



The No. 1 Lined Ball Valve In The World



NEW Lined Sampling Valves,
page 10

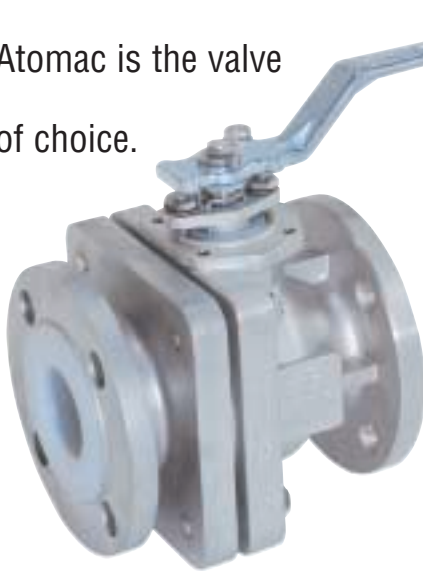
For Top Performance, Reliability And Safety



Quality
System
Certificate

AKH3 Standard Port and AKH2A Full Port Valves

Flowserve is the world's leader in the design and manufacture of corrosion resistant fluoropolymer lined valves. Atomac valves provide bubble-tight shutoff, low maintenance, no-leak stem seals and the safety assurance of a blowout-proof stem assembly. For performance, safety and reliability, Atomac is the valve of choice.



AKH lined valves are now available with CF-8M stainless steel body armor, ball and stem inserts.

Lockout standard on AKH3.

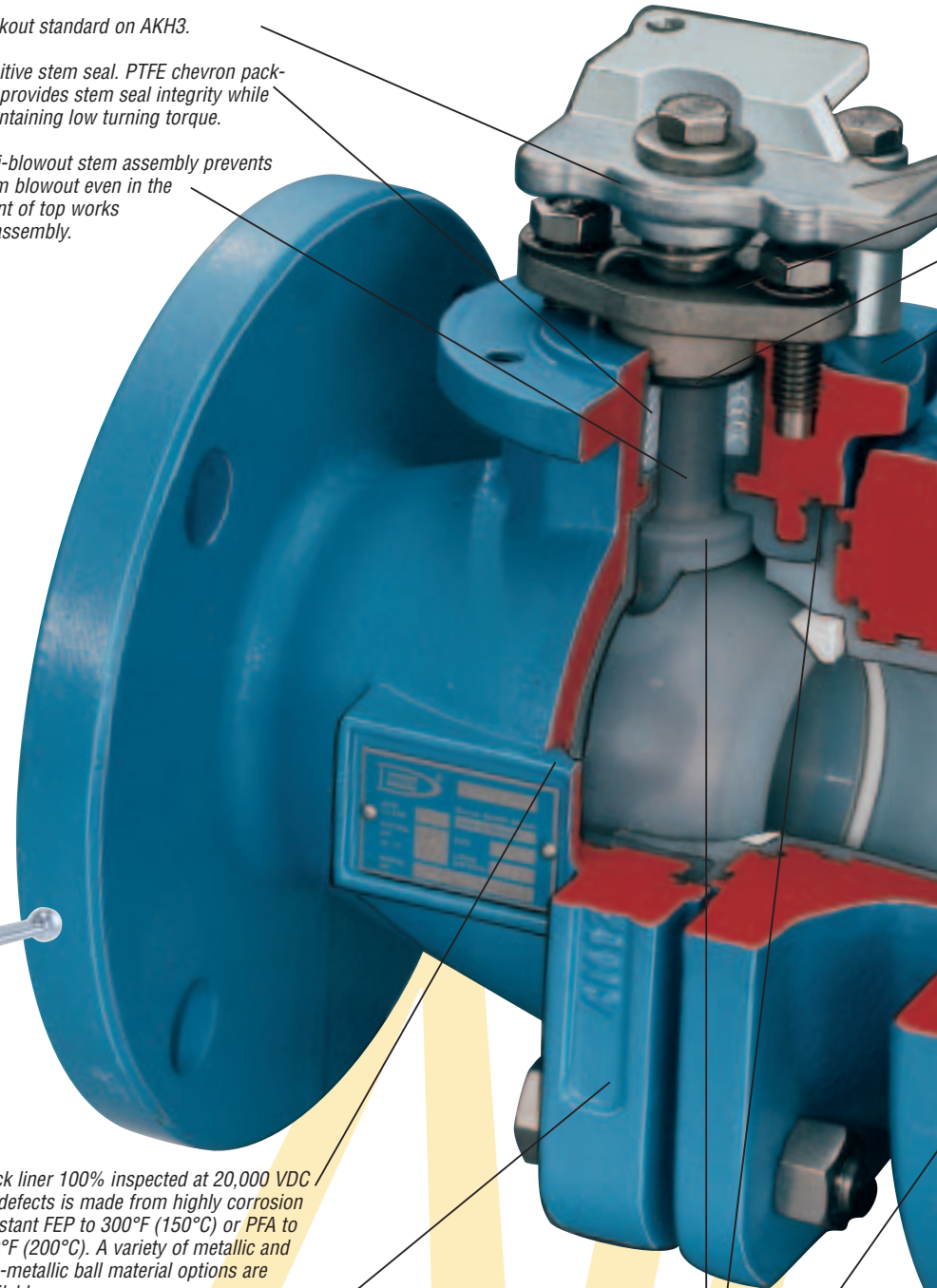
Positive stem seal. PTFE chevron packing provides stem seal integrity while maintaining low turning torque.

Anti-blowout stem assembly prevents stem blowout even in the event of top works disassembly.

Thick liner 100% inspected at 20,000 VDC for defects is made from highly corrosion resistant FEP to 300°F (150°C) or PFA to 400°F (200°C). A variety of metallic and non-metallic ball material options are available.

Ductile iron body sections (ASTM A395 60-40-18) with high strength B7 fasteners are both rugged and rigid. B8 offered as alternate.

Designed in accordance with ASME B16.5 Class 150 lb (DIN 2501/PN16) flange dimensions and ASME B16.10 face-to-face dimensions. Leak testing according to API 598 or DIN 3230 criteria.

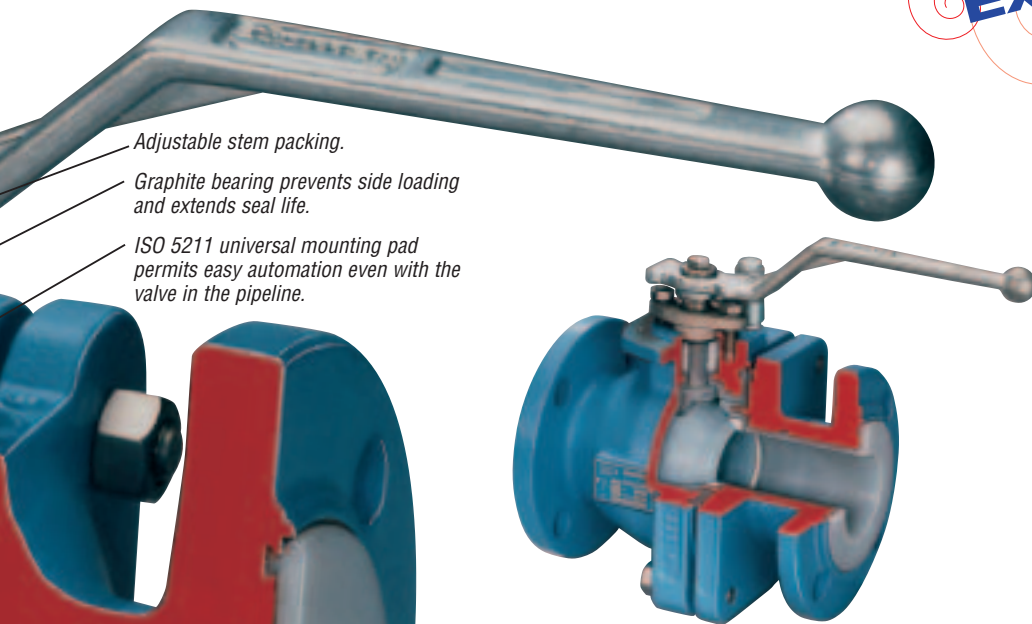


Separate ball/stem connection greatly reduces side loading, thus extending stem seal life.

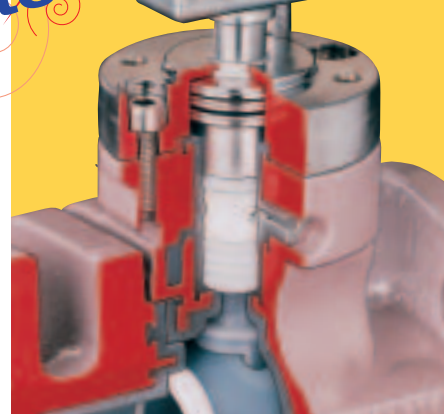
Cavity space minimizes the retention of process media.

Lining securely locked into the body by "T" slots and locking grooves; completely encapsulated ball and stem. Can handle pressures from full vacuum to 275 psi (19 bar).

Extended Packing



Adjustable stem packing.
Graphite bearing prevents side loading and extends seal life.
ISO 5211 universal mounting pad permits easy automation even with the valve in the pipeline.



Extended Packing

Fully lined stuffing box with purge connection and live-loading for additional fugitive emission protection available on AKH2, AKH2A and AKH3 (TA Luft Certified).

Chlorine Service

Specially prepared and trimmed per Durco standard chlorine cleaning procedure.

Stem Extensions

Allow for insulation of valve.

Atomac/Automax® Rotary Control Valve Packages

Precision control, corrosion resistance, positive stem sealing, and bubble tight shut-off in a low torque rotary control valve at a fraction of the cost of traditional rising stem valves.

See page 7 for technical data.



AKH2 Full Port

Minimizes pressure loss and increases flow capacity to reduce energy and pumping costs. 1/2 in (15 mm) through 12 in (300 mm). DIN dimensional only – not available to ASME dimensions.

See page 14 for technical data.

AKH2A ANSI Full Port

Same benefits as AKH2 in an ASME dimensional valve. 1 in (25 mm) through 12 in (300 mm)

See page 17 for technical data.

AKH3 Standard Port

ASME dimensional valve permits replacement of present valves with no need to alter existing piping. 1 in (25 mm) through 12 in (300 mm)

See page 18 for technical data.

Available Options

Control Valves

Characterized ball available for throttling applications.

See page 7 for technical data.

C-ball eliminates media build-up in ball cavity.



Extensive selection through 12 in (300 mm) for standard port and ball port valves.

AMP3 3-Way Lined Valves

The AMP3, 3-way ball valve is the best choice for corrosive diverter valve applications.

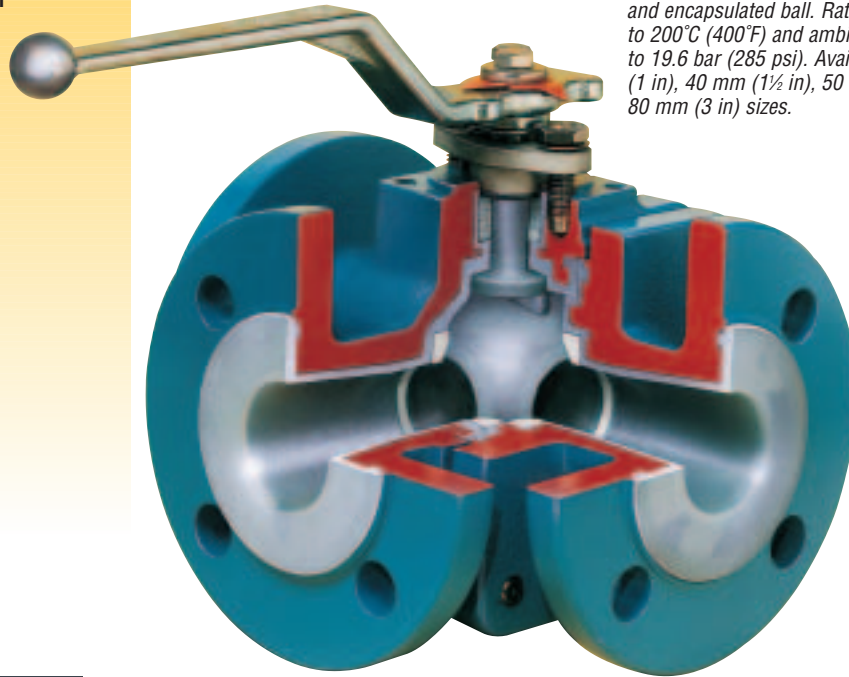
High flow capacity with minimal pressure loss through the valve, thereby reducing plant operating costs.

Floating ball seat design for bubble-tight shutoff across the pressure range.

Lower cost than alloy valves with equal or superior corrosion resistance in difficult services.

Compact design permits use where space constraints are a concern.

PFA standard material for valve lining and encapsulated ball. Rated for services to 200°C (400°F) and ambient pressures to 19.6 bar (285 psi). Available in 25 mm (1 in), 40 mm (1½ in), 50 mm (2 in) and 80 mm (3 in) sizes.

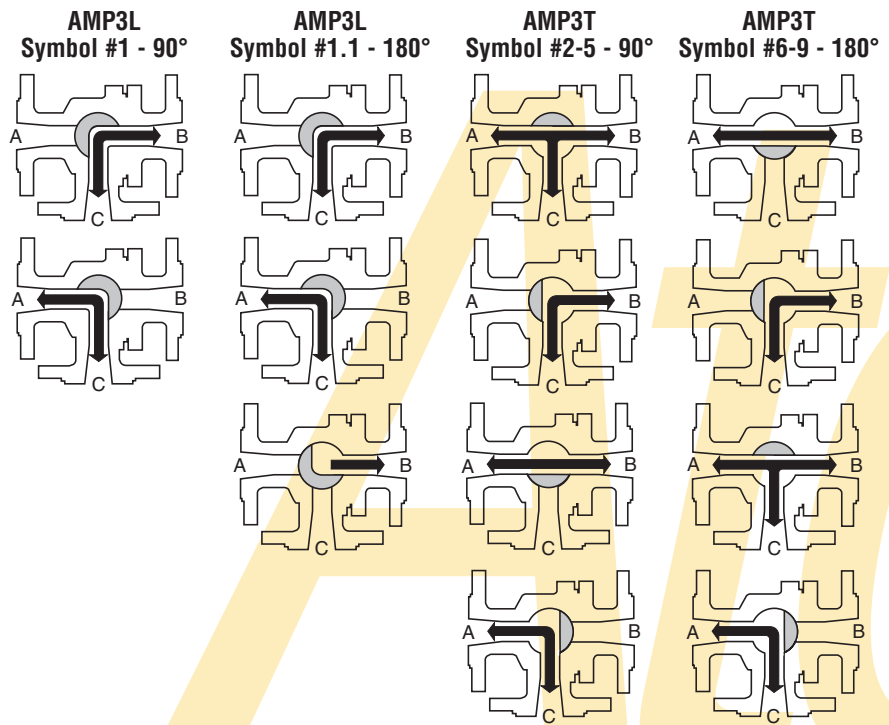


AMP3L	
Symbol #1 - 90° B/C A/C	Symbol #1.1 - 180° B/C A/C B
AMP3T	
Symbol #2 - 90° A/B/C B/C	Symbol #6 - 180° A/B B/C A/B/C
Symbol #3 - 90° A/B B/C	Symbol #7 - 180° A/C A/B/C B/C
Symbol #4 - 90° A/B/C A/C	Symbol #8 - 180° A/B/C A/C A/B
Symbol #5 - 90° A/B A/C	Symbol #9 - 180° A/C A/B B/C

Optional flow arrangements may be available upon request.

Consult factory for pressure-temperature curve.

See page 19 for technical data.



AKH5 Ceramic Lined Valves

ISO 5211 mounting pad makes actuator mounting quick and easy.

Stem sealing requires virtually no maintenance and provides low stem torque. Adjuster and packing gland feature a ball and socket fit for certain and even stem sealing reliability.

PTFE chevron or graphite packing rings in the deep stuffing box protects against external leakage to the atmosphere.

Full port minimizes pressure loss and increases flow capacity to reduce energy and pumping costs.

A wide selection of stem material options available... 316 stainless steel, Hastelloy® C-276 or Mg-PSZ (Partially Stabilized Zirconia) ceramic.

Ball seals against machined seat areas for shutoff to ANSI B16.104 Class IV, or DIN 3230, part 3, BN leakage 3.

All interior body surfaces and the ball are made of solid Mg-PSZ for superior erosion/corrosion resistance. Excellent strength and thermal shock resistance.

Minimum cavity space minimizes the retention of line media within the body cavity so product contamination problems are significantly reduced.

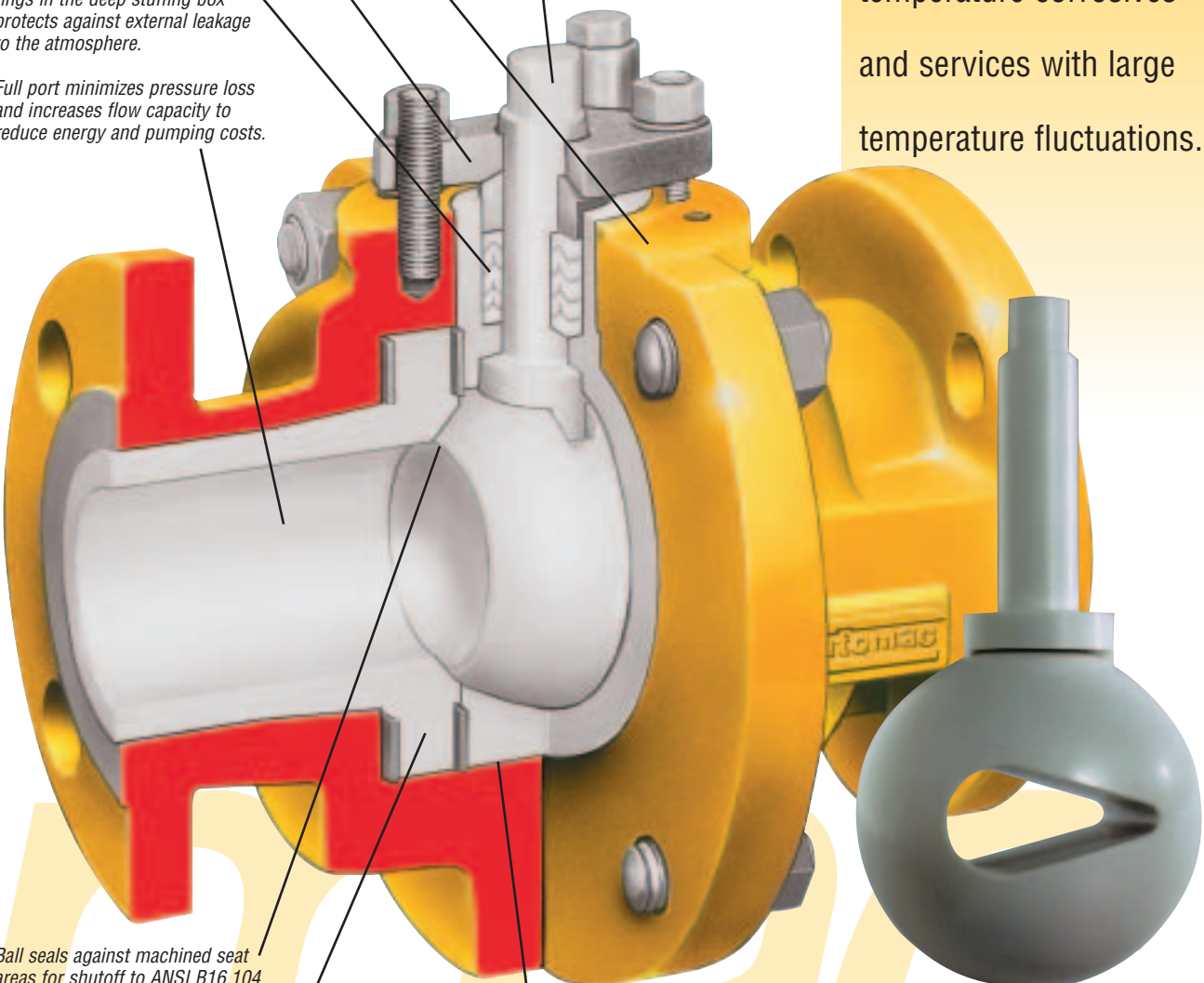
Available in 25 mm (1 in), 40 mm (1½ in), 50 mm (2 in), 80 mm (3 in) and 100 mm (4 in) sizes.

