED Cv, CRITICAL FLOW FACTORS

FACTOR-FL, VALVE STROKE, Cv vs STROKE

Table 2: Valve Sizes, Cv, And FL

Cv and Stages															
Valve Size		Trim Size		3 Stage Cv Mod %			4 Stage Cv, Mod Lin.			5 Stage Cv, Mod %			6 Stage Cv, Mod Lin.		
DN	inch	mm	inch	A	B	C	A	B	C	A	B	C	A	B	C
25	1"	18	0.71"	1.3	1.9	2.0	1.0	1.4	1.7	0.8	1.3	1.5	0.8	1.0	1.4
40	1.5"	25	1"	2.5	3.2	3.8	1.9	2.5	3.2	1.6	2.1	2.8	1.4	1.8	2.5
50	2"	38	1.5"	6.0	7.5	9.0	4.5	6.0	7.5	3.8	5.0	6.6	3.5	4.5	6.0
80	3"	58	2.3"	13.0	16.5	20.0	10.0	13.0	16.5	8.0	11.0	14.0	7.5	9.5	13.0
100	4"	73	2.87"	22.0	28.0	34.0	16.5	22.0	28.0	13.0	18.0	24.0	12.0	16.0	22.0

Valve FL															
Valve Size		Trim Size		3 Stage Cv Mod %			4 Stage Cv, Mod Lin.			5 Stage Cv, Mod %			6 Stage Cv, Mod Lin.		
DN	inch	mm	inch	A	B	C	A	B	C	A	B	C	A	B	C
25	1"	18	0.71"	0.994	0.991	0.980	0.996	0.994	0.991	0.997	0.995	0.992	0.998	0.997	0.994
40	1.5"	25	1"	0.994	0.991	0.980	0.996	0.994	0.991	0.997	0.995	0.992	0.998	0.997	0.994
50	2"	38	1.5"	0.994	0.991	0.980	0.996	0.994	0.991	0.997	0.995	0.992	0.998	0.997	0.994
80	3"	58	2.3"	0.994	0.991	0.980	0.996	0.994	0.991	0.997	0.995	0.992	0.998	0.997	0.994
100	4"	73	2.87"	0.994	0.991	0.980	0.996	0.994	0.991	0.997	0.995	0.992	0.998	0.997	0.994

Table 3: Valve Strokes

Valve Travel							
Valve Size		Trim Size		3/5 Stage Travel, Modified % Trim		4/6 Stage Travel, Modified Linear Trim	
DN	inch	mm	inch	mm	inch	mm	inch
25	1"	18	0.71"	10.0	0.39"	6.0	0.24"
40	1.5"	25	1"	10.0	0.39"	6.0	0.24"
50	2"	38	1.5"	15.0	0.59"	10.0	0.39"
80	3"	58	2.3"	20.0	0.79"	15.0	0.59"
100	4"	73	2.87"	25.0	0.98"	20.0	0.79"

NOTES:

- 1) Pipe nipples and reducers can be provided
- 2) Other flange ratings and end connections are available
- 3) Larger valve sizes are available, consult factory
- 4) Rangeability exceeds 50:1 on most valve sizes

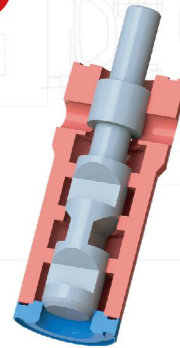


FLOW PATH AND STAGING

AXIAL FLOW NOTCH TRIM STAGES

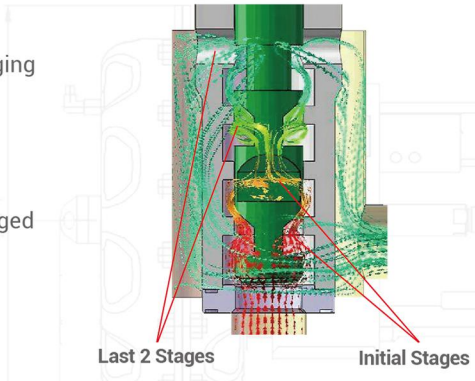
ATL TRIM FLOW PATH

- The axial flow notch style trim defines a stage for each layer of notches and discharge holes (4 stage trim shown)
- Each stage combines right angle turns with entry and exit losses
- Flow testing shows that the axial flow stage has the same resistance as 3 to 4 right angle turns
- Axial flow distributes the pressure drop along the entire length of the plug as compared to radial flow which concentrates the pressure drop at the leading edge of the plug



