ADCERAX
ADVANCED CERAMICS

ENGINEERING PRODUCT CATALOG

Alumina Ceramic Ball Valve

O type isolation | Eccentric half ball | V type control

Valve selection, reference dimensions and the information needed for an engineering quotation.



Ceramic ball components shown for appearance reference. This image does not depict an assembled valve or identify a specific catalog model.

Engineering review edition

For internal review only. Not released for customer distribution, procurement or installation.

ADCERAX is a China-based advanced ceramics manufacturer for custom precision ceramic components.

HUNAN ATCERA CO.,LTD | ADC-CAT-ACBV-001 | Revision 01

Product page

01 SELECT THE PURCHASE UNIT

Choose the valve family

Start with the required duty and the item being purchased. The three series below identify different complete-valve families. Ceramic balls, seats and liners are a separate drawing or sample inquiry.

Family	Reference series	Listed DN	Initial selection route	Page
O type	AT-CVO-001 to 014	DN15–300	On/off isolation	4
Eccentric half ball	AT-CVP1-001 to 009	DN50–300	Eccentric closure arrangement	5
V type	AT-CVV1-001 to 012	DN15–200	Flow control inquiry	6
Ceramic components	Drawing or sample	By part drawing	Ball, seat or liner replacement	3 / 10

Use the catalog efficiently

Product appearance and assembly boundary · page 3

O type dimensions · page 4

Eccentric half ball dimensions · page 5

V type dimensions · page 6

Material reference · page 7

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Selection boundaries

A matching DN does not establish interchangeability. Compare face-to-face length, flange drilling and facing, actual bore, installation envelope and actuation interface against the approved model drawing.

Reference tables identify the published series. They do not establish stock, material grade, pressure at temperature, shutoff class, flow capacity or replacement compatibility. These are defined for the quoted configuration.

Begin with a nameplate or photograph

If the valve type is unknown, send the old valve nameplate, a clear photograph or a sketch, together with medium, approximate size, duty and quantity. A complete manufacturing drawing is not required for the first discussion.

02 PRODUCT FORM AND ASSEMBLY

Ceramic components and valve assembly



Bare ball, seat and sleeve forms. Photographs show visible form only; grade, dimensions and fit must be specified separately.

Published assembly material reference

This webpage parts list is not a model-specific BOM. Its 10 positions are not mapped to the illustrations on pages 4 and 6, which show callouts through 12. “Gland Flang” is retained as published; confirm the part name and matched assembly key.

Position	Part description as published	Material as published
1	Valve Body	WCB
2	Middle Body	WCB
3	Gland Flang	Engineering Ceramic
4	Valve Seat	Engineering Ceramic
5	Ball	Engineering Ceramic
6	Bushing	Engineering Ceramic
7	Stem	2Cr13
8	Packing	Flexible Graphite
9	Packing Gland	WCB
10	Lever	WCB