Recommended when nothing else will work in abrasive slurries, high temperature corrosives and services with large temperature fluctuations.

Optional V-port ball provides equal percentage control for throttling abrasive/corrosive media.

For complete information, request Bulletin VA-50.

See page 21 for technical data.



V-Port Control Valves

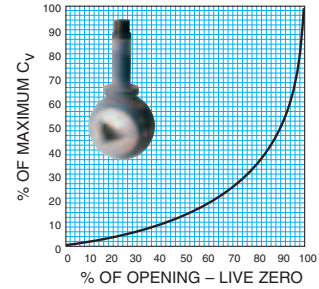
In addition to the features and benefits that have made it the process industry's most preferred lined ball valve worldwide, Atomac offers the V-port ball valve for precise modulating control services.

Maximum C_v (K_v) Values for V-Port AKH3 Valves

Flow Rates	
in (mm)	C_v (K_v) Values
1 (25)	6/14 (5/12)
1½ (40)	15 (13)
2 (50)	40 (36)
3 (80)	65 (56)
4 (100)	141 (122)
6 (150)	189 (163)

C_v = US gal/min at 1 psi ΔP (K_v = m³/hr at 1 bar ΔP)

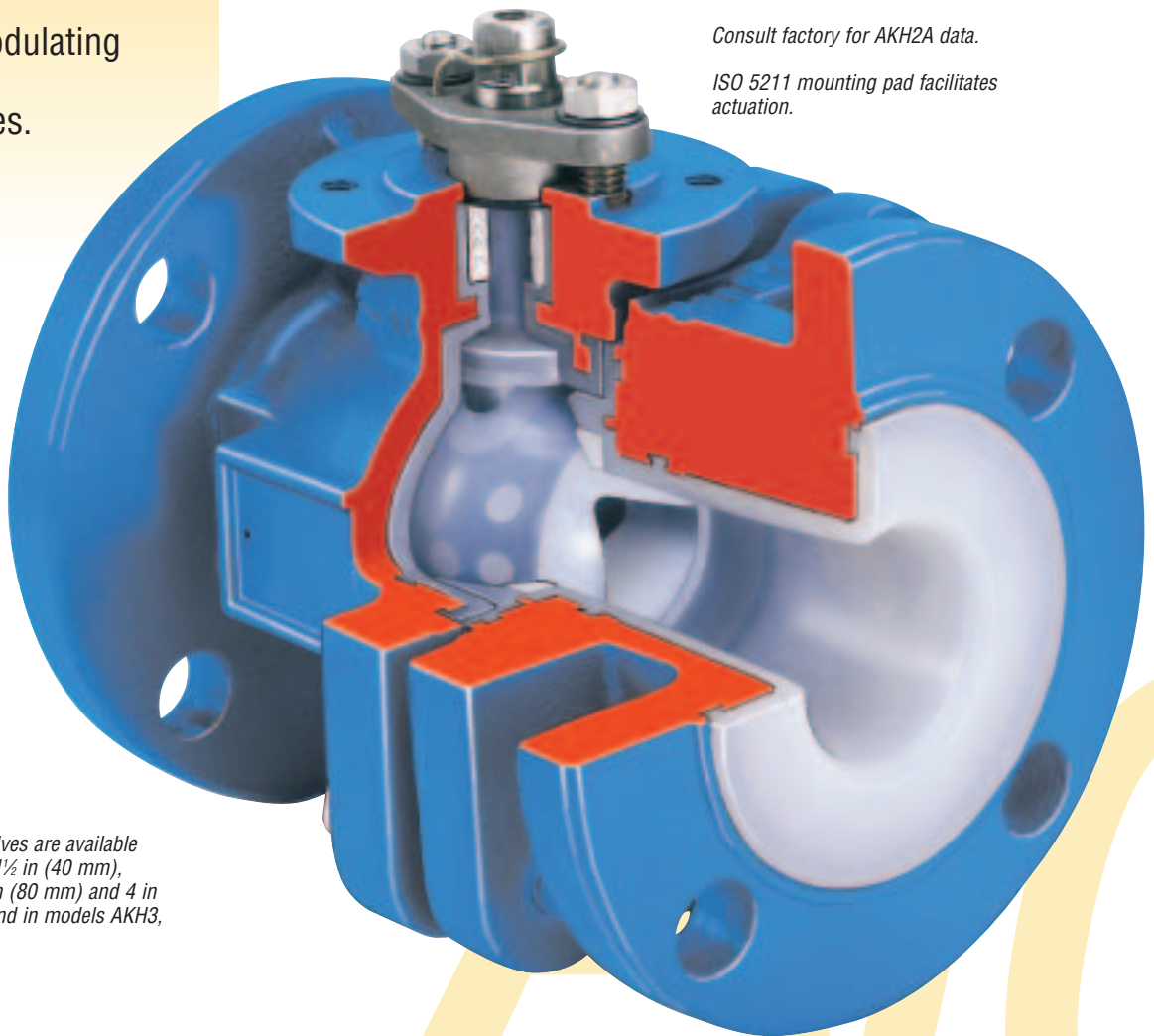
A typical characteristic curve for V-Port AKH3 Valves



Refer to Sections II and IV of the Durco Technical Manual for valve and actuator sizing.

Consult factory for AKH2A data.

ISO 5211 mounting pad facilitates actuation.



Atomac V-port valves are available in 1 in (25 mm), 1½ in (40 mm), 2 in (50 mm), 3 in (80 mm) and 4 in (100 mm) sizes and in models AKH3, AKH2A, AKH2.

Actuation Options For Atomac Lined Valves

Manual Operation

All Atomac ball valves are fitted with a hand wrench as standard for manual operation. A gearbox option is also available for valve sizes 6 in (150 mm) and above.

Actuation

The modular construction of Atomac ball valves allows for easy use of all types of actuation devices. Actuators can be mounted to the valves on-site, without removing them from the pipeline.

Automax®

Flowserve's Automax is a specialist in valve automation systems offering rack and pinion, heavy-duty and electric actuators along with positioners, limit switches, engineered special control circuits and related accessories.



An Atomac ball valve features:

- Low, constant and predictable torque
- Thrust bearing supported stem to eliminate side-loading of packing and subsequent leakage during cycling
- Floating ball seat design for bubble-tight shutoff
- Long-life seats to minimize downtime and maintenance
- ISO 5211 mounting flanges

Torque Ratings

	Size in (mm)	Torque at 0 psi Δ p in/lbs (0 bar Δ p Nm)	Torque at 150 psi Δ p in/lbs (10 bar Δ p Nm)
AKH2 & 2A-FULL PORT	1/2 (15)	53 (6)	53 (6)
	3/4 (20)	53 (6)	53 (6)
	1 (25)	53 (6)	53 (6)
	1 1/2 (40)	132 (15)	177 (20)
	2 (50)	132 (15)	177 (20)
	3 (80)	484 (55)	619 (70)
	4 (100)	619 (70)	796 (90)
	6 (150)	1062 (180)	1770 (200)
	8 (200)	2655 (300)	5310 (600)
	10 (250)	2566 (290)	10,620 (1200)
12 (300)	3540 (400)	15,930 (1800)	
AKH3-STANDARD PORT	1 (25)	53 (6)	53 (6)
	1 1/2 (40)	53 (6)	53 (6)
	2 (50)	132 (15)	177 (20)
	3 (80)	132 (15)	177 (20)
	4 (100)	484 (55)	619 (70)
	6 (150)	619 (70)	796 (90)
	8 (200)	1062 (180)	1770 (200)
	10 (250)	2655 (300)	5310 (600)
12 (300)	2655 (300)	5310 (600)	

Test temperature: 68°F (20°C). Test media: water.

AKH7 For Glass Pipe Systems

AKH7-KP valves are easy to install in glass pipe systems with socket/ball or plane ends according to DIN/ISO 3587 and 4704.

Molded fluorocarbon resin liners are made of either FEP or PFA, depending upon application, for both long service and high corrosion resistance due to their uniform and blowhole-free thickness. The liners' non-stick properties are also ideal for handling highly viscous fluids or for those process applications with high purity requirements.

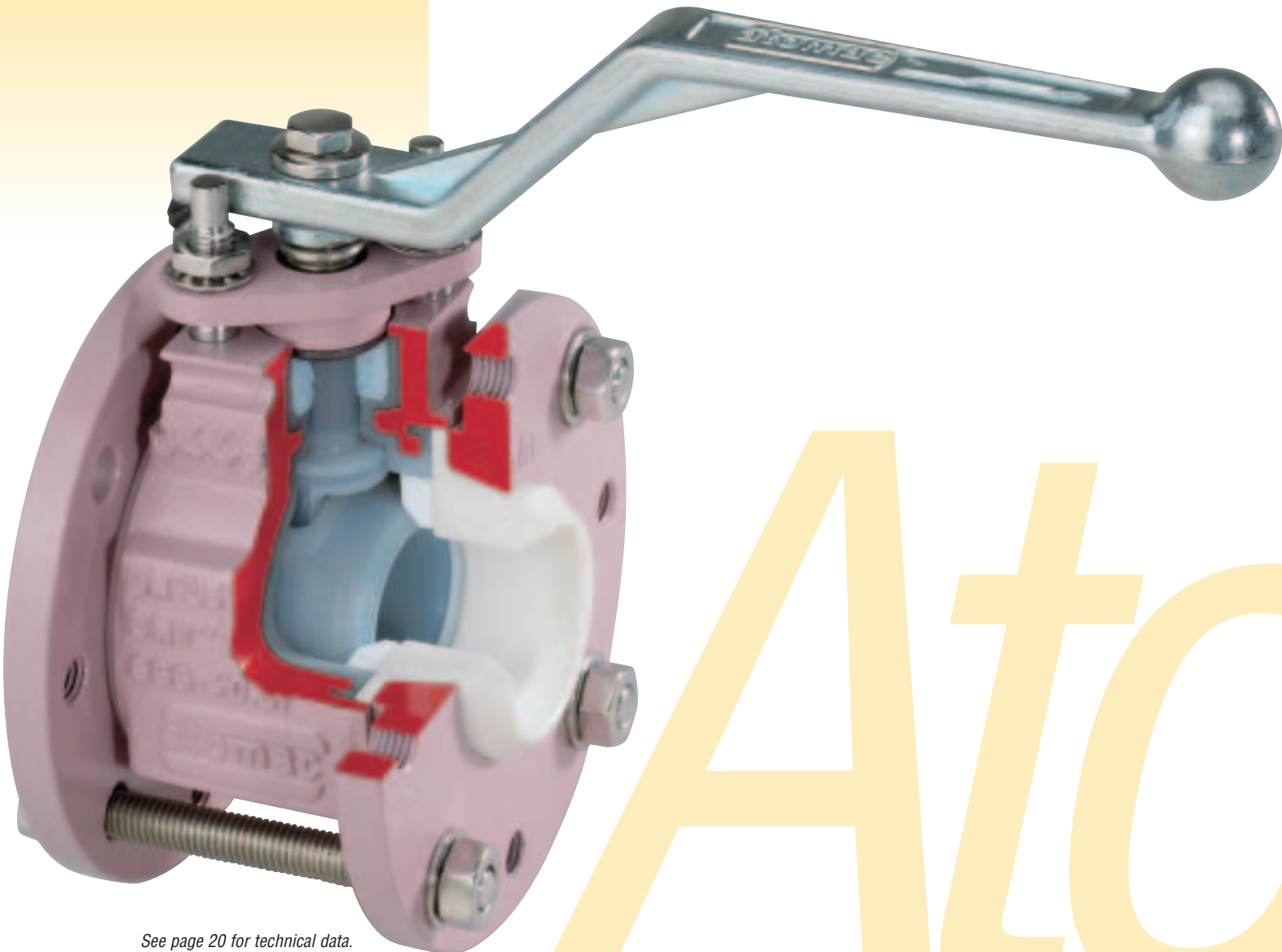
Anti-static device protects against potentially dangerous electrostatic discharges.

Stem is internally assembled to eliminate possibility of blowout.

Long-term protection against atmospheric leakage is provided by PTFE chevron packing rings in the deep stuffing box and by the molded liner/seal.

For flange/glass end connections the AKH7-KPF is available.

AKH7 valves are also available with conductive material for the linings, seals and gland packings.



See page 20 for technical data.

AKH6 Fully Lined Tank Drain Valves

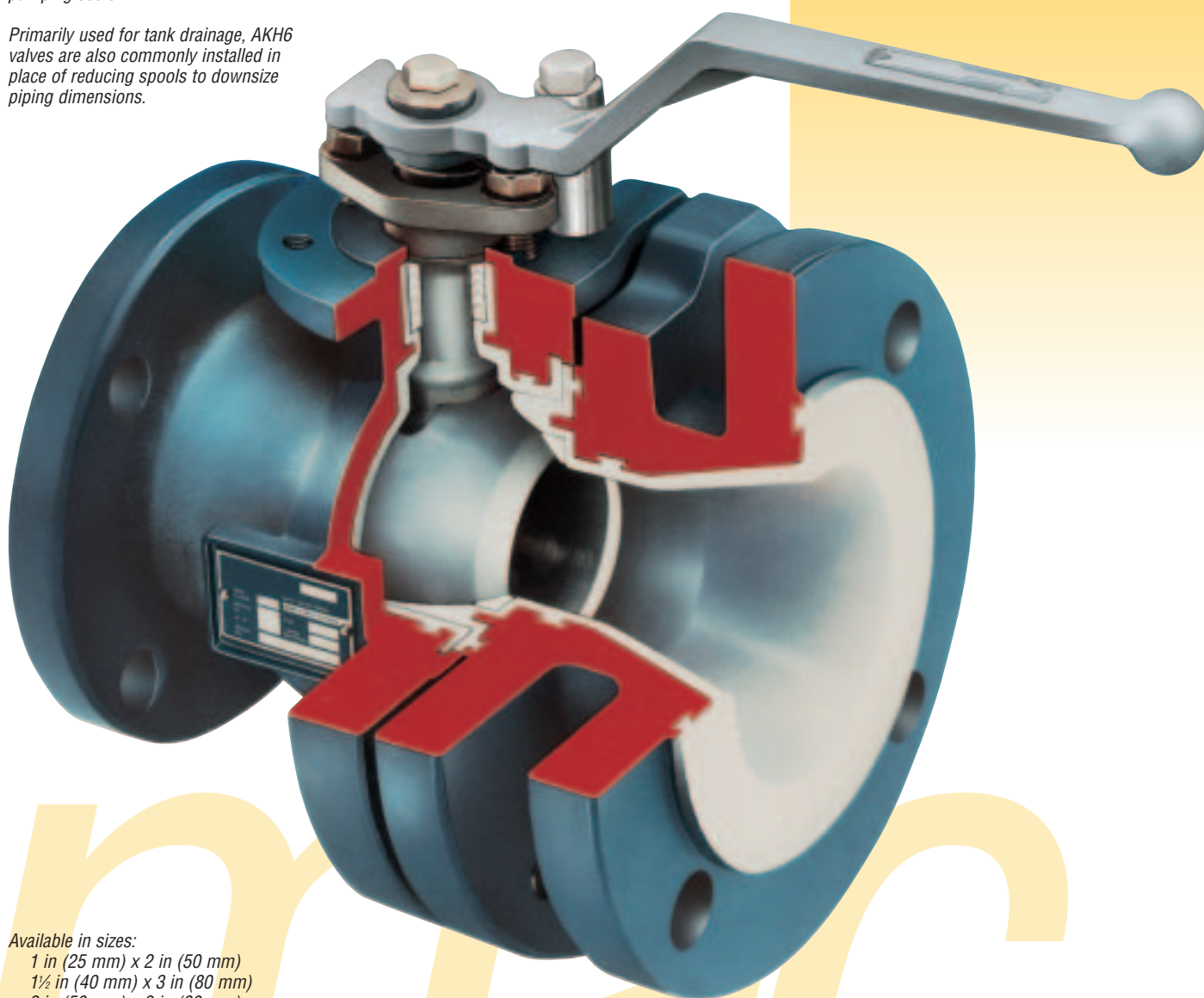
Meets the design criteria of ASME B16.5 Class 150 (DIN 2501-PN 16) and is leak tested to API 598 (DIN 3230).

Designed with a larger inlet port, the valve's full port design minimizes pressure loss and increases flow capacity to reduce energy and pumping costs.

Primarily used for tank drainage, AKH6 valves are also commonly installed in place of reducing spools to downsize piping dimensions.

FEP and PFA liners offer both long service life and superior corrosion resistance. The liners inert non-stick properties make it ideal for highly viscous or high purity services.

The AKH6 tank drain valve offers broad service flexibility and superior performance.



Available in sizes:

- 1 in (25 mm) x 2 in (50 mm)
- 1½ in (40 mm) x 3 in (80 mm)
- 2 in (50 mm) x 3 in (80 mm)
- 2 in (50 mm) x 4 in (100 mm)
- 3 in (80 mm) x 4 in (100 mm)
- 4 in (100 mm) x 6 in (150 mm)
- 6 in (150 mm) x 8 in (200 mm)

See page 19 for technical data.

APN/T Lined Sampling Valves APN/SG Lined Sampling Valves With Sight Glass

Atomac APN valves provide safe sampling of toxic and highly corrosive media without interruption of process flow.