ATL TRIM STAGING

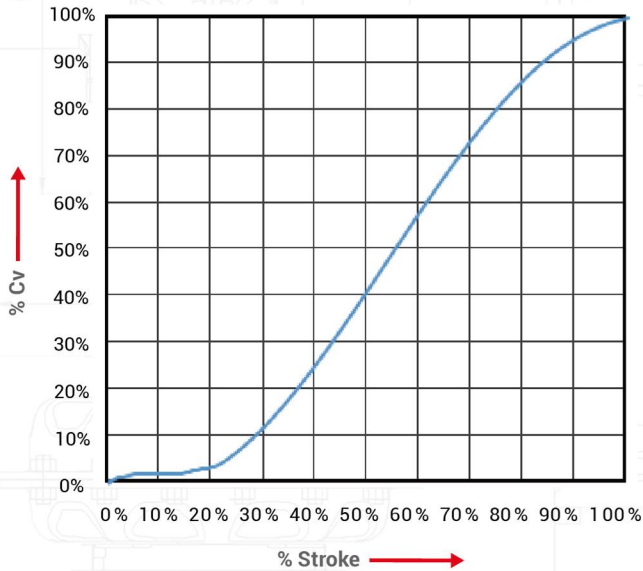
- The last stage two stages are constant in all designs
- Varying the number or the size of notches on the initial stages, additional staging can be achieved for cavitation control
 - "C" trim, (full area) is defined as 1-1-1-2 area ratios, where the last stage has 2x the area of the notches
 - "A" trim (reduced area) is defined as 1-1-2-4 area ratio trim, there would only one notch on the first 2 stages and the last 2 stages would be unchanged
 - "B" trim (reduced area) is defined as 1-1-1.5-3 area ratio trim, where the initial two stages have reduced area notches
- 3, 4, 5, and 6 stage trim use similar design philosophy



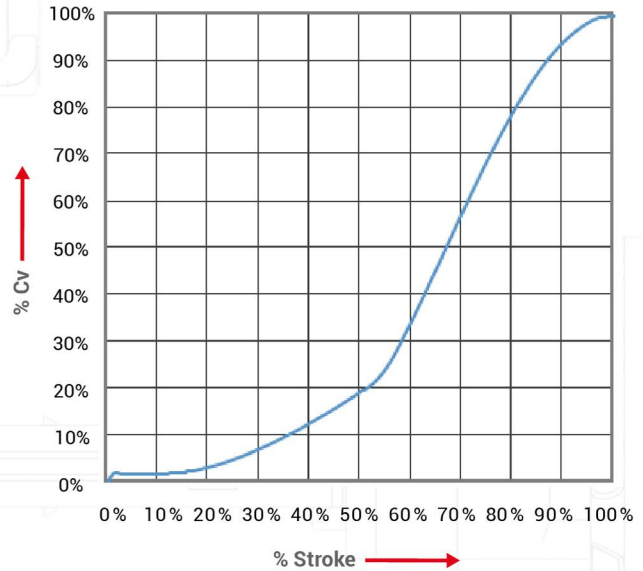
FLOW PATH AND STAGING

Cv vs STROKE

Cv vs Stroke ATL Modified Linear



Cv vs Stroke ATL Modified %



NOTES:

- 1) The Cv vs stroke characteristic may vary based on valves size
- 2) Certain industry applications are better served by a specific valve characteristic, consult factory.