Available in DIN 2501-PN16 and ANSI B16.5 Class 150 designs

Maximum pressure to 87 psi (6 bar)

Sampling volumes between 25 and 100 ml

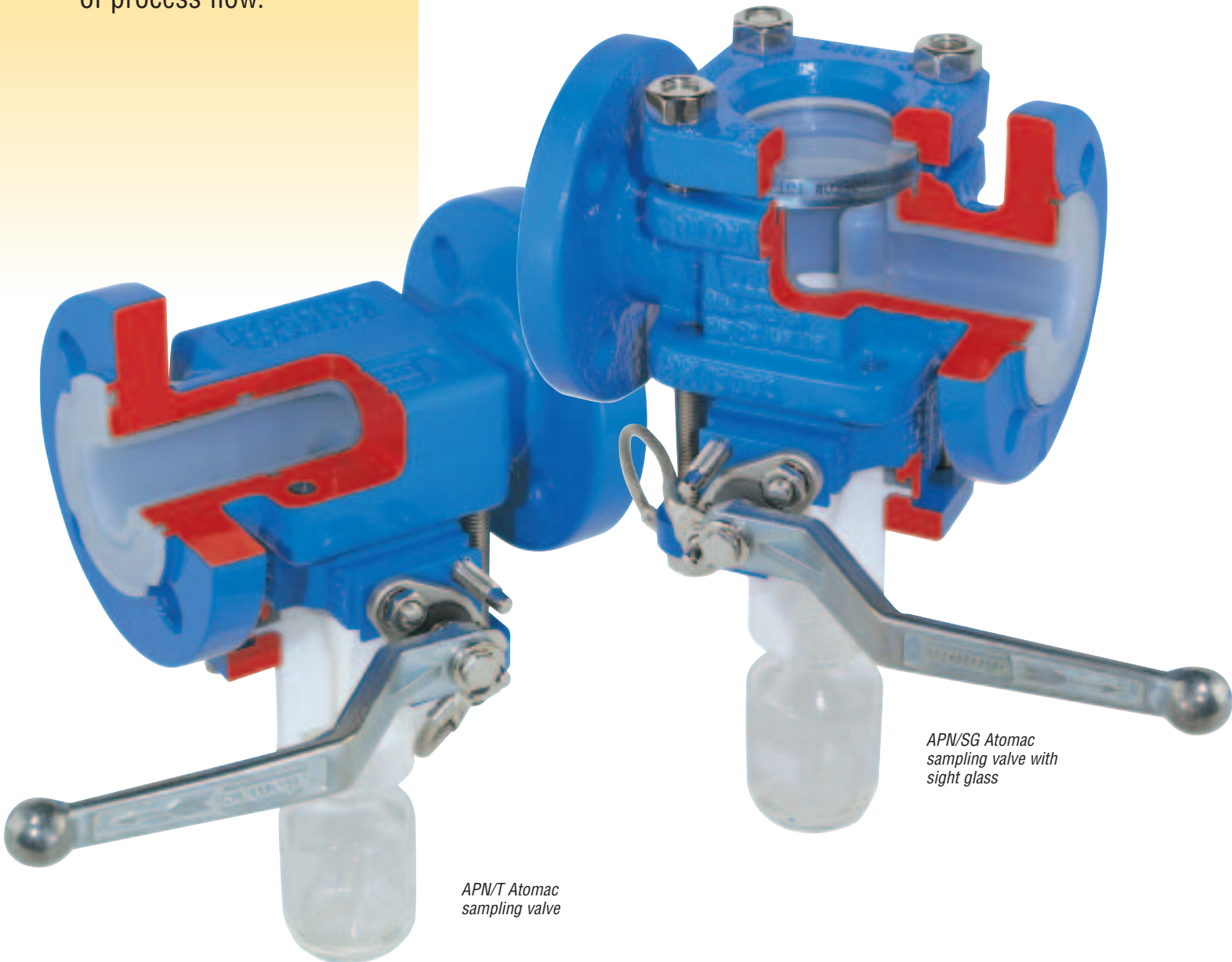
Optional connections for sample bottles

Designed with a minimum of dead space

Adaptable for use in vertical piping systems

Easily automated

FEP, PFA or conductive linings available



APN/T Atomac sampling valve

APN/SG Atomac sampling valve with sight glass

ASG Lined Sight Glass

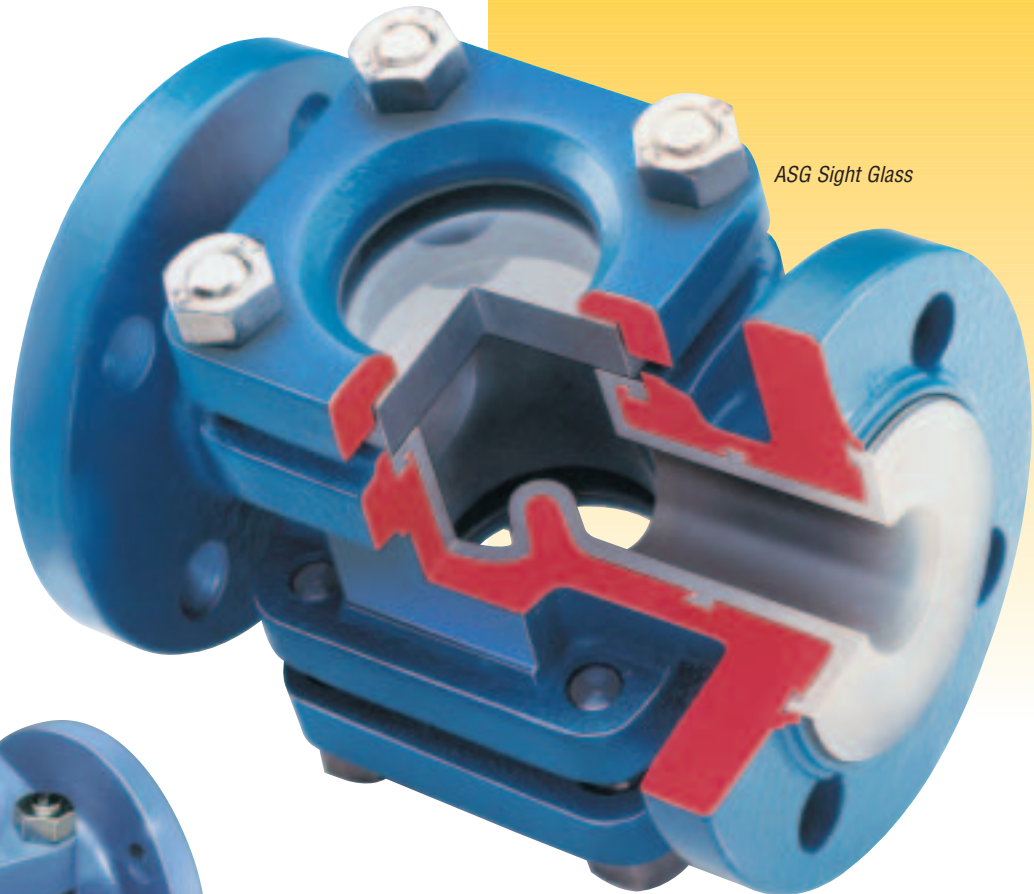
The Atomac Sight Glass Offers Clear Visual Inspection From Either Side

The integrated drip lip with its cast core provides visual flow indication even at low velocity.*

Highly Corrosion Resistant Liners

All internal components other than the glass have the same molded fluoro-carbon liners. These are made of either FEP or PFA, depending upon application, and offer both long service life and high corrosion resistance due to the thick, uniform, blowhole-free liner. The liners' non-stick and inert properties are ideal for highly viscous and high purity applications.

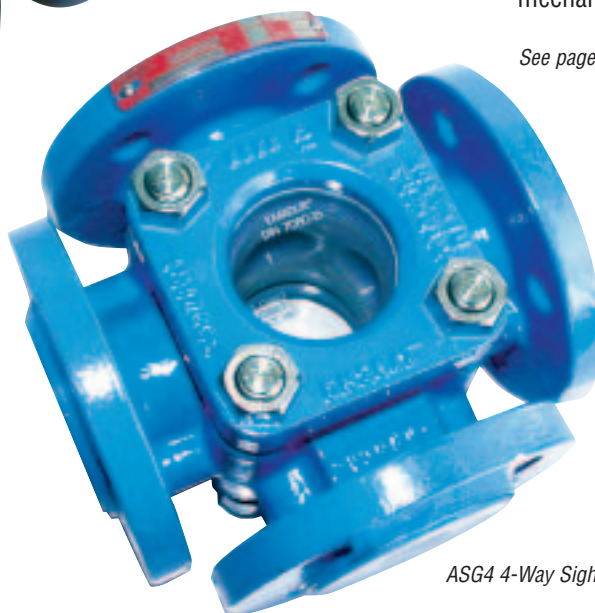
*Optional: Rotor



ASG Sight Glass



ASG3 3-Way Sight Glass



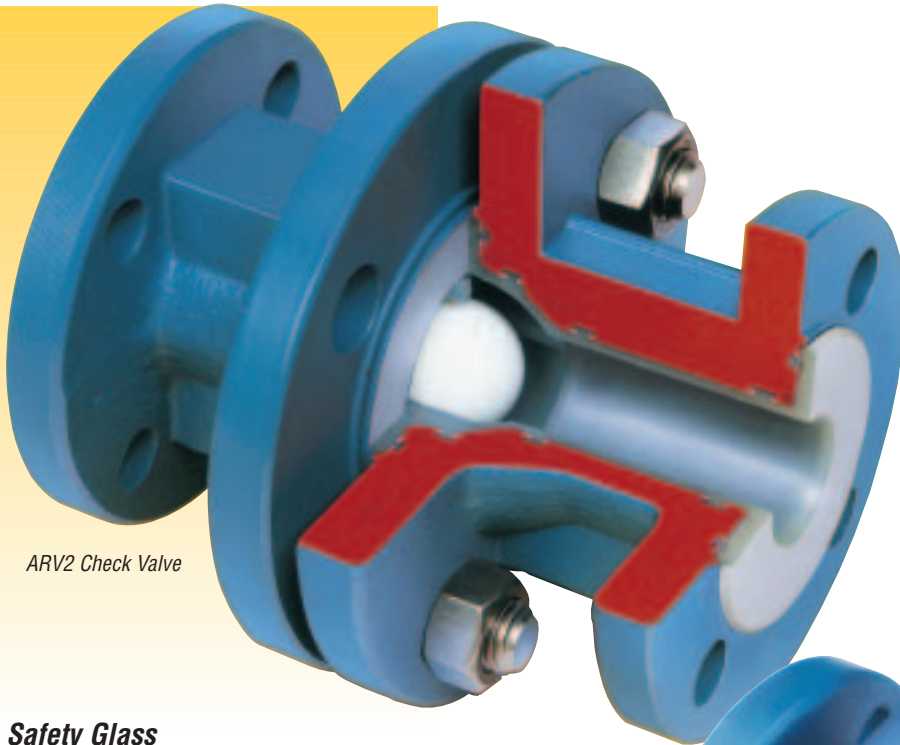
ASG4 4-Way Sight Glass

Safety Glass

Borosilicate glass is utilized to withstand high temperatures, mechanical stress and corrosion.

See pages 23 and 24 for technical data.

ARV2* and ARL Lined Check Valves, ARV/SG Lined Check/Sight Glass Combination



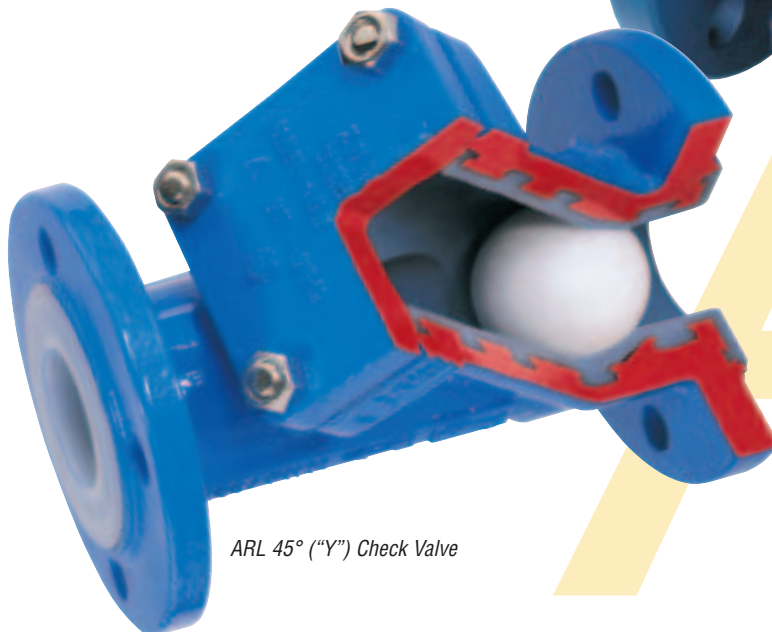
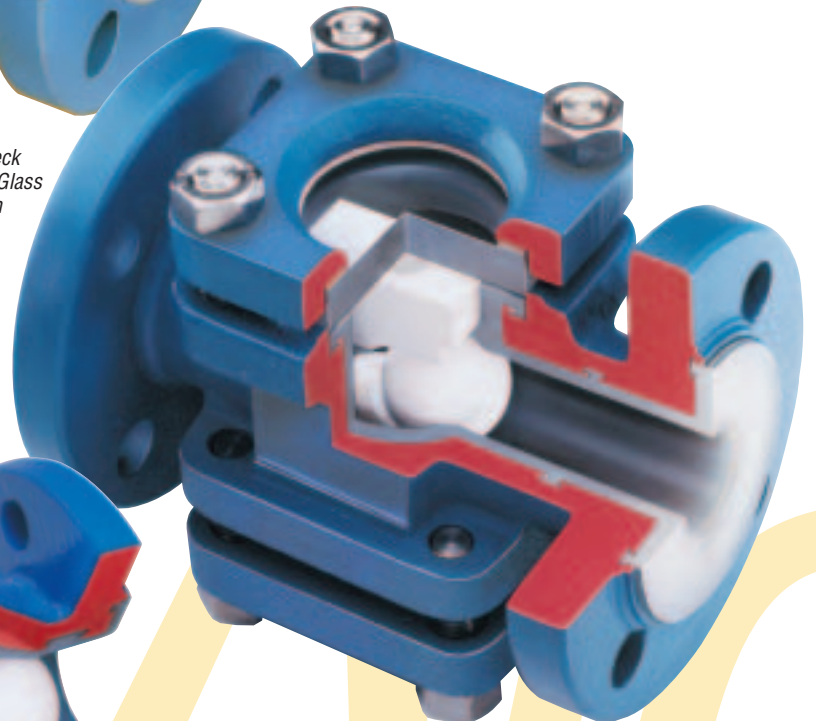
ARV2 Check Valve

Safety Glass

Borosilicate glass, in accordance with DIN 7080, is utilized to withstand high temperatures, mechanical stress and corrosion. For those applications requiring a higher flow capacity, Atomac check valve type ARV/SG should be considered.

See page 25 for technical data.

ARV/SG Check Valve/Sight Glass Combination



ARL 45° ("Y") Check Valve

Universal Application

The Atomac check valve can be installed either vertically or horizontally,** dependent upon application.

Solid PTFE Ball†

The ball has the same properties as the FEP or PFA lining material.

Full Port Design

The full port design offers excellent flow characteristics to minimize pressure loss.

Low Opening Pressure

The minimum opening pressure required to unseat the ball in the vertical position is 0.07 bar (1 psi).

* Now available upon request in 10 in (250 mm) and 12 in (300 mm) sizes.

** Contact your nearest Flowserve office for installation instructions.

† Optional: Hollow PTFE Ball

See page 25 for technical data.

ASF Lined Strainer

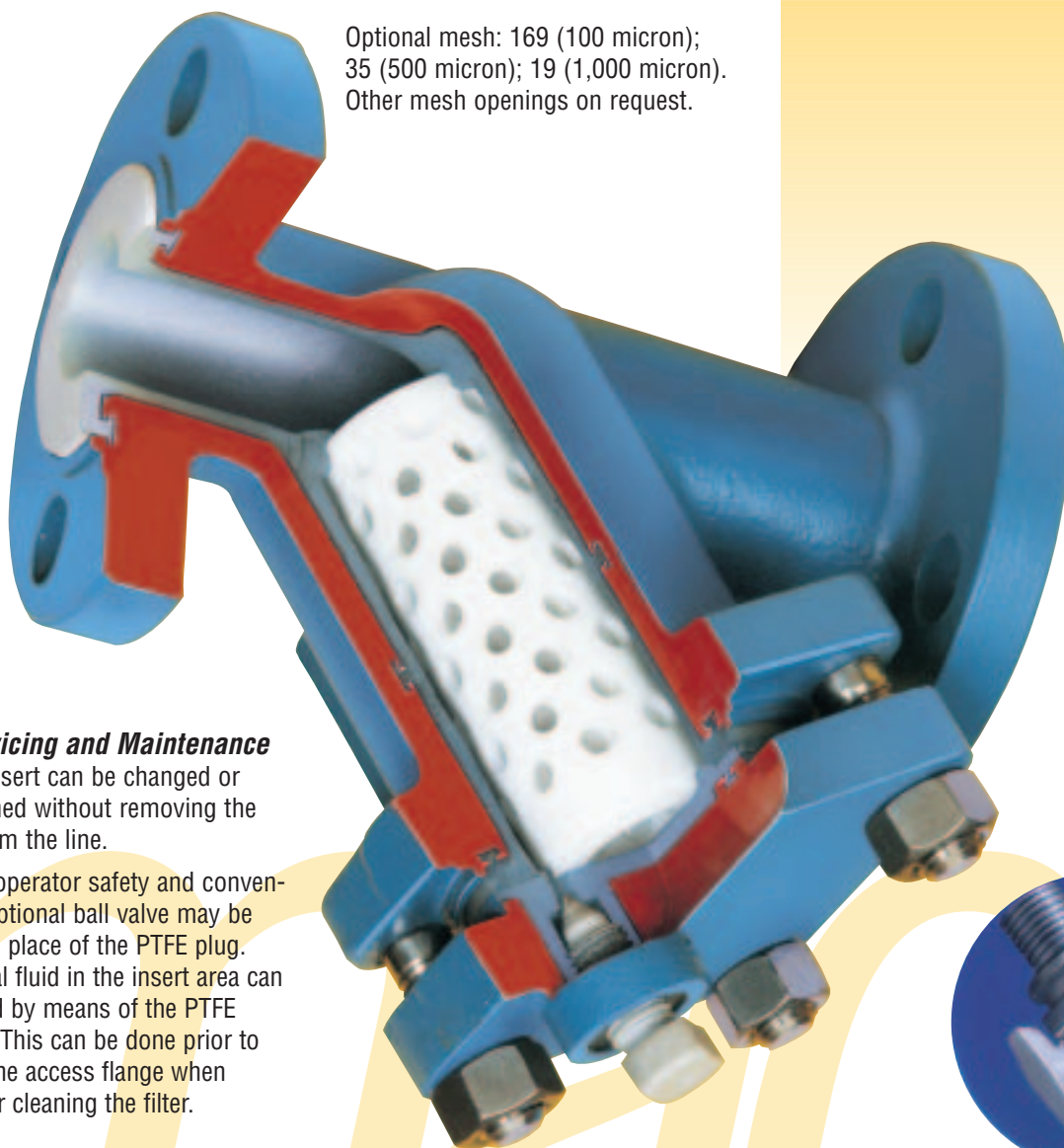
Flow Characteristics

The flow path through the filter insert is a larger area than the original pipe cross-section. This minimizes possible pressure loss.

Corrosion Resistant Filter Insert

The insert consists of two perforated PTFE cylinders with an ETFE filter screen in between. This design offers the same outstanding corrosion resistant properties as the FEP or PFA lining material. Standard mesh is 60 (300 micron).

Optional mesh: 169 (100 micron);
35 (500 micron); 19 (1,000 micron).
Other mesh openings on request.



Easy Servicing and Maintenance

The filter insert can be changed or easily cleaned without removing the strainer from the line.

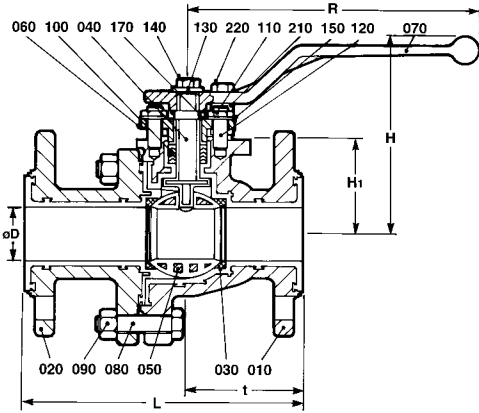
For added operator safety and convenience, an optional ball valve may be specified in place of the PTFE plug. The residual fluid in the insert area can be removed by means of the PTFE drain plug. This can be done prior to removing the access flange when changing or cleaning the filter.

Optional drain valve
(PTFE or Kynar®)

See page 16 for technical data.

® Kynar is a registered trademark of ELF
Atochem North America, Inc.

AKH2 Full Port Valves



Material Specification				
Item	Qty.	Designation	ASTM	DIN
010	1	body	Ductile Iron A395, FEP/PFA*	GGG40.3 DIN EN 1563
020	1	side piece	Ductile Iron A395, FEP/PFA*	GGG40.3 DIN EN 1563
030	2	seat ring	PTFE	PTFE
040	1	stem	Stainless Steel A351 CD-4MCu, PFA	1.4462
050	1	ball†	Ductile Iron A395, FEP/PFA*	GGG40.3 DIN EN 1563
060	1	gland follower	Stainless Steel A351 CF 8, PTFE-Graphite	1.4308 DIN EN 10283
070	1	hand lever	Galvanized, die cast metal††	2.2141 DIN EN 1774
080	4-8	stud fastener	Stainless Steel A193 B8	1.4301 DIN17440
090	8-16	hexagon nut	Stainless Steel A194 8	1.4301 DIN17440
100	1	packing	PTFE/PTFE-Graphite*	PTFE
110	2	hexagon nut	A194 8	1.4301 DIN17440
120	2	stud fastener	A193 B8	1.4301 DIN17440
130	1	lock washer	AISI 304	1.4301 DIN17440
140	1	hexagon fastener	A193 B8	1.4301 DIN17440
150	2	safety washer	AISI A 304	1.4301 DIN17440
170	1	grounding device	Stainless Steel AISI 301	1.4310 DIN17224
210	1	lever stop	Stainless Steel AISI 430F	1.0037 DIN EN 10025
220	1	hexagon fastener	Stainless Steel A193 B8	1.4301 DIN17440

*Optional †Ceramic ball (AL203) available through 6 in (150 mm).
 ††3 in (80 mm) and 4 in (100 mm) are DIN EN 1562, 6 in (150 mm) and larger are DIN EN 10025.

Dimensions/Weights								
Size in (mm)	L in (mm)		H in (mm)	R in (mm)	H ₁ in (mm)	t in (mm)	Weight lbs (kg)	
	ASME	DIN					ASME	DIN
1/2 (15)	5 1/8 (130) ^{oo}	5 1/8 (130)	4 ²³ /32 (120)	6 ⁵ /16 (160)	1 7/8 (48)	2 3/8 (60)	9.5 (4.3)	9.5 (4.3)
3/4 (20)	5 7/8 (150) ^{oo}	5 7/8 (150)	4 ²³ /32 (120)	6 ⁵ /16 (160)	1 7/8 (48)	2 3/4 (70)	10.1 (4.6)	10.1 (4.6)
1 (25)	6 (152.4)	6 ⁵ /16 (160)	4 ²⁷ /32 (123)	6 ⁵ /16 (160)	1 ¹⁵ /16 (49)	2 ⁹ /16 (65)	10.6 (4.8)	11.9 (5.4)
— (32)	—	7 ¹ /16 (180)	5 ²³ /32 (145)	8 ¹ /4 (210)	2 ¹¹ /16 (68)	3 ¹ /8 (80)	—	21.4 (9.7)
1 1/2 (40)	7 (178)	7 ⁷ /8 (200)	5 ²³ /32 (145)	8 ¹ /4 (210)	2 ¹¹ /16 (68)	3 ¹ /8 (80)	20.3 (9.2)	22.9 (10.4)
2 (50)	8 (203)	9 ¹ /16 (230)	6 ⁵ /16 (160)	8 ¹ /4 (210)	3 ¹ /4 (83)	3 ⁷ /16 (87)	28.4 (12.9)	30.9 (14.0)
— (65)	—	11 ⁷ /16 (290)	7 ⁷ /8 (200)	12 ⁵ /16 (313)	4 ⁷ /8 (119)	4 ¹ /4 (108)	—	56.6 (25.7)
3 (80)	9 ¹ /2 (241)	12 ³ /16 (310)	8 ⁵ /32 (207)	12 ⁵ /16 (313)	5 (127)	4 ⁵ /8 (118)	65.0 (29.5)	70.5 (32.0)
4 (100)	11 1/2 (292)	13 ²⁵ /32 (350)	8 ²¹ /32 (220)	12 ⁵ /16 (313)	5 ⁹ /16 (141)	5 ¹ /2 (140)	97.0 (44.0)	104.0 (47.2)
6 (150)	14 (356)	18 ⁷ /8 (480)	12 ⁹ /32 (312)	13 ¹ /4 (337)	8 ¹ /32 (204)	7 ¹ /16 (180)	207.6 (94.2)	220.4 (100.0)
8 (200/150)*†	18 (457)	18 (457) ^o	12 ⁹ /32 (312)	13 ¹ /4 (337)	8 ¹ /32 (204)	9 (229)	238.0 (108.0)	257.9 (117.0)
8 (200)**	18 (457)	18 (457) ^o	14 ¹¹ /16 (373)	17 ¹¹ /16 (450)	10 ¹ /16 (256)	9 ¹ /16 (230)	458.4 (208.0)	458.4 (208.0)
10 (250)‡	21 (534)	21 (534) ^o	—	—	12 (301)	10 ¹ /2 (267)	727.3 (330.0)	694.3 (315.0)
12 (300)‡	24 (610) ^{oo}	24 (610)	—	—	13 ¹ /2 (343)	11 (294)	1013.8 (460.0)	938.9 (426.0)

*Pass-through hand lever 26 1/2 in (673) mm **Pass-through hand lever 35 1/2 in (902) mm †Reduced port valve
 ‡Ball valve only with manual actuator (weight without actuator) °Face to Face dimensions acc. to ANSI B 16.10 °°Face to Face dimensions acc. to DIN EN 558-1

All dimensions are approximate and for illustration purposes only. For exact dimensions request certified dimensional prints.

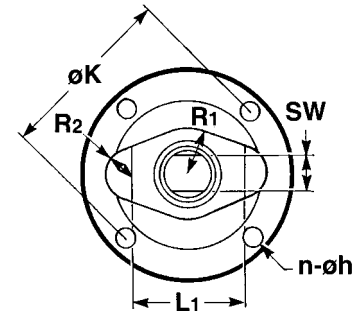
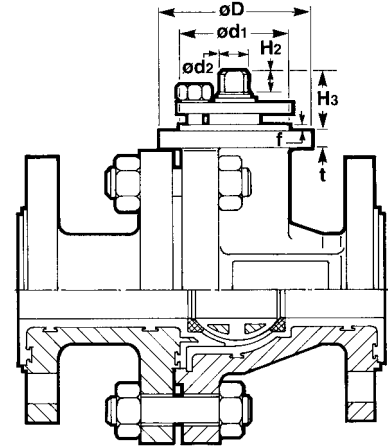
Actuator Mounting of the AKH2 Full Port Valves

Torque Ratings			
in	Size (mm)	0 psi Δp in/lbs (0 bar Δp Nm)	150 psi Δp in/lbs (10 bar Δp Nm)
1/2	(15)	70 (8)	9 (79)
3/4	(20)	70 (8)	9 (79)
1	(25)	70 (8)	9 (79)
1 1/4	(32)	15 (18)	177 (20)
1 1/2	(40)	159 (18)	177 (20)
2	(50)	203 (23)	221 (25)
2 1/4	(65)	398 (45)	442 (50)
3	(80)	442 (50)	531 (60)
4	(100)	619 (70)	708 (80)
6	(150)	1062 (120)	1770 (200)
8/6*	(200/150*)	1062 (120)	1770 (200)
8	(200)	2655 (300)	5310 (600)
10	(250)	3275 (370)	8319 (940)
12	(300)	3540 (400)	15930 (1800)

*Reduced port valve. Test temperature is 68°F (20°C). Test medium is water. For actuator sizing torques, refer to the Durco Technical Manual.

Flow Rates	
Size in (mm)	C _v (K _v) Value
1/2 (15)	19.6 (16.9)
3/4 (20)	28.4 (24.4)
1 (25)	44.9 (38.6)
1 1/4 (32)	79.5 (68.4)
1 1/2 (40)	141.1 (121.4)
2 (50)	232.3 (199.9)
2 1/4 (65)	382.7 (329.3)
3 (80)	611.1 (525.8)
4 (100)	1092.8 (940.2)
6 (150)	2480.3 (2134.0)
8/6* (200/150*)	1745.5 (1501.8)
8 (200)	4580.6 (3941.0)
10 (250)	6074.2 (5226.0)
12 (300)	8823.0 (7591.0)

CV = US gal/min at 1 psi ΔP
(Kv = m³/hr at 1 bar ΔP)
*Reduced port valve

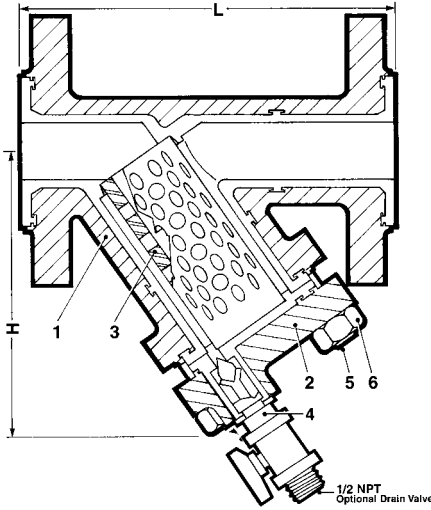


Dimensions																
Size in (mm)	f in (mm)	t in (mm)	H ₂ in (mm)	H ₃ in (mm)	ød ₂ in (mm)	ød ₁ in (mm)	øD in (mm)	L ₁ in (mm)	R ₁ in (mm)	R ₂ in (mm)	øk in (mm)	SW in (mm)	n-øh in	Deep in (mm)	ISO	
1/2 (15)	1/8 (3)	7/32 (6)	9/32 (7.5)	11/16 (27)	13/32 (10)	1 3/8 (35)	2 1/2 (65)	1 15/32 (37)	9/16 (14)	11/32 (9)	1 31/32 (50)	5/16 (8)	4-M6	5/16 (8)	F05	
3/4 (20)	1/8 (3)	7/32 (6)	9/32 (7.5)	11/16 (27)	13/32 (10)	1 3/8 (35)	2 1/2 (65)	1 15/32 (37)	9/16 (14)	11/32 (9)	1 31/32 (50)	5/16 (8)	4-M6	5/16 (8)	F05	
1 (25)	1/8 (3)	9/32 (7)	3/8 (9.3)	13/16 (30)	13/32 (10)	1 3/8 (35)	2 1/2 (65)	1 15/32 (37)	9/16 (14)	11/32 (9)	1 31/32 (50)	5/16 (8)	4-M6	5/16 (8)	F05	
– (32)	1/8 (3)	13/32 (10)	17/32 (12.5)	1 11/32 (34.5)	5/8 (16)	2 5/32 (55)	3 17/32 (90)	1 27/32 (47)	25/32 (20)	13/32 (10)	2 3/4 (70)	5/16 (8)	4-M8	15/32 (12)	F07	
1 1/2 (40)	1/8 (3)	13/32 (10)	17/32 (12.5)	1 3/8 (35)	5/8 (16)	2 5/32 (55)	3 17/32 (90)	1 27/32 (47)	25/32 (20)	13/32 (10)	2 3/4 (70)	15/32 (12)	4-M8	15/32 (12)	F07	
2 (50)	1/8 (3)	13/32 (10)	17/32 (12.5)	1 15/32 (37)	5/8 (16)	2 5/32 (55)	3 17/32 (90)	1 27/32 (47)	25/32 (20)	13/32 (10)	2 3/4 (70)	15/32 (12)	4-M8	15/32 (12)	F07	
– (65)	1/8 (3)	15/32 (13)	19/32 (15.5)	1 13/16 (46)	27/32 (22)	2 3/4 (70)	5 (125)	2 9/32 (58)	29/32 (23)	9/16 (14)	4 (102)	5/8 (16)	4-M10	19/32 (15)	F10	
3 (80)	1/8 (3)	15/32 (13)	19/32 (15.5)	1 13/16 (46)	27/32 (22)	2 3/4 (70)	5 (125)	2 9/32 (58)	29/32 (23)	9/16 (14)	4 (102)	5/8 (16)	4-M10	19/32 (15)	F10	
4 (100)	1/8 (3)	15/32 (13)	19/32 (15.5)	1 13/16 (46)	27/32 (22)	2 3/4 (70)	5 (125)	2 9/32 (58)	29/32 (23)	9/16 (14)	4 (102)	5/8 (16)	4-M10	19/32 (15)	F10	
6 (150)	5/32 (4)	9/16 (14)	25/32 (19.5)	2 1/4 (57)	1 3/16 (30)	3 11/32 (85)	5 15/32 (139)	2 3/4 (70)	1 3/32 (28)	9/16 (14)	5 (125)	3/4 (20)	4-M12	1 11/16 (18)	F12	
8/6* (200/150*)	5/32 (4)	9/16 (14)	25/32 (19.5)	2 1/4 (57)	1 3/16 (30)	3 11/32 (85)	5 15/32 (139)	2 3/4 (70)	1 3/32 (28)	9/16 (14)	5 (125)	3/4 (20)	4-M12	1 11/16 (18)	F12	
8 (200)	5/32 (4)	9/16 (14)	25/32 (19.5)	2 1 1/32 (59)	1 1/2 (40)	3 11/32 (85)	5 15/32 (139)	3 11/32 (85)	1 3/8 (35)	9/16 (14)	5 (125)	1 1/16 (27)	4-M12	1 11/16 (18)	F12	
10 (250)	5/32 (4)	2 1/32 (17)	1 3/8 (35)	3 1/2 (89)	1 31/32 (50)	3 15/16 (100)	6 29/32 (175)	3 23/32 (95)	1 23/32 (48)	5/8 (16)	5 1/2 (140)	1 13/32 (36)	4-M16	1 11/16 (18)	F14	
12 (300)	5/32 (4)	25/32 (20)	1 25/32 (45)	3 26/32 (97)	2 1/32 (60)	5 1/8 (130)	8 1/32 (204)	4 5/16 (110)	2 5/16 (55)	5/8 (16)	6 1/2 (165)	1 13/16 (46)	4-M22	2 7/32 (22)	F16	

*Reduced port.

All dimensions are approximate and for illustration purposes only. For exact dimensions request certified dimensional prints.

ASF Strainer



Connection dimensions according to DIN 2501-PN16 (ANSI B16.5 Class 150).

Dimensions/Weights

Size in (mm)	L in (mm)		H in (mm)	Weight lbs (kgs)	
	ASME	DIN		ASME	DIN
1 (25)	6 ¹ / ₂ (165)	6 ⁹ / ₃₂ (160)	5 (125)	10.8 (4.9)	10.6 (4.8)
1 ¹ / ₂ (40)	—	7 ⁷ / ₈ (200)	5 ²⁹ / ₃₂ (150)	—	20.1 (9.1)
2 (50)	9 (228.6)	9 ¹ / ₁₆ (230)	6 ¹ / ₂ (165)	27.3 (12.4)	26.9 (12.2)
3 (80)	12 ¹ / ₂ (317.5)	12 ⁷ / ₃₂ (310)	11 (280)	61.7 (28.0)	59.5 (27.0)
4 (100)	14 ¹ / ₂ (368)	13 ²⁵ / ₃₂ (350)	12 (305)	82.7 (37.5)	75.4 (34.2)
6 (150*)	18 ¹ / ₂ (470)	18 ¹ / ₂ (470)	16 ³ / ₃₂ (409)	198.4 (90.0)	198.4 (90)
8** (200)	23 ⁵ / ₈ (600)	23 ⁵ / ₈ (600)	23 ⁷ / ₁₆ (595)	462.8 (210.0)	462.8 (210.0)

*Face to Face Dimensions acc. to ANSI B16.10.

**Face to Face Dimensions acc. to DIN EN558-1.

Material Specification

Item	Qty.	Designation	ASTM	DIN
1	1	body	Ductile Iron ASTM A395, FEP/PFA*	GGG-40.3
2	1	flange	Ductile Iron ASTM A395	GGG-40.3
3	1	filter	PTFE/ETFE	PTFE/ETFE
4	1	plug	PTFE	PTFE
5	4-8	stud fastener	ASTM A193 B8	1.4301 DIN17440
6	4-8	hexagon nut	ASTM A194 8	1.4301 DIN17440

*Optional

Flow Rates

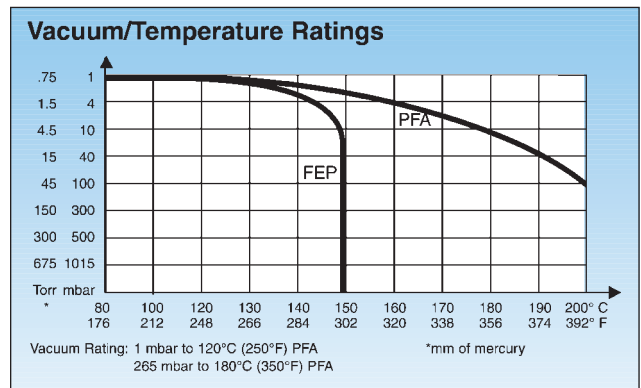
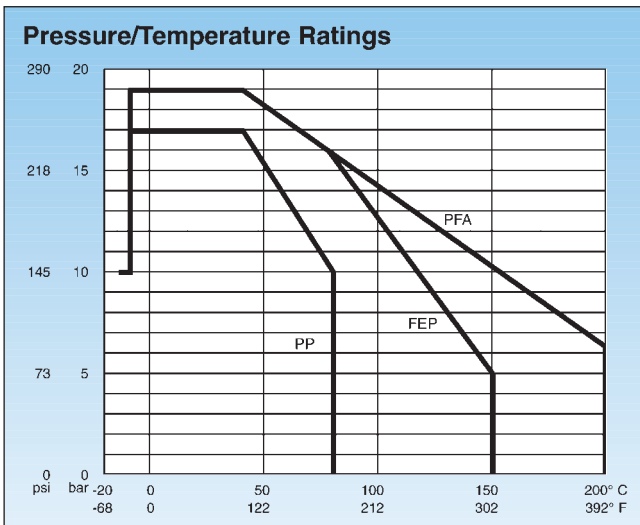
Size in (mm)	Filter in μm - C_v (K _v)			
	100	300	500	1000
1 (25)	8.1 (7.0)	8.3 (7.1)	8.4 (7.2)	9.2 (7.9)
1 ¹ / ₂ (40)	21.9 (18.8)	24.8 (21.3)	27.4 (23.6)	28.0 (24.1)
2 (50)	34.4 (29.6)	36.1 (31.1)	37.5 (32.3)	41.4 (35.4)
3 (80)	91.1 (78.4)	97.4 (83.8)	105.1 (90.4)	109.4 (94.1)
4 (100)	152.7 (131.4)	163.0 (140.2)	172.8 (148.7)	178.2 (153.3)
6 (150)	333.7 (287.1)	356.0 (306.3)	389.6 (335.2)	405.5 (348.9)
8 (200)	544.0 (468.0)	556.7 (479.0)	576* (495*)	596.3 (513.0)

*Estimated Value

C_v = US gal/min at 1 psi ΔP (K_v = m^3/hr at 1 bar ΔP). Flow rates for other mesh sizes available upon request.