DIMENSIONS & WEIGHTS

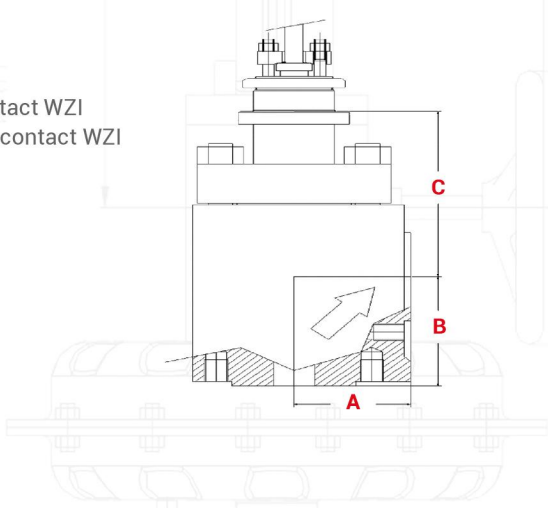
1" (DN25) TO 4" (DN100) SIZE VALVES

Table 4: Valve Dimensions And Weights

Valve Size inch DN mm	ANSI Class	End Connection	ATL 3/4 and 5/6 Stage Forged Angle				Valve Weight kg (lbs)
			Stages	A, mm (inch)	B, mm (inch)	C, mm (inch)	
1 DN25	600-2500	Flange	3/4	114 (4.5)	70 (2.75)	165 (6.5)	39 (85)
			5/6		95 (3.75)		43 (95)
	600-2500	SW	3/4	73 (2.88)	64 (2.5)		27 (60)
			5/6		99 (3.88)		32 (70)
1.5 DN40	600-2500	Flange	3/4	140 (5.5)	83 (3.25)	196 (7.7)	59 (130)
			5/6		102 (4.00)		66 (145)
	600-2500	SW	3/4	78 (3.06)	70 (2.75)		34 (75)
			5/6		105 (4.12)		41 (90)
2 DN50	600-1500	Flange	3/4	149 (5.88)	99 (3.88)	231 (9.1)	91 (200)
			5/6		279 (11)	109 (240)	
	600-2500	SW	3/4	102 (4)	111 (4.38)	234 (9.2)	80 (175)
			5/6		165 (6.00)	241 (9.5)	91 (200)
	2500	Flange	3/4	162 (6.38)	105 (4.12)	236 (9.3)	114 (250)
			5/6		284 (11.2)	136 (300)	
3 DN80	600-1500	Flange	3/4	141 (5.56)	197 (7.75)	302 (11.9)	205 (450)
			5/6		279 (11.00)		250 (550)
	600-1500	BW	3/4	138 (5.42)	197 (7.75)	315 (12.4)	182 (400)
			5/6		279 (11.00)		200 (440)
	2500	Flange	3/4	159 (6.25)	210 (8.25)	318 (12.5)	284 (625)
			5/6		368 (14.5)	318 (700)	
	2500	BW	3/4	156 (6.16)	197 (7.75)	325 (12.8)	250 (550)
			5/6		396 (15.6)	273 (600)	
4 DN100	600-1500	Flange	3/4	184 (7.25)	222 (8.75)	318 (12.5)	252 (775)
			5/6		313 (12.31)	409 (16.1)	409 (900)
	600-1500	BW	3/4	166 (6.53)	248 (9.75)	320 (12.6)	330 (725)
			5/6		411 (16.2)	364 (800)	
	2500	Flange	3/4	209 (8.22)	241 (9.50)	333 (13.1)	477 (1050)
			5/6		332 (13.06)		568 (1250)
	2500	BW	3/4	181 (7.12)	241 (9.50)	343 (13.5)	398 (875)
			5/6		434 (17.1)	432 (950)	

NOTES:

- 1) Flange ends use drilled and tapped holes in the valve body
- 2) Forged globe body options are available, contact WZI
- 3) Custom end connections and centerline to face dimensions are available, contact WZI
- 4) Standard flow direction in under the plug; Flow to close options are available, contact WZI



WHO WE ARE

WZI Flow Control, Ltd., a subsidiary of WuZhong Instrument Company, Ltd., began business in 1959. As China's largest control valve manufacturer, WZI has a state of the art 2.8M ft² production, foundry and corporate office campus. With over 1000 employees, WZI is expanding globally with increased manufacturing, sales and service capabilities to better serve our rapidly growing global customer base.

As a member of the highly acclaimed China Automation Group (www.cag.com.hk), WZI has successfully supplied over 1 million valves for the global market. With our 100% Testing and Serialization Program, WZI prides itself on our high quality, competitively priced products with superior delivery from our new sales and service center located in Houston, Texas. Our Southern California office designs new products and makes continuous improvements to our broad existing product offering.

LET'S WORK TOGETHER

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WE'RE QUALIFIED

As a global manufacturing company, WZI Flow Control verifies that we are operating in full compliance with this partial list of industry standards. Our compliance includes additional standards not shown here. Please contact the factory for additional details.

> ISO 9001
> ISO 14001
> OHSAS 18001

> API Spec Q1
> API 6A
> API 6D

> API 6DSS
> API 17D
> API 609 Cat B

> API 607, 7th Edition
> API 6FA, 3rd Edition
> SIL-capable

QUALITY TRUST INTEGRITY

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