All dimensions are approximate and for illustration purpose only. For exact dimensions, request certified dimensional prints.

Pressure/Temperature and Vacuum/Temperature Ratings



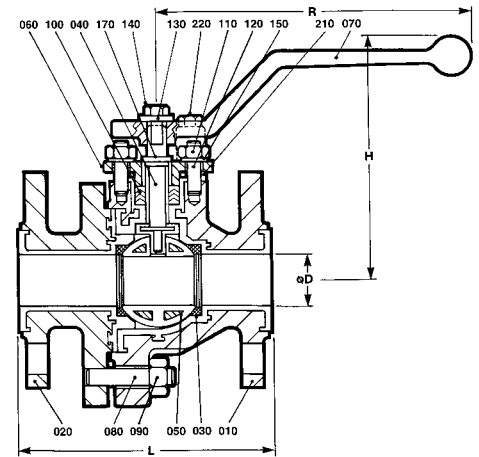
Atomac AKH2A ANSI Dimensional Full Port Valves

Dimensions/Weights					
Size in (mm)	L in (mm)	H in (mm)	R in (mm)	øD in (mm)	Weight lbs (kg)
1 (25)	5 (127)	4 ²³ / ₃₂ (120)	6 ⁵ / ₁₆ (160)	1 (25)	9.04 (4.1)
1½ (40)	6½ (165)	5 ²² / ₃₂ (145)	8 ⁹ / ₃₂ (210)	1 ⁹ / ₁₆ (40)	16.75 (7.6)
2 (50)	7 (178)	6 ⁵ / ₁₆ (160)	8 ⁹ / ₃₂ (210)	2 (50)	27.77 (12.6)
3 (80)	8 (203)	8 ¹ / ₁₆ (205)	12 ¹¹ / ₃₂ (313)	2 ²⁷ / ₃₂ (72)	61.71 (28.0)
4 (100)	9 (229)	8 ²¹ / ₃₂ (220)	12 ¹¹ / ₃₂ (313)	3 ²³ / ₃₂ (95)	79.34 (36.0)
6 (150)	10½ (267)	11 ²⁵ / ₃₂ (299)	13 ⁹ / ₃₂ (337)*	5½ (130)	154.28 (70.0)

*Pass-through hand lever 26½ in (673 mm) is standard.

Material Specification				
Item	Qty.	Designation	ASTM	DIN
010	1	body	Ductile Iron A395, FEP/PFA*	GGG40.3 DIN EN 1563
020	1	side piece	Ductile Iron A395, FEP/PFA*	GGG40.3 DIN EN 1563
030	2	seat ring	PTFE	PTFE
040	1	stem	Stainless Steel A351 CD-4MCu, PFA	1.4462
050	1	ball†	Ductile Iron A395, FEP/PFA*	GGG40.3 DIN EN 1563
060	1	gland follower	Stainless Steel A351 CF 8, PTFE-Graphite	1.4308 DIN EN 10283
070	1	hand lever	Galvanized, die cast metal††	2.2141 DIN EN 1774
080	4-8	stud fastener	Stainless Steel A193 B8	1.4301 DIN17440
090	8-16	hexagon nut	Stainless Steel A194 8	1.4301 DIN17440
100	1	packing	PTFE/PTFE-Graphite*	PTFE
110	2	hexagon nut	A194 8	1.4301 DIN17440
120	2	stud fastener	A193 B8	1.4301 DIN17440
130	1	lock washer	AISI 304	1.4301 DIN17440
140	1	hexagon fastener	A193 B8	1.4301 DIN17440
150	2	safety washer	AISI A304	1.4301 DIN17440
170	1	grounding device	Stainless Steel AISI 301	1.4310 DIN17224
210	1	lever stop	Stainless Steel AISI 430F	1.0037 DIN EN 10025
220	1	hexagon fastener	Stainless Steel A193 B8	1.4301 DIN17440

*Optional **Available in selected sizes †Ceramic ball (AL2O3) available through 2 in (50 mm).
 ††3 in (80 mm) and 4 in (100 mm) are DIN EN 1562, 6 in (150 mm) and larger are DIN EN 10025.



Flow Rates	
Size in (mm)	C _v (K _v) Value
1 (25)	54.1 (46.6)
1½ (40)	147.5 (126.9)
2 (50)	235.4 (202.5)
3 (80)	590.2 (507.8)
4 (100)	1108.1 (953.4)
6 (150)	1833.8 (1577.7)

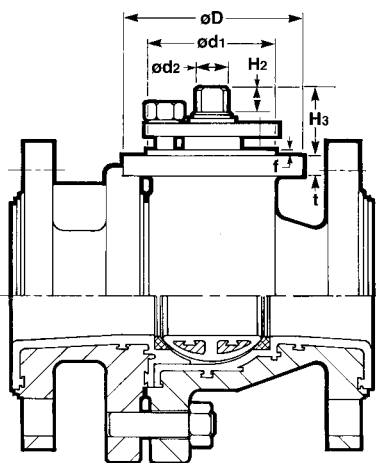
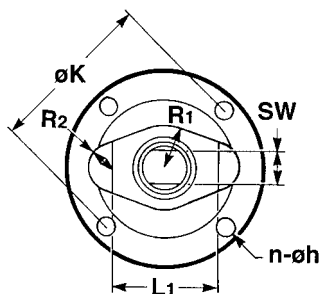
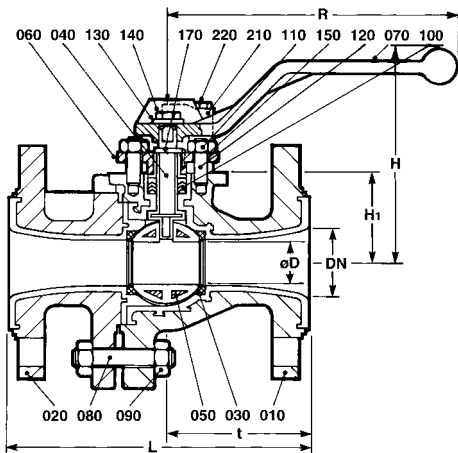
C_v = US gal/min at 1 psi ΔP
 (K_v = m³/hr at 1 bar ΔP)

Torque Ratings		
Size in (mm)	0 psi Δ p (0 bar Δ p) in/lbs (Nm)	10 psi Δ p (150 bar Δ p) in/lbs (Nm)
1 (25)	70 (8)	70 (8)
1½ (40)	159 (18)	177 (20)
2 (50)	203 (23)	221 (25)
3 (80)	398 (45)	442 (50)
4 (100)	478 (54)	637 (72)
6 (150)	110 (974)	1682 (190)

Test temperature is 20°C (68°F).
 Test medium is water. For actuator sizing torques, refer to the Durco Technical Manual.

All dimensions are approximate and for illustration purposes only. For exact dimensions request certified dimensional prints.

AKH3 Standard Port Valves



Dimensions/Weights						
Size in (mm)	L in (mm)	H in (mm)	R in (mm)	H ₁ in (mm)	øD in (mm)	Weight lbs (kg)
1 (25)	5 (127)	4 ²³ / ₃₂ (120)	6 ⁵ / ₈ (160)	1 ⁷ / ₈ (48)	¾ (19)	9.7 (4.4)
1½ (40)	6½ (165)	4 ²³ / ₃₂ (120)	6 ⁵ / ₈ (160)	1 ¹⁵ / ₁₆ (49)	1 (25)	13.7 (6.2)
2 (50)	7 (178)	5 ²³ / ₃₂ (145)	8¼ (210)	2 ¹¹ / ₁₆ (68)	1 ⁹ / ₁₆ (40)	21.5 (10.6)
3 (80)	8 (203)	6 ⁵ / ₈ (160)	8¼ (210)	3¼ (83)	1 ³¹ / ₃₂ (50)	35.5 (16.1)
4 (100)	9 (229)	8 ¹ / ₁₆ (205)	12 ⁵ / ₁₆ (313)	5 (127)	3 ⁵ / ₃₂ (80)	66.4 (30.2)
6 (150)	10½ (267)	8 ²¹ / ₃₂ (220)	12 ⁵ / ₁₆ (313)	5 ⁹ / ₁₆ (141)	4 (100)	110.4 (50.1)
8 (200)	11½ (292)	12¼ (312)	13¼ (337)*	8 (203)	5 ⁷ / ₈ (149)	235.8 (107.0)
10 (250)	13 (330)	14 ¹ / ₁₆ (373)	17 ¹¹ / ₁₆ (450) ^o	10 ¹ / ₁₆ (256)	7 ⁷ / ₈ (200)	436.41 (98.0)
12 (300)	14 (356)	14 ¹ / ₁₆ (373)	17 ¹¹ / ₁₆ (450) ^o	10 ¹ / ₁₆ (256)	7 ⁷ / ₈ (200)	506.9 (230.0)

*Pass-through hand lever 26½ in (673 mm) is standard. ^oPass-through hand lever 36 in (900 mm) is standard.

Material Specification				
Item	Qty.	Designation	ASTM	DIN
010	1	body	Ductile Iron A395, FEP/PFA/PP*	GGG40.3 DIN EN 1563
020	1	side piece	Ductile Iron A395, FEP/PFA/PP*	GGG40.3 DIN EN 1563
030	2	seat ring	PTFE	PTFE
040	1	stem	Stainless Steel A351 CD-4MCu, PFA	1.4462
050	1	ball†	Ductile Iron A395, FEP/PFA*	GGG40.3 DIN EN 1563
060	1	gland follower	Stainless Steel A351 CF 8, PTFE-Graphite	1.4308 DIN EN 10283
070	1	hand lever	Galvanized, die cast metal††	2.2141 DIN EN 1774
080	4-8	stud fastener	Stainless Steel A193 B8	1.4301 DIN17440
090	8-16	hexagon nut	Stainless Steel A194 8	1.4301 DIN17440
100	1	packing	PTFE/PTFE-Graphite*	PTFE
110	2	hexagon nut	A194 8	1.4301 DIN17440
120	2	stud fastener	A193 B8	1.4301 DIN17440
130	1	lock washer	AISI 304	1.4301 DIN17440
140	1	hexagon fastener	A193 B8	1.4301 DIN17440
150	2	safety washer	AISI 304	1.4301 DIN17440
170	1	grounding device	Stainless Steel AISI 301	1.4310 DIN17224
210	1	lever stop	Stainless (galvanized) A 283 B	1.0037 DIN EN 10025
220	1	hexagon fastener	Stainless Steel A193 B8	1.4301 DIN17440

*Optional †Ceramic ball (AL2O3) available through 6 in (150 mm).
 ††4 in (100 mm) and 6 in (150 mm) are DIN EN 1562, 8 in (200 mm) and larger are DIN EN 10025.

Torque Ratings		
Size in (mm)	0 psi Δ p (0 bar Δ p) in/lbs (Nm)	150 psi Δ p (10 bar Δ p) in/lbs (Nm)
1 (25)	70 (8)	70 (8)
1½ (40)	70 (8)	70 (8)
2 (50)	160 (18)	177 (20)
3 (80)	203 (23)	221 (25)
4 (100)	480 (55)	619 (70)
6 (150)	619 (70)	708 (80)
8 (200)	1062 (120)	1770 (200)
10 (250)	2655 (300)	5310 (600)
12 (300)	2655 (300)	5310 (600)

Test temperature is 68°F (20°C). Test medium is water.
 For actuator sizing torques, refer to the Durco Technical Manual.

Flow Rates	
Size in (mm)	C _v (K _v)
1 (25)	36.7 (31.6)
1½ (40)	51.3 (44.1)
2 (50)	184.1 (158.4)
3 (80)	206.3 (177.5)
4 (100)	674.5 (580.3)
6 (150)	917.3 (789.2)
8 (200)	1901.8 (1636.2)
10 (250)	3652.0 (4244.7)
12 (300)	3246.3 (2793.0)

C_v = US gal/min at 1 psi Δ P
 (K_v = m³/hr at 1 bar Δ P)

Actuator Mounting of the AKH3

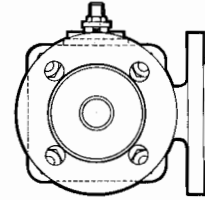
Dimensions																
Size in (mm)	f in (mm)	t in (mm)	H ₂ in (mm)	H ₃ in (mm)	ød ₂ in (mm)	ød ₁ in (mm)	øD in (mm)	L ₁ in (mm)	R ₁ in (mm)	R ₂ in (mm)	øk in (mm)	SW in (mm)	n-øh	Deep in (mm)	ISO	
½ (15)	⅛ (3)	7/32 (6)	5/16 (7.5)	1 ¹ / ₁₆ (27)	1 ³ / ₃₂ (10)	1 ³ / ₈ (35)	2 ⁹ / ₁₆ (65)	1 ¹⁵ / ₃₂ (37)	9/16 (14)	1 ¹ / ₃₂ (9)	2 (50)	5/16 (8)	4-M6	5/16 (8)	F05	
1½ (40)	⅛ (3)	9/32 (7)	¾ (9.3)	1 ⁹ / ₁₆ (30)	1 ³ / ₃₂ (10)	1 ³ / ₈ (35)	2 ⁹ / ₁₆ (65)	1 ¹⁵ / ₃₂ (37)	9/16 (14)	1 ¹ / ₃₂ (9)	2 (50)	5/16 (8)	4-M6	5/16 (8)	F05	
2 (50)	⅛ (3)	1 ³ / ₃₂ (10)	1/2 (12.5)	1 ³ / ₈ (35)	5/8 (16)	2 ³ / ₄ (70)	3 ¹⁷ / ₃₂ (90)	1 ²⁷ / ₃₂ (47)	2 ⁵ / ₃₂ (20)	1 ³ / ₃₂ (10)	2 ³ / ₄ (70)	1 ⁵ / ₃₂ (12)	4-M8	1 ⁵ / ₃₂ (12)	F07	
3 (80)	⅛ (3)	1 ³ / ₃₂ (10)	1/2 (12.5)	1 ¹⁵ / ₃₂ (37)	5/8 (16)	2 ³ / ₄ (70)	3 ¹⁷ / ₃₂ (90)	1 ²⁷ / ₃₂ (47)	2 ⁵ / ₃₂ (20)	1 ³ / ₃₂ (10)	2 ³ / ₄ (70)	1 ⁵ / ₃₂ (12)	4-M8	1 ⁵ / ₃₂ (12)	F07	
4 (100)	⅛ (3)	1 ⁵ / ₃₂ (13)	5/8 (15.5)	1 ²⁷ / ₃₂ (47)	2 ⁷ / ₃₂ (22)	2 ³ / ₄ (70)	5 (125)	2 ⁹ / ₃₂ (58)	2 ⁹ / ₃₂ (23)	9/16 (14)	4 (102)	5/8 (16)	4-M10	1 ⁹ / ₃₂ (15)	F10	
6 (150)	⅛ (3)	1 ⁵ / ₃₂ (13)	5/8 (15.5)	1 ¹³ / ₁₆ (46)	2 ⁷ / ₃₂ (22)	2 ³ / ₄ (70)	5 (125)	2 ⁹ / ₃₂ (58)	2 ⁹ / ₃₂ (23)	9/16 (14)	4 (102)	5/8 (16)	4-M10	1 ⁹ / ₃₂ (15)	F10	
8 (200)	5/32 (4)	9/16 (14)	¾ (19.5)	2 ¹ / ₄ (57)	1 ³ / ₁₆ (30)	3 ¹¹ / ₃₂ (85)	5 ²⁹ / ₃₂ (150)	2 ³ / ₄ (70)	1 ³ / ₃₂ (28)	9/16 (14)	5 (125)	2 ⁵ / ₃₂ (20)	4-M12	1 ¹¹ / ₁₆ (18)	F12	
10 (250)	5/32 (4)	9/16 (14)	¾ (19.5)	2 ¹¹ / ₃₂ (59)	1 ¹⁹ / ₃₂ (40)	3 ¹¹ / ₃₂ (85)	5 ²⁹ / ₃₂ (150)	3 ¹¹ / ₃₂ (85)	1 ³ / ₈ (35)	9/16 (14)	5 (125)	1 ¹ / ₁₆ (27)	4-M12	1 ¹¹ / ₁₆ (18)	F12	
12 (300)	5/32 (4)	9/16 (14)	¾ (19.5)	2 ¹¹ / ₃₂ (59)	1 ¹⁹ / ₃₂ (40)	3 ¹¹ / ₃₂ (85)	5 ²⁹ / ₃₂ (150)	3 ¹¹ / ₃₂ (85)	1 ³ / ₈ (35)	9/16 (14)	5 (125)	1 ¹ / ₁₆ (27)	4-M12	1 ¹¹ / ₁₆ (18)	F12	

• Reduced port. †Consult factory.

All dimensions are approximate and for illustration purposes only. For exact dimensions request certified dimensional prints.

AMP3 3-Way Valves

Dimensions/Weights				
Size mm (in)	L mm (in)	L/2 mm (in)	F	Weight kg (lbs)
1 (25)	6 ⁵ / ₁₆ (160)	3 ⁵ / ₃₂ (80)	F05	11.5 (5.2)
1½ (40)	7 ⁷ / ₈ (200)	3 ¹⁵ / ₁₆ (100)	F07	26.4 (12.0)
2 (50)	9 ¹ / ₁₆ (230)	4 ¹⁷ / ₃₂ (115)	F07	36.8 (16.7)
3 (80)	12 ⁷ / ₃₂ (310)	6 ³ / ₃₂ (155)	F10	70.5 (32.0)
4 (100)	13 ²⁵ / ₃₂ (350)	6 ⁷ / ₈ (175)	F10	99.2 (45.0)



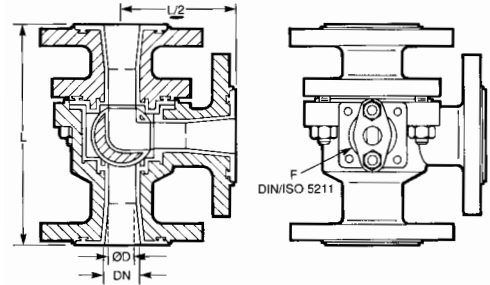
Torque Ratings		
Size in (mm)	0 psi Δ p (0 bar Δ p) Nm (in/lbs)	10 psi Δ p (150 bar Δ p) Nm (in/lbs)
1 (25)	124 (14)	177 (20)
1½ (40)	195 (22)	265 (30)
2 (50)	265 (30)	363 (41)
3 (80)	725 (82)	1018 (115)
4 (100)	973 (110)	1363 (154)

Test temperature is 68°F (20°C).
Test medium is water. For actuator sizing torques, refer to the Durco Technical Manual.

Flow Rates: L-Ball	
Size in (mm)	C _v (K _v) Value*
1 (25)	13.8 (11.9)
1½ (40)	36.5 (31.4)
2 (50)	60.0 (51.6)
3 (80)	124.4 (107.0)
4 (100)	221.7 (190.7)

C_v = US gal/min at 1 psi Δ P
(K_v = m³/hr at 1 bar Δ P)

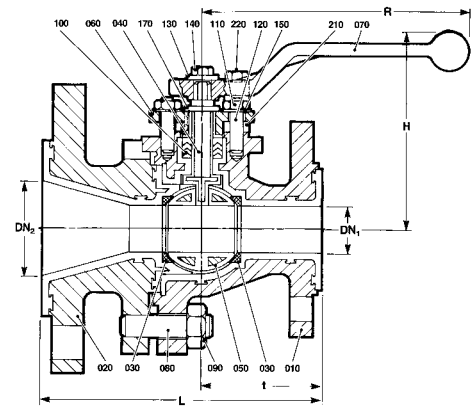
*Contact your nearest office or agent for actuator mount information.



AKH6 Tank Drain Valves

Dimensions/Weights							
Size in (mm)	L in (mm)		t mm (in)	R mm (in)	H mm (in)	Weight lbs (kg)	
	ASME	DIN				ASME	DIN
1x2 (25/50)	5 ²⁹ / ₃₂ (150)	5 ²⁹ / ₃₂ (150)	2 ⁹ / ₁₆ (65)	6 ⁵ / ₁₆ (160)	4 ²³ / ₃₂ (120)	13.2 (6.0)	14.5 (6.6)
1½x3 (40/80)	7 ⁹ / ₃₂ (185)	7 ⁹ / ₃₂ (185)	3 ¹ / ₁₆ (80)	8 ⁹ / ₃₂ (210)	5 ³ / ₄ (145)	28.7 (3.0)	28.7 (13.0)
2x3 (50/80)	7 ¹⁹ / ₃₂ (195)	7 ¹⁹ / ₃₂ (195)	3 ⁷ / ₁₆ (88)	8 ⁹ / ₃₂ (210)	6 ⁵ / ₁₆ (160)	34.4 (15.6)	35.7 (16.2)
2x4 (50/100)	7 ⁷ / ₈ (200)	7 ⁷ / ₈ (200)	3 ⁷ / ₁₆ (88)	8 ⁹ / ₃₂ (210)	6 ⁵ / ₁₆ (160)	40.8 (18.5)	38.6 (17.5)
2x6 (50/150)	7 ²¹ / ₃₂ (185)	7 ²¹ / ₃₂ (185)	3 ⁷ / ₁₆ (88)	8 ⁹ / ₃₂ (210)	6 ⁵ / ₁₆ (160)	49.8 (22.6)	49.8 (22.6)
3x4 (80/100)	9 ⁵ / ₈ (245)	9 ⁵ / ₈ (245)	4 ¹⁹ / ₃₂ (118)	12 ¹¹ / ₃₂ (313)	8 ¹ / ₁₆ (205)	68.3 (31.0)	68.3 (31.0)
3x8 (80/200)	—	8 (200)	4 ¹⁹ / ₃₂ (118)	12 ¹¹ / ₃₂ (313)	8 ¹ / ₁₆ (205)	—	145.5 (66.0)
4x6 (100/150)	11 ¹³ / ₃₂ (290)	11 ¹³ / ₃₂ (290)	5 ¹ / ₂ (140)	12 ¹¹ / ₃₂ (313)	8 ²¹ / ₃₂ (220)	110.2 (50.0)	101.4 (46.0)
6x8 (150/200)	12 (305)	12 (305)	7 ³ / ₃₂ (180)	13 ¹ / ₄ (337)	12 ¹ / ₁₆ (312)	335.01 (52.0)	335.0 (152.0)

Flange connections per DIN 2501/PN16 (ANSI B16.5 Class 150 lbs).



Torque Ratings		
Size mm (in)	0 psi Δ p (0 bar Δ p) Nm (in/lbs)	10 psi Δ p (150 bar Δ p) Nm (in/lbs)
1x2 (25/50)	71 (8)	71 (8)
1½x3 (40/80)	159 (18)	177 (20)
2x3 (50/80)	203 (23)	221 (25)
2x4 (50/100)	203 (23)	221 (25)
2x6 (50/150)	203 (23)	221 (25)
3x4 (80/100)	442 (50)	531 (60)
3x8 (80/200)	442 (50)	531 (60)
4x6 (100/150)	619 (70)	708 (80)
6x8 (150/200)	1062 (120)	1770 (200)

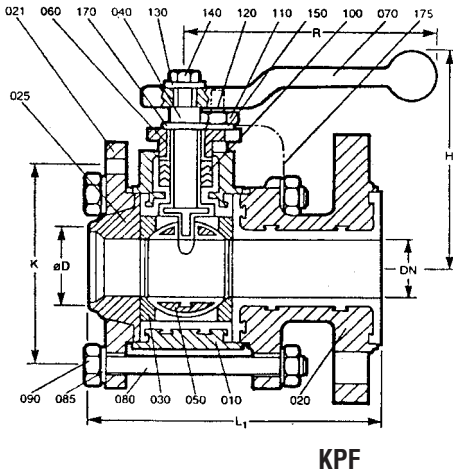
Test temperature is 68°F (20°C).
Test medium is water. For actuator sizing torques, refer to the Durco Technical Manual.

Flow Rates	
Size Outlet/Inlet in (mm)	C _v (K _v)
1x2 (25/50)	37.3 (32.1)
1½x3 (40/80)	135.2 (116.3)
2x3 (50/80)	80.7 (69.4)
2x4 (50/100)	77.5 (66.7)
2x6 (50/150)	70.3 (60.5)*
3x4 (80/100)	667.5 (574.3)
3x8 (80/200)	617 (531)*
4x6 (100/150)	333.7 (287.1)
6x8 (150/200)	1388 (1195)*

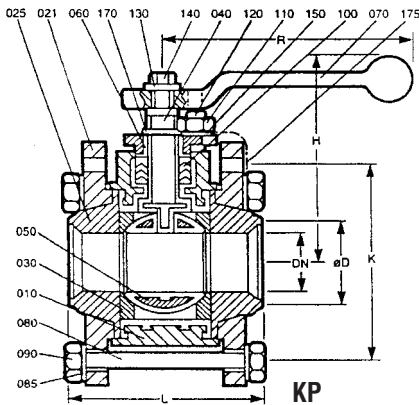
C_v = US gal/min at 1 psi Δ P
(K_v = m³/hr at 1 bar Δ P)
*Estimated value

All dimensions are approximate and for illustration purposes only. For exact dimensions request certified dimensional prints.

Atomac AKH7 Ball Valves



KPF



KP

Dimensions/Weights								Weight	
Size in (mm)	L in (mm)	L ₁ in (mm)	ØD in (mm)	K in (mm)	H in (mm)	R in (mm)		AKH7-KP lbs (kg)	AKH7-KPF lbs (kg)
1 (25)	3 ⁵ / ₃₂ (80)	4 ²³ / ₃₂ (120)	1 ³ / ₈ (35)	3 ¹¹ / ₃₂ (85)	4 ¹⁹ / ₃₂ (118)	6 ⁵ / ₁₆ (160)		4.8 (2.2)	7.3 (3.3)
1 ¹ / ₂ (40)	4 ⁵ / ₁₆ (110)	6 ³ / ₃₂ (155)	2 (51)	4 ⁵ / ₁₆ (110)	5 ³ / ₄ (146)	8 ⁹ / ₃₂ (210)		11.5 (5.2)	15.4 (7.0)
2 (50)	5 (125)	7 (178)	2 ¹ / ₂ (64)	5 (125)	5 ²⁹ / ₃₂ (150)	8 ⁹ / ₃₂ (210)		16.5 (7.5)	19.0 (8.6)
4 (100)	7 ⁷ / ₈ (200)	10 ¹³ / ₁₆ (275)	4 ⁹ / ₁₆ (116)	7 ³ / ₃₂ (180)	8 ⁹ / ₃₂ (210)	12 ¹¹ / ₃₂ (313)		70.5 (32.0)	79.3 (36.0)

Material Specification				
Item	Qty.	Designation	ASTM	DIN
010	1	centerpiece	Ductile Iron A395, FEP/PFA*	GGG40.3 DIN EN 1563
020	1	side piece	Ductile Iron A395, FEP/PFA*	GGG40.3 DIN EN 1563
021	2	flange side piece	Steel	1.0570 DIN EN 10025
025	2	socket/ball side piece	PTFE glass	PTFE glass
030	2	seat ring	PTFE	PTFE
040	1	stem	Stainless Steel A351 CD-4MCu, PFA	1.4462/PFA
050	1	ball	Ductile Iron A395, FEP/PFA, alt. AL ₂ O ₃ *	GGG40.3 DIN EN 1563
060	1	gland follower	Stainless Steel A351 CF8, PTFE-Graphite	1.4308 DIN10283/PTFE-Graphite
070	1	hand lever	Galvanized, die cast metal**	2.2141 DIN EN 1774**
080	4	stud fastener	A193 B8	1.4301 DIN17440
085	8	washer	AISI 304	1.4301 DIN17440
090	8	hexagon nut	A194 8	1.4301 DIN17440
100	1set	packing	PTFE/PTFE-Graphite*	PTFE/PTFE-Graphite*
110	2	hexagon nut	A194 8	1.4301 DIN17440
120	2	stud fastener	A193 B8	1.4301 DIN17440
130	1	lock washer	AISI 304	1.4301 DIN17440
140	1	hexagon fastener	A193 B8	1.4301 DIN17440
150	2	safety washer	AISI 304	1.4301 DIN17440
170	1	grounding device	Stainless Steel AISI 301	1.4310 DIN17224
175	1	grounding strap	Stainless Steel AISI 304	1.4301/PVC

*Optional **4 in (100 mm) are DIN EN 1562.

Torque Ratings		
Size in (mm)	0 psi Δ p (0 bar Δ p) in/lbs (Nm)	150 psi Δ p (10 bar Δ p) in/lbs (Nm)
1 (25)	71 (8)	71 (8)
1 ¹ / ₂ (40)	159 (18)	177 (18)
2 (50)	203 (23)	221 (23)
4 (100)	708 (80)	1018 (80)

Test temperature is 68°F (20°C). Test medium is water. For actuator sizing torques, refer to the Durco Technical Manual.

Flow Rates	
Size in (mm)	C _v (K _v)
1 (25)	51.8 (44.6)
1 ¹ / ₂ (40)	138.7 (119.3)
2 (50)	233.9 (201.2)
4 (100)*	1090.2 (938.0)

C_v = US gal/min at 1 psiΔP (K_v = m³/hr at 1 bar ΔP)
*Estimated value

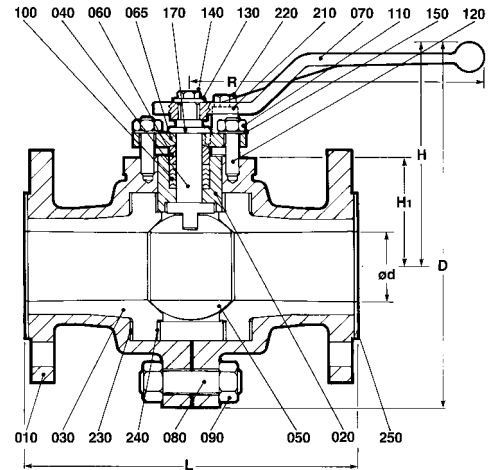
Actuator Mounting of the AKH7

Dimensions													
Size in (mm)	H in (mm)	H ₁ in (mm)	a in (mm)	b in (mm)	c in (mm)	Ød ₁ in (mm)	e in (mm)	f in (mm)	g in (mm)	SW in (mm)	Ød ₁ in (mm)	L ₁ in (mm)	L ₂ in (mm)
1 (25)	3 ⁵ / ₃₂ (80)	1 ²¹ / ₃₂ (36)	1 ²¹ / ₃₂ (42)	1 ¹⁵ / ₃₂ (37)	3 ²¹ / ₃₂ (93)	7 ³ / ₃₂ (6)	1 ¹⁵ / ₃₂ (44)	2 ¹ / ₃₂ (52)	3 ¹ / ₈ (9.5)	5 ¹ / ₁₆ (8)	1 ³ / ₃₂ (10)	9 ¹ / ₃₂ (6.5)	9 ¹ / ₃₂ (7.5)
1 ¹ / ₂ (40)	4 ¹⁹ / ₃₂ (116)	2 ⁵ / ₃₂ (55)	2 ¹¹ / ₃₂ (60)	1 ²⁷ / ₃₂ (47)	5 ⁷ / ₃₂ (133)	1 ³ / ₃₂ (10)	2 ¹ / ₈ (54)	2 ¹⁵ / ₁₆ (75)	9 ¹ / ₃₂ (7)	1 ⁵ / ₃₂ (12)	5 ⁸ / ₁₆ (16)	1 ¹ / ₂ (12.5)	1 ¹ / ₂ (12.5)
2 (50)	4 ²³ / ₃₂ (120)	2 ⁵ / ₃₂ (55)	2 ¹¹ / ₃₂ (60)	1 ²⁷ / ₃₂ (47)	5 ⁷ / ₃₂ (133)	1 ³ / ₃₂ (10)	2 ¹ / ₈ (54)	2 ¹⁵ / ₁₆ (75)	9 ¹ / ₃₂ (7)	1 ⁵ / ₃₂ (12)	5 ⁸ / ₁₆ (16)	1 ¹ / ₂ (12.5)	1 ¹ / ₂ (12.5)
4 (100)	7 ¹⁷ / ₃₂ (191)	2 ⁹ / ₁₆ (65)	2 ¹¹ / ₁₆ (68)	2 ²¹ / ₃₂ (67)	7 ¹ / ₈ (181)	1 ³ / ₃₂ (10)	2 ⁷ / ₃₂ (57)	3 ¹⁵ / ₁₆ (100)	1 ³ / ₁₆ (20.5)	5 ⁸ / ₁₆ (16)	7 ⁸ / ₁₆ (22)	5 ⁸ / ₁₆ (16)	1 ⁹ / ₃₂ (15)

All dimensions are approximate and for illustration purposes only. For exact dimensions request certified dimensional prints.

AKH5 Ceramic Lined Valves

Dimensions/Weights									
Size in (mm)	L in (mm)		H in (mm)	R in (mm)	H ₁ in (mm)	øD in (mm)	D in (mm)	Weight lbs (kg)	
	ASME	DIN						ASME	DIN
1 (25)	6 (152.4)	6 ⁵ / ₁₆ (160)	4 ¹³ / ₁₆ (122)	6 ⁵ / ₁₆ (160)	1 ²⁹ / ₃₂ (49)	1 (25)	7 ¹¹ / ₁₆ (195)	15.2 (6.9)	16.1 (7.3)
1½ (40)	7 (178)	7 ¹ / ₈ (200)	5 ²⁹ / ₃₂ (150)	8 ⁹ / ₃₂ (210)	2 ⁹ / ₁₆ (65)	1 ⁹ / ₁₆ (40)	7 ³ / ₃₂ (240)	30.4 (13.8)	32.0 (14.5)
2 (50)	8 (203)	9 ¹ / ₁₆ (230)	6 ⁵ / ₁₆ (160)	8 ⁹ / ₃₂ (210)	3 ¹ / ₃₂ (77)	1 ³¹ / ₃₂ (50)	10 ⁷ / ₃₂ (260)	40.8 (18.5)	42.1 (19.1)
3 (80)	9½ (241)	12 ¹ / ₃₂ (310)	8 (205)	12 ¹¹ / ₃₂ (313)	4 ²⁵ / ₃₂ (121)	3 ¹ / ₃₂ (77)	13 ³ / ₁₆ (335)	88.2 (40.0)	97.0 (44.0)
4 (100)	11½ (292)	13 ²⁵ / ₃₂ (350)	8 ⁹ / ₃₂ (210)	12 ¹¹ / ₃₂ (313)	5 ⁵ / ₃₂ (131)	3 ¹³ / ₁₆ (97)	14 (355)	121.0 (55.0)	121.0 (55.0)

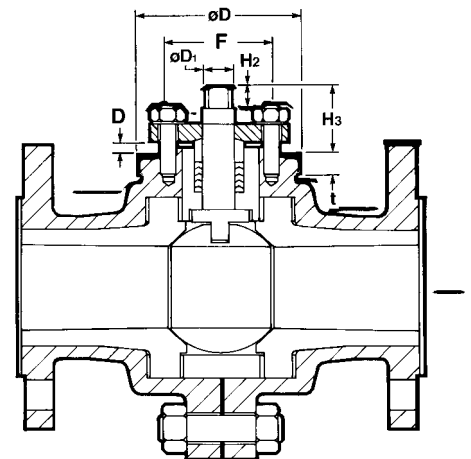


These dimensions pertain to AKH5 valves with either stainless steel or Hastelloy C-276 stems. Connection dimensions according to DIN 2501-PN16 (ANSI B16.5 Class 150).

Material Specification

Item	Qty.	Designation	ASTM	DIN
010	2	two-piece body	Ductile Iron A395	GGG40.3 DIN EN 1563
020	1	body center	Mg-PSZ Zirconia Ceramic	Zirkonoxid/Cerconia
030	2	bushing	Mg-PSZ Zirconia Ceramic	Zirkonoxid/Cerconia
040	1	stem	AISI 431 (Hast. C-276* or Mg-PSZ Zirconia Ceramic*)	1.2316 DIN17350
050	1	ball	Mg-PSZ Zirconia Ceramic	Zirkonoxid/Cerconia
060	1	packing gland	Stainless Steel AISI 304	1.4301 DIN17440
065	1	adjuster	Stainless Steel AISI 304	1.4301 DIN17440
070	1	hand lever	Galvanized, die cast metal	2.2141 DIN EN 1774
080	4-8	stud fastener	Stainless Steel ASTM 193 B8	1.4301 DIN17440
090	8-16	hexagon nut	Stainless Steel ASTM 194-8	1.4301 DIN17440
100	1 set	chevron packing	PTFE to 392°F/Grafseal to 662°F	PTFE/Grafseal
110	2	hexagon nut	Stainless Steel ASTM A 194-8	1.4301 DIN17440
120	2	stud fastener	Stainless Steel ASTM A 193 B8	1.4301 DIN17440
130	1	safety washer	Stainless Steel AISI 304	1.4301 DIN17440
140	1	hexagon fastener	Stainless Steel ASTM A 193 B8	1.4301 DIN17440
150	2	lock washer	Stainless Steel AISI 304	1.4301 DIN17440
170	1	grounding device	Stainless Steel AISI 301	1.4310 DIN17224
210	1	stop post	Galvanized A283 B	1.0037 DIN EN 10025
220	1	hexagon fastener	Stainless Steel A193 B8	1.4301 DIN17440
230	2	flat gasket	Gylon Fawn to 392°F/Grafseal to 662°F	Gylon Fawn/Grafseal
240	2	flat gasket	Gylon Fawn to 392°F/Grafseal to 662°F	Gylon Fawn/Grafseal
250	2	flat gasket	Gylon Fawn to 392°F/Grafseal to 662°F	Gylon Fawn/Grafseal

*Optional

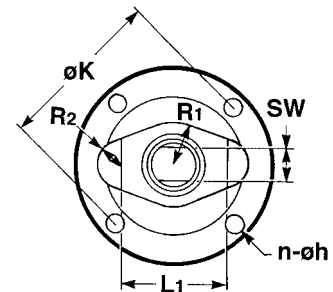


Torque Ratings				
Size in (mm)	44 psi Δ p (3 bar Δ p) in/lbs (Nm)	87 psi Δ p (6 bar Δ p) in/lbs (Nm)	150 psi Δ p (10 bar Δ p) in/lbs (Nm)	235 psi Δ p (16 bar Δ p) in/lbs (Nm)
1 (25)	27 (3)	31 (3.5)	44 (5)	71 (8)
1½ (40)	53 (6)	84 (9.5)	93 (10.5)	164 (18.5)
2 (50)	97 (11)	186 (21)	221 (25)	407 (46)
3 (80)	443 (50)	841 (95)	1106 (125)	1947 (220)
4 (100)	487 (55)	1106 (125)	1460 (165)	2124 (240)

Test temperature is 68°F (20°C). Test medium is water.
For actuator sizing torques, refer to the Durco Technical Manual.

Flow Rates	
Size in (mm)	C _v (K _v)
1 (25)	50.4 (43.4)
1½ (40)	137.3 (118.1)
2 (50)	226.6 (195.0)
3 (80)	596.8 (513.5)
4 (100)	948.0 (815.6)

C_v = US gal/min at 1 psi ΔP
(K_v = m³/hr at 1 bar ΔP)

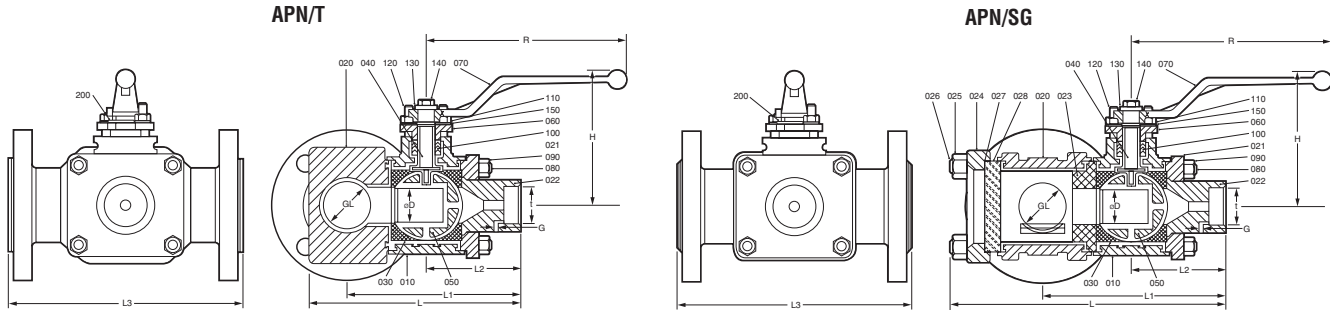


Actuator Mounting of the AKH5 Ceramic Valve

Dimensions															
Size in (mm)	D in (mm)	t in (mm)	H ₂ in (mm)	H ₃ in (mm)	D in (mm)	øD ₁ in (mm)	øD in (mm)	F in (mm)	R ₁ in (mm)	R ₂ in (mm)	øK in (mm)	SW in (mm)	n-øh	Deep in (mm)	ISO
1 (25)	1/8 (3)	9/32 (7.5)	13/32 (9.5)	17/32 (31)	13/32 (10)	1 3/8 (35)	2 9/16 (65)	1 21/32 (42)	5/8 (16)	11/32 (9)	2 (50)	5/16 (8)	4-M6	5/16 (8)	F05
1½ (40)	1/8 (3)	13/32 (10)	1/2 (12.5)	1 9/16 (40)	5/8 (16)	2 7/32 (55)	3 17/32 (90)	2 9/32 (58)	25/32 (20)	13/32 (10)	2 3/4 (70)	15/32 (12)	4-M6	15/32 (12)	F07
2 (50)	1/8 (3)	13/32 (10)	1/2 (12.5)	1 17/32 (39)	5/8 (16)	2 7/32 (55)	3 17/32 (90)	2 9/32 (58)	25/32 (20)	13/32 (10)	2 3/4 (70)	15/32 (12)	4-M8	15/32 (12)	F07
3 (80)	1/8 (3)	15/32 (13)	5/8 (15.5)	1 27/32 (47)	2 7/32 (22)	2 3/4 (70)	5 (125)	3 (75)	1 (26)	15/32 (13)	4 (102)	5/8 (16)	4-M8	19/32 (15)	F10
4 (100)	1/8 (3)	15/32 (13)	5/8 (15.5)	1 27/32 (47)	2 7/32 (22)	2 3/4 (70)	5 (125)	3 (75)	1 (26)	15/32 (13)	4 (102)	5/8 (16)	4-M10	19/32 (15)	F10

All dimensions are approximate and for illustration purposes only. For exact dimensions request certified dimensional prints.

APN/T Sampling Valves APN/SG Sampling Valves/ Sight Glass



Connection dimensions according to DIN 2501-PN16 (ANSI B16.5 Class 150).

Dimensions – DIN (APN/T)													
Size in (mm)	L in (mm)	L ₁ in (mm)	L ₂ in (mm)	L ₃ in (mm)	H in (mm)	R in (mm)	GL DIN 168	t in (mm)	G (in)	ØD in (mm)	Sampling Vol. cm ³	Weight lbs (kg)	
1 (25)	5 ¹ / ₁₆ (151)	4 ⁷ / ₃₂ (126)	3 ³ / ₃₂ (79)	6 ¹ / ₁₆ (160)	4 ¹ / ₃₂ (120)	6 ¹ / ₁₆ (160)	GL32	1 ¹ / ₃₂ (15)	G 1/8	2 ⁵ / ₃₂ (20)	7.54	15.8 (7.2)	
2 (50)	8 ¹ / ₁₆ (214)	6 ⁷ / ₃₂ (174)	3 ¹ / ₁₆ (97)	9 ¹ / ₁₆ (230)	6 ¹ / ₁₆ (160)	8 ¹ / ₄ (210)	GL45	2 ³ / ₃₂ (18)	G 1/8	1 ¹ / ₂ (38)	56.70	66.9 (30.4)	
3 (80)	9 ¹ / ₃₂ (244)	7 ¹ / ₁₆ (189)	3 ¹ / ₁₆ (97)	12 ⁷ / ₃₂ (310)	6 ¹ / ₁₆ (160)	8 ¹ / ₄ (210)	GL45	2 ³ / ₃₂ (18)	G 1/8	1 ¹ / ₂ (38)	56.70		

Dimensions – DIN (APN/SG)													
Size in (mm)	L in (mm)	L ₁ in (mm)	L ₂ in (mm)	L ₃ in (mm)	H in (mm)	R in (mm)	GL DIN 168	t in (mm)	G (in)	ØD in (mm)	Sampling Vol. cm ³	Weight lbs (kg)	
1 (25)	8 (203)	5 ¹ / ₁₆ (138)	3 ³ / ₃₂ (79)	6 ¹ / ₁₆ (160)	4 ¹ / ₃₂ (120)	6 ¹ / ₁₆ (160)	GL32	1 ¹ / ₃₂ (15)	G 1/8	2 ⁵ / ₃₂ (20)	7.54	14.5 (6.6)	
1 ¹ / ₂ (40)	9 ¹ / ₃₂ (239)	6 ¹ / ₂ (165)	3 ⁹ / ₃₂ (92)	7 ¹ / ₈ (200)	5 ²³ / ₃₂ (145)	8 ¹ / ₄ (210)	GL45	2 ³ / ₃₂ (18)	G 1/8	1 ¹ / ₄ (32)	34.58	25.3 (11.5)	
2 (50)	10 ¹ / ₁₆ (278)	7 ¹ / ₃₂ (183)	3 ¹ / ₁₆ (97)	9 ¹ / ₁₆ (230)	6 ¹ / ₁₆ (160)	8 ¹ / ₄ (210)	GL45	2 ³ / ₃₂ (18)	G 1/8	1 ¹ / ₂ (38)	56.70	33.9 (15.4)	
2 ³ / ₈ (50/80)	13 ³ / ₈ (340)	8 ¹ / ₃₂ (215)	3 ¹ / ₁₆ (97)	12 ⁷ / ₃₂ (310)	6 ¹ / ₁₆ (160)	8 ¹ / ₄ (210)	GL45	2 ³ / ₃₂ (18)	G 1/8	1 ¹ / ₂ (38)	56.70	61.6 (28.0)	

Dimensions – ASME (APN/SG)													
Size in (mm)	L in (mm)	L ₁ in (mm)	L ₂ in (mm)	L ₃ in (mm)	H in (mm)	R in (mm)	GL DIN 168	t in (mm)	G (in)	ØD in (mm)	Sampling Vol. cm ³	Weight lbs (kg)	
1 (25)	8 (203)	5 ¹ / ₁₆ (138)	3 ³ / ₃₂ (79)	6 (152.4)	4 ¹ / ₃₂ (120)	6 ¹ / ₁₆ (160)	GL32	1 ¹ / ₃₂ (15)	G 1/8	2 ⁵ / ₃₂ (20)	7.54	13 (5.9)	
1 ¹ / ₂ (40)	9 ¹ / ₃₂ (239)	6 ¹ / ₂ (165)	3 ⁹ / ₃₂ (92)	7 (178)	5 ²³ / ₃₂ (145)	8 ¹ / ₄ (210)	GL45	2 ³ / ₃₂ (18)	G 1/8	1 ¹ / ₄ (32)	34.58	20.5 (9.3)	
2 (50)	10 ¹ / ₁₆ (278)	7 ¹ / ₃₂ (183)	3 ¹ / ₁₆ (97)	8 (203)	6 ¹ / ₁₆ (160)	8 ¹ / ₄ (210)	GL45	2 ³ / ₃₂ (18)	G 1/8	1 ¹ / ₂ (38)	56.70	28.4 (12.9)	
2 ³ / ₈ (50/80)	13 ³ / ₈ (340)	8 ¹ / ₃₂ (215)	3 ¹ / ₁₆ (97)	9 ¹ / ₂ (241)	6 ¹ / ₁₆ (160)	8 ¹ / ₄ (210)	GL45	2 ³ / ₃₂ (18)	G 1/8	1 ¹ / ₂ (38)	56.70	57.6 (26.2)	

Material Specification (APN/T & APN/SG)										
Item	Qty.	Designation	ASTM	DIN	Item	Qty.	Designation	ASTM	DIN	
10	1	center piece	A395. FEP/PFA*	GGG-40.3 DIN EN 1563	60	1	gland follower	A351 CF-8	1.4308 DIN EN 10025	
20	1	body piece	A395. FEP/PFA*	GGG-40.3 DIN EN 1563	70	1	hand lever	Galvanized die cast metal	2.2141 DIN EN 1774	
21	1	flange	A714	1.0570 DIN EN 10025	80	4	socket head cap screws stud bolts (APN/SG)	A193 B8	1.4301 DIN 17440	
22	1	side piece	PTFE	1.4301 DIN 17440						
23	1	spacer	PTFE	1.4301 DIN 17440						
24	1	flange	A395	GGG-40.3 DIN EN 1563						
25	4	hexagon nut	A194 8	1.4301 DIN 17440	100	1 set	packing material (chevron)	PTFE		
26	4	stud bolt	A193 B8	1.4301 DIN 17440						
27	1	flat gasket	Asbestos free	DIN 3535/4	110	2	hexagon nut	A194 8	1.4301 DIN 17440	
28	1	glass	Borosilicate glass	DIN 7080	120	3	stud bolt	A193 B8	1.4301 DIN 17440	
29	1	glass	Borosilicate glass	DIN 7080	130	1	lock washer	AISI 304	1.4301 DIN 17440	
30	2	seat ring	PTFE	1.4462	140	1	hexagon bolt	A193 B8	1.4301 DIN 17440	
40	1	stem	A351 CD4MCU/PFA	1.4462	150	2	serrated lock washer	AISI 304	1.4301 DIN 17440	
50	1	ball	A395/PFA	GGG-40.3 DIN EN 1563	200	1	grounding device	AISI 304	1.4301 DIN 17224	

*Optional

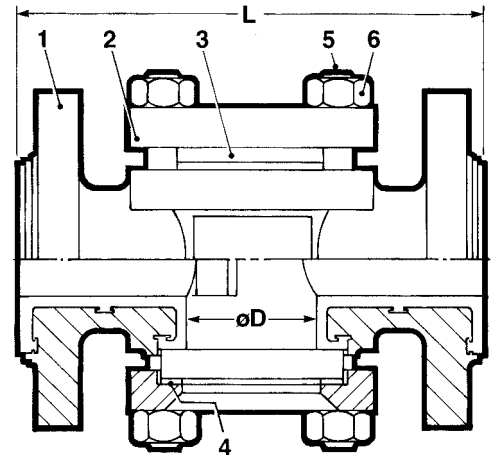
All dimensions are approximate and for illustration purposes only. For exact dimensions request certified dimensional prints.

ASG Sight Glass

Dimensions/Weights					
Size in (mm)	L mm (in)		øD in (mm)	Weight kgs (lbs)	
	ASTM	DIN		ASTM	DIN
1 (25)	6 (152.4)	6 ⁵ / ₁₆ (160)	1 ²³ / ₃₂ (45)	10.4 (4.7)	11.5 (5.2)
1 ¹ / ₂ (40)	7 (178)	7 ⁷ / ₈ (200)	2 ⁹ / ₃₂ (58)	15.2 (6.9)	20.1 (9.1)
2 (50)	8 (203)	9 ¹ / ₁₆ (230)	3 (77)	24.9 (11.3)	27.6 (12.5)
– (65)	—	11 ¹³ / ₃₂ (290)	3 (77)	—	33.1 (15.0)
3 (80)	9 ¹ / ₂ (241)	12 ⁷ / ₃₂ (310)	3 ¹⁹ / ₁₆ (100)	39.7 (18.0)	43.6 (19.8)
4 (100)	11 ¹ / ₂ (292)	13 ²⁵ / ₃₂ (350)	5 (125)	62.2 (28.2)	61.9 (28.1)
6 (150)	—	18 ²⁹ / ₃₂ (480)	7 (175)	—	134.4 (61.0)

Flow Rates	
Size in (mm)	C _v (K _v)
1 (25)	31.7 (27.3)
1 ¹ / ₂ (40)	95.9 (82.5)
2 (50)	146.2 (125.8)
– (65)	250.4 (215.4)
3 (80)	384.1 (330.5)
4 (100)	598.7 (515.1)
– (150)	1423.5 (1224.7)

C_v = US gal/min at 1 psi ΔP
(K_v = m³/hr at 1 bar ΔP)



Connection dimensions according to DIN 2501-PN16 (ANSI B16.5 Class 150).

Material Specification				
Item	Qty.	Designation	ASTM	DIN
1	1	body	Ductile Iron ASTM A395, FEP/PFA*	GGG-40.3 DIN EN 1563
2	2	flange	Ductile Iron ASTM A395	GGG-40.3 DIN 3N 1563
3	2	glass	Borosilicate Glass	DIN 7080
4	2	gasket	Universal, asbestos free	DIN 3535/6
5	8-16	stud fastener	ASTM A193 B8	1.4301 - DIN 17440
6	8-16	hexagon nut	ASTM A194 8	1.4301 - DIN 17440

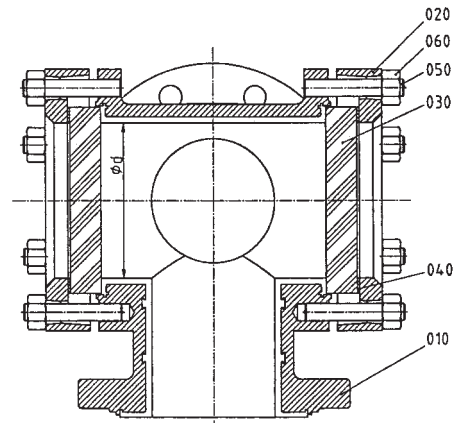
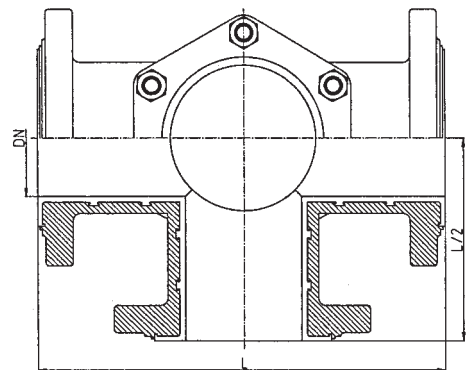
*Optional

ASG3 3-Way Sight Glass

Material Specification				
Item	Qty.	Designation	ASTM	DIN
10	1	body	Ductile Iron/FEP A395* Ductile Iron/PFA A395*	GGG-40.3 DIN EN 1563 GGG-40.3 DIN EN 1563
20	2	flange	Ductile Iron A395	GGG-40.3 DIN EN 1563
30	2	glass	Borosilicate-Glass	DIN 7080
40	2	flat gasket	Free of asbestos	DIN 3535-6
50	1 set	stud bolt	Stainless Steel A 193 B8	1.4301 DIN 17440
60	1 set	hexagon nut	Stainless Steel A 194 8	1.4301 DIN 17440

*Optional

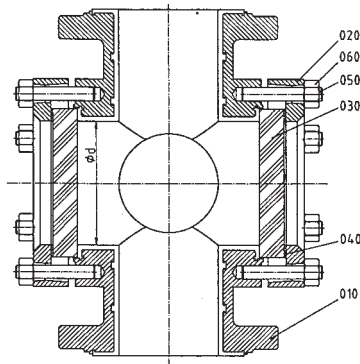
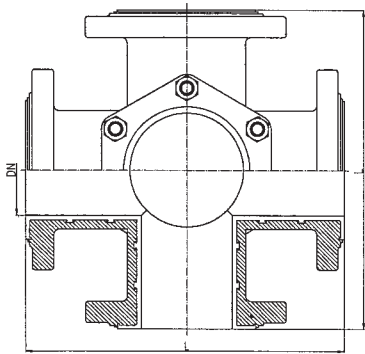
Dimensions				
Size in (mm)	L in (mm)	L ₂ in (mm)	ød in (mm)	Weight lbs (kg)
1 (25)	6 ⁵ / ₁₆ (160)	3 ⁷ / ₃₂ (80)	1 ²⁹ / ₃₂ (45)	13 ¹⁵ / ₁₆ (6.34)
2 (50)	9 ¹ / ₁₆ (230)	4 ¹⁷ / ₃₂ (115)	3 ¹ / ₃₂ (77)	33 ²¹ / ₃₂ (15.3)
3 (80)	12 ⁷ / ₃₂ (310)	6 ¹ / ₈ (155)	3 ¹⁵ / ₁₆ (100)	58 ³ / ₄ (26.7)
4 (100)	13 ²⁹ / ₃₂ (350)	6 ¹ / ₈ (175)	4 ²⁹ / ₃₂ (125)	61 ²⁹ / ₃₂ (28.1)



Connection dimensions according to DIN 2501-PN16 (ANSI B16.5 Class 150).

All dimensions are approximate and for illustration purpose only. For exact dimensions, request certified dimensional prints.

ASG4 4-Way Sight Glass

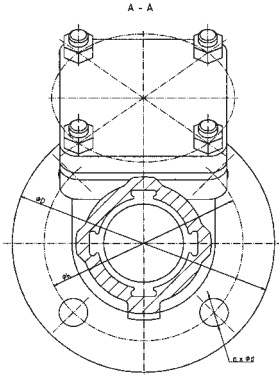
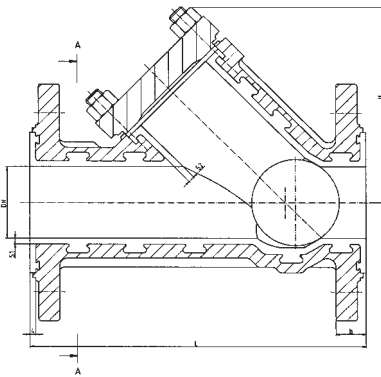


Connection dimensions according to DIN 2501-PN16 (ANSI B16.5 Class 150).

Material Specification				
Item	Qty.	Designation	ASTM	DIN
10	1	body	Ductile Iron/FEP A395 Ductile Iron/PFA A395	GGG-40.3 DIN EN 1563 GGG-40.3 DIN EN 1563
20	2	flange	Ductile Iron A395	GGG-40.3 DIN EN 1563
30	2	glass	Borosilicate-Glass	DIN 7080
40	2	flat gasket	Free of asbestos	DIN 3535-6
50	1 set	stud bolt	Stainless Steel A 193 B8	1.4301 DIN 17440
60	1 set	hexagon nut	Stainless Steel A 194 8	1.4301 DIN 17440

Dimensions				
Size	L	Ød	Weight	
in (mm)	in (mm)	in (mm)	lbs (kg)	
1 (25)	6 ⁵ / ₁₆ (160)	1 ²⁵ / ₃₂ (45)	16,5 (7,5)	
2 (50)	9 ¹ / ₁₆ (230)	3 ¹ / ₃₂ (77)	40,4 (18,38)	

ARL 45° (Y) Check Valves



Connection dimensions according to DIN 2501-PN16 (ANSI B16.5 Class 150).

Material Specification				
Item	Qty.	Designation	ASTM	DIN
10	1	body	Ductile Iron/FEP A395* Ductile Iron/PFA A395*	GGG-40.3 DIN EN 1563 GGG-40.3 DIN EN 1563
20	1	flange	Ductile Iron A395	GGG-40.3 DIN EN 1563
30	1	ball	PTFE - Solid Bal	Pure - PTFE1
40	4	stud bolt	Stainless Steel A193 B8	1.4301 DIN 17440
50	4	hexagon nut	Stainless Steel A194 8	1.4301 DIN 17440
60	1	flut gasket	Free of asbestos	DIN 3535-6

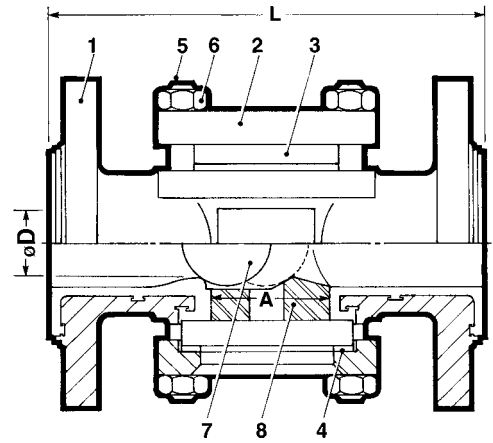
*Optional

Dimensions						
Size	L	b	D	k	S1	S2
in (mm)	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)
1 (25)	6 ⁵ / ₁₆ (160)	2 ¹ / ₃₂ (16.5)	4 ¹ / ₃₂ (115)	3 ¹ / ₃₂ (85)	1/8 (3)	5/16 (3.5)
1 1/2 (40)	7 ⁷ / ₁₆ (200)	2 ⁵ / ₃₂ (20)	5 ²⁹ / ₃₂ (150)	4 ¹ / ₃₂ (110)	5/32 (4)	5/32 (4)
2 (50)	9 ¹ / ₁₆ (230)	2 ⁵ / ₃₂ (20)	6 ¹ / ₂ (165)	4 ²⁹ / ₃₂ (125)	5/32 (4)	5/32 (4.5)
3 (80)	12 ³ / ₁₆ (310)	3 ¹ / ₃₂ (25)	7 ¹ / ₁₆ (200)	6 ⁵ / ₁₆ (160)	7/32 (5)	7/32 (5)

All dimensions are approximate and for illustration purpose only. For exact dimensions, request certified dimensional prints.

ARV/SG Check Valves/Sight Glass Combination

Dimensions/Weights						
Size in (mm)	L in (mm)		øD in (mm)	A in (mm)	Weight lbs (kgs)	
	ASME	DIN			ASME	DIN
1 (25)	6 (152.4)	6 ⁵ / ₈ (160)	1 (25)	1 ⁹ / ₃₂ (33)	10.4 (4.7)	11.7 (5.3)
1 ¹ / ₂ (40)	7 (178)	7 ⁷ / ₈ (200)	1 ¹ / ₄ (32)	1 ²⁵ / ₃₂ (45)	19.8 (9.0)	24.2 (11.0)
2 (50)	8 (203)	9 ¹ / ₁₆ (230)	1 ⁹ / ₁₆ (40)	2 ⁹ / ₁₆ (65)	23.8 (10.8)	26.9 (12.2)
3 (80)	9 ¹ / ₂ (241)	12 ⁷ / ₃₂ (310)	2 ⁹ / ₁₆ (65)	3 ⁵ / ₃₂ (80)	40.1 (18.2)	46.7 (21.2)
4 (100)	11 ¹ / ₂ (292)	13 ²⁵ / ₃₂ (350)	3 ⁵ / ₃₂ (80)	3 ¹⁵ / ₁₆ (100)	62.2 (28.2)	63.0 (28.6)



Connection dimensions according to DIN 2501-PN16 (ANSI B16.5 Class 150).

Material Specification				
Item	Qty.	Designation	ASTM	DIN
1	1	body	Ductile Iron ASTM A395, FEP/PFA*	GGG-40.3
2	1	flange	Ductile Iron ASTM A395	GGG-40.3
3	2	glass	Borosilicate Glass	DIN 7080
4	2	gasket	Asbestos free	DIN 3535/4
5	8-16	stud fastener	ASTM A193 B8	1.4301 DIN17440
6	8-16	hexagon nut	ASTM A194 8	1.4301 DIN17440
7	1	ball	PTFE	PTFE
8	2	ball guide	PTFE	PTFE

Flow Rates	
Size in (mm)	C _v (K _v)
1 (25)	14.5 (12.5)
1 ¹ / ₂ (40)	30.1 (25.9)
2 (50)	55.9 (48.1)
3 (80)	110.9 (95.4)
4 (100)	185.2 (159.3)

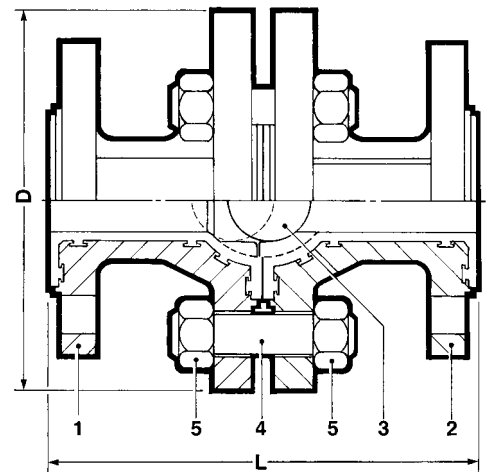
C_v = US gal/min at 1 psiΔP
(K_v = m³/hr at 1 bar ΔP)

*Optional

ARV2 Check Valves

Dimensions/Weights					
Size in (mm)	L in (mm)		D in (mm)	Weight lbs (kgs)	
	ASME	DIN		DIN	ASME
1/2 (15)	5 (130)	5 ¹ / ₈ (130)	4 ¹ / ₈ (105)	7.3 (3.3)	7.5 (3.4)
3/4 (20)	6 (150)	5 ²⁹ / ₃₂ (150)	4 ¹ / ₈ (105)	8.2 (3.7)	8.8 (4.0)
1 (25)	6 (152.4)	6 ⁵ / ₈ (160)	5 ¹ / ₂ (140)	12.1 (5.5)	14.3 (6.5)
– (32)	–	7 ⁹ / ₃₂ (180)	5 ²⁹ / ₃₂ (150)	–	18.1 (8.2)
1 ¹ / ₂ (40)	7 (178)	7 ⁷ / ₈ (200)	6 ¹ / ₂ (165)	20.5 (9.3)	24.2 (11.0)
2 (50)	8 (203)	9 ¹ / ₁₆ (230)	7 ⁹ / ₃₂ (185)	30.2 (13.7)	30.4 (13.8)
– (65)	–	11 ¹³ / ₃₂ (290)	8 ²¹ / ₃₂ (220)	–	47.8 (21.7)
3 (80)	9 ¹ / ₂ (241)	12 ⁷ / ₃₂ (310)	9 ²⁷ / ₃₂ (250)	65.9 (29.9)	67.2 (30.5)
4 (100)	11 ¹ / ₂ (292)	13 ²⁵ / ₃₂ (350)	11 ¹ / ₃₂ (285)	90.4 (41.0)	92.6 (42)
6 (150)*	14 (356)	14 (356)	15 ¹⁵ / ₁₆ (404)	167.7 (76.1)	171.9 (78)
8 (200)*	18 (457)	18 (457)	20 ¹ / ₄ (515)	365.9 (166.0)	341.6 (155.0)

*Face to Face Dimensions acc. to ANSI B16.10.



Connection dimensions according to DIN 2501-PN16 (ANSI B16.5 Class 150).

Material Specification				
Item	Qty.	Designation	ASTM	DIN
1	1	body piece	Ductile Iron ASTM A395, FEP/PFA*	GGG-40.3
2	2	body piece	Ductile Iron ASTM A395, FEP/PFA*	GGG-40.3
3	1	ball	PTFE	PTFE
4	4-12	stud fastener	ASTM A193 B8	1.4301 DIN17440
5	8-24	hexagon nut	ASTM A194 8	1.4301 DIN17440

*Optional

Flow Rates	
Size - in (mm)	C _v (K _v)
1/2 (15)	8.1 (7.0)
3/4 (20)	18.6 (16.0)
1 (25)	27.3 (23.5)
– (32)	46.8 (40.3)
1 ¹ / ₂ (40)	67.4 (58.0)
2 (50)	145.3 (125.0)
– (65)	208.3 (179.2)
3 (80)	316.6 (272.4)
4 (100)	573.8 (493.7)
6 (150)	1246.9 (1072.8)
8 (200)	2290.7 (1970)*

All dimensions are approximate and for illustration purpose only. For exact dimensions, request certified dimensional prints.

How to Order Atomac Lined Valves and Valve Equipment

How To Specify

Atomac Fully Lined Ball Valves

Ball valves shall be ASME Class 150 (PN16) fully fluorocarbon lined and have a two-piece ductile cast iron body to GGG-40.3 (ASTM A395) or stainless steel. Flanges shall conform to ASME B16.5 (DIN 2501) and face-to-face dimensions to ASME B16.10 (DIN 3202/F1) – long pattern for full port and short pattern for standard port. It shall have an integral universal actuator mounting pad in accordance with ISO 5211. The body liner must be held in place internally as well as on the flange face with “T” slot locking grooves and have full vacuum rating

capability. The ball must also be fully coated and be of the free floating design sealing on replaceable PTFE seats. The valve stem shall be a CD4MCu (1.4462) insert coated with PFA, have a cast in shoulder and be internally installed into a lined recess in the body to prevent “blowout.” The valve stem seal must be a deep stuffing box design with chevron stem packing and have independent packing adjustment by a gland with PTFE-graphite bearing. Product marking must be in accordance with MSS-SP25, permanently serialized and color coded for quick liner identification.

In order to follow Flowserve’s commitment to continuous improvement, we reserve the right to change product and performance specifications without notice.

How To Order

Example

4 in (100 mm) AKH2A full port valve with FEP liner and encapsulated ball.

4 • AKH2A • FEP

Ball Valves	Size	Model	Liner Material	Body Material	Options			Double Stuffing Box
					Special Ball for sizes 1”-3”			
					“V”	“C”	Ceramic	
Full port, ASME	1 in-6 in (25 mm-150 mm)	AKH2A	PFA, FEP, PP	DCI, CF8M	CV	CB	CER	DB/SB
Standard port, ASME	1 in-12 in (25 mm-305 mm)	AKH3	PFA, FEP, PP, PVDF	DCI, CF8M	CV*	CB	CER	DB/SB
Full port, DIN	½ in-12 in (13 mm-305 mm)	AKH2	PFA, FEP, PP	DCI, CF8M	CV	CB	CER	DB/SB
3-way	1 in-3 in (25 mm-80 mm)	AMP3	PFA	DCI, CF8M				
Tank drain	1 in x 2 in (25 mm-50 mm) 4 in x 6 in (100 mm-150 mm)	AKH6	PFA, FEP, PP	DCI, CF8M DCI, CF8M				
Glass pipe	1 in-4 in (25 mm-100 mm)	AKH7	PFA, FEP, PP	DCI, CF8M				
Other Equipment								
Check valve	½ in-8 in (15 mm-200 mm)	ARV2	PFA, FEP	DCI, CF8M				
45° “Y”	1 in-3 in (25 mm-80 mm)	ARL	PFA, FEP	DCI, CF8M				
Sight glass, 2-way	1 in-6 in (15 mm-150 mm)	ASG	PFA, FEP	DCI, CF8M				
Sight glass, 3-way	1 in-4 in (15 mm-100 mm)	ASG3	PFA, FEP	DCI, CF8M				
Sight glass, 4-way		ASG4	PFA, FEP	DCI, CF8M				
Check/sight glass	1 in-6 in (15 mm-150 mm)	ARVSG	PFA, FEP	DCI, CF8M				
Sampling	1 in-3 in (25 mm-80 mm)	APN/T	PFA, FEP	DCI, CF8M				
Sampling/sight glass	1 in-3 in (25 mm-80 mm)	APN/SG	PFA, FEP	DCI, CF8M				
Strainer	1 in-6 in (15 mm-150 mm)	ASF	PFA, FEP	DCI, CF8M				

*Note: For 1 in (25 mm) AKH3 valve, specify CV or 6 or 14.

Ceramic Lined Valves	Size	Model	Stem	Gasket
	1 in-4 in (15mm-100mm)	AKH5	C=ceramic S=316SS HC=Hastelloy® C	200=PTFE 350=Grafoil®

Example

2 in (50 mm) AKH5 ceramic lined valve with ceramic ball, 316 stainless steel stem and PTFE gasketry.

2 • AKH5 • S 200

© Hastelloy is a registered trademark of Hayes International.
© Grafoil is a registered trademark of Union Carbide.

Index

Actuation Options	7
AKH2 Full Port	3
Technical Data	14,15
AKH2A ANSI Full Port	2,3
Technical Data	17
AKH3 Standard Port	2,3
Technical Data	18
AKH5 Ceramic Lined Valves	5
Technical Data	21
AKH6 Fully Lined Tank Drain Valves	9
Technical Data	19
AKH7 for Glass Pipe Systems	8
Technical Data	20
AMP3 3-Way Lined Valves	4
Technical Data	19
APN/T and APN/SG Lined Sampling Valves	10
Technical Data	22
ARV/SG Lined Check Valves/Sight Glass	12
Technical Data	25
ARV2 and ARL Lined Check Valves	12
Technical Data	24,25
ASF Lined Strainer	13
Technical Data	16
ASG Lined Sight Glass	11
Technical Data	23,24
Chlorine Service	3
Contact Information	28
Control Valves,	
Available Options	3
Packages	3
Extended Packing	3
Pressure/Temperature Ratings	16
Vacuum/Temperature Ratings	16
V-Port Control Valves	6
How to Order	26
How to Specify	26

Selection, Installation, Operation and Maintenance

Although Flowserve can, and often does, provide general guidelines, it is obviously not possible to provide application specific data and warnings for all conceivable applications. The purchaser/end user must therefore assume the ultimate responsibility for the proper selection, installation, operation and maintenance of the products. Read the appropriate IOM available from Flowserve Ahaus GmbH before installing, operating or repairing any valve. The purchaser/end user should train its employees and/or contractors in the safe use of the Flowserve products in connection with the purchaser's manufacturing processes.

Design Changes

In order to follow Flowserve's commitment to continuous improvement, we reserve the right to change product and performance specifications without notice.



For actuating options see page 7.

Flowserve has the answer to your corrosion resistant, quarter-turn valving needs.

Clockwise from top right.

Durco[®] BTV-2000

PTFE or UHMWPE lined chemical service valve

Atomac[®]

Lined ball valves

- ANSI/ISO, standard and full port
- Specialty valves
- Valve products and accessories

Durco[®] SleeveLine[®]

Non-lubricated, PTFE-sleeved plug valves

- G4 Isolation
- G4E – DIN Mounting Pad
- G4 Marathon[™]
- TSG4 Severe Service

Durco[®] T-Line[®]

Non-lubricated, PTFE-lined plug valves

Big Max[®] Butterfly

High performance valves

Durco[®] Microfinish[™]

Alloy ball valves

Automax[®]

Valve automation systems

- Actuators
- Controls with smart technology
- Accessories



For more information, contact:



Flowserve Corporation
Flow Control Division
1978 Foreman Drive
Cookeville, Tennessee 38501
Phone: 931 432 4021
Fax: 931 432 3105

Or Consult Your Local Stocking Distributor

Flowserve Ahaus GmbH
Von Braun Strasse 19a
D-48683 Ahaus
Germany
Phone: + 49.2561.686.0
Fax: + 49.2561.68639

Flowserve Pte. Ltd.
12 Tuas Avenue 20
Republic of Singapore 638824
Phone: 65 862 3332
Fax: 65 862 2800