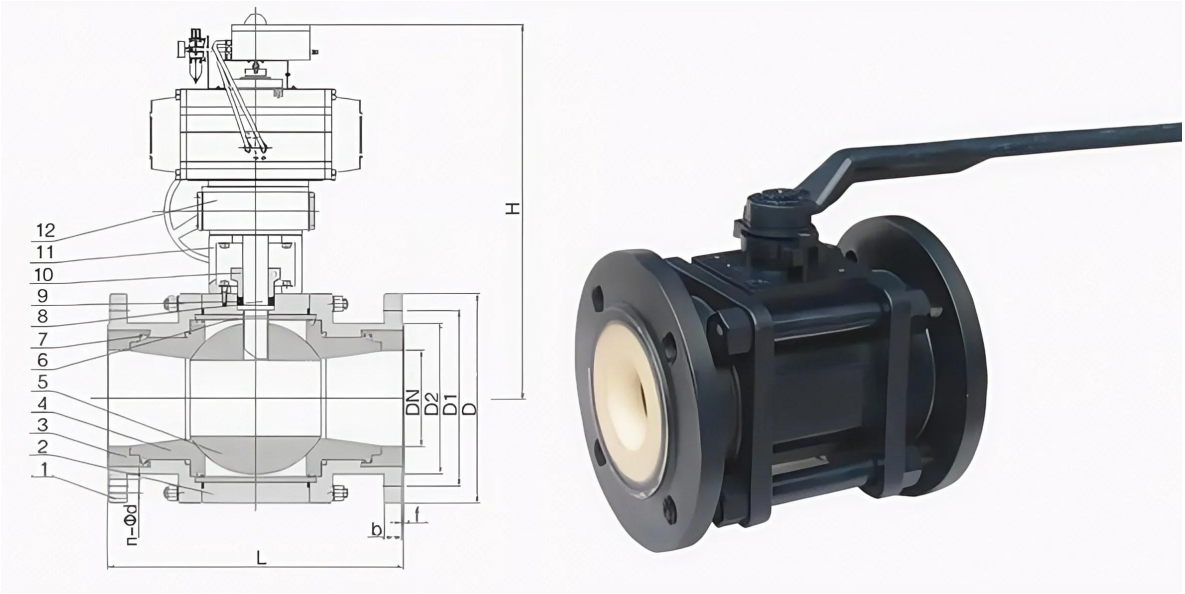
Assembly definition before order

Confirm the material and grade of each wetted part, the body and stem materials, packing and seals, and the scope of supply. A ceramic trim material value does not establish a complete-valve rating.

03 REFERENCE DIMENSIONS

O type ceramic lined ball valve

AT-CVO-001 to AT-CVO-014 | Listed range DN15–300



Published series illustration, not to scale. The figure shows an actuated section and a lever-operated exterior; these are not a confirmed common configuration.

Item No.	DN	PH* (MPa)	D (mm)	D1 (mm)	D2 (mm)	C (mm)	H (mm)	n-d
AT-CVO-001	15	1.6	130	95	45	14	180	4-⌀ 14
AT-CVO-002	20	1.6	140	105	55	16	190	4-⌀ 14
AT-CVO-003	25	1.6	150	115	65	16	220	4-⌀ 14
AT-CVO-004	32	1.6	165	135	75	18	235	4-⌀ 18
AT-CVO-005	40	1.6	180	145	85	18	255	4-⌀ 18
AT-CVO-006	50	1.6	203	160	100	20	270	4-⌀ 18
AT-CVO-007	65	1.6	220	180	120	20	310	4-⌀ 18
AT-CVO-008	80	1.6	250	195	135	20	370	8-⌀ 18
AT-CVO-009	100	1.6	280	215	155	22	430	8-⌀ 18
AT-CVO-010	125	1.6	320	245	185	22	510	8-⌀ 18
AT-CVO-011	150	1.6	394	280	210	24	590	8-⌀ 23
AT-CVO-012	200	1.6	457	335	265	24	750	8-⌀ 23
AT-CVO-013	250	1.6	533	**506**	320	26	850	12-⌀ 23
AT-CVO-014	300	1.6	610	**460**	375	30	920	12-⌀ 25

* PH is retained from the source table; it is not silently relabeled PN. The listed 1.6 is a source reference and is not a complete pressure–temperature rating.

Drawing review: confirm the meanings of D/D1/D2/C/H and n-d against the model drawing. The source figure uses b and f, while the table uses C and omits L. C-to-b mapping and face-to-face length are not established.

Check AT-CVO-013 D1 = 506 mm and AT-CVO-014 D1 = 460 mm before installation use. Original values are retained for this review.

04 REFERENCE DIMENSIONS

Eccentric half ball valve

AT-CVP1-001 to AT-CVP1-009 | Listed range DN50–300

Use this family when the inquiry calls for an eccentric half-ball arrangement. Confirm flow direction, seat engagement, solids behavior and drive requirements for the proposed assembly. The family name alone does not establish suitability for a medium.

Dimension definition

The table preserves the source fields H, L, D, D1, D2, n-d, C and F. This review edition does not include an approved dimension key for this series. Use the table for reference identification only; dimensional interpretation requires the corresponding model drawing.

Item No.	DN	PN* (MPa)	H (mm)	L (mm)	D (mm)	D1 (mm)	D2 (mm)	n-d	C (mm)	F (mm)
AT-CVP1-001	50	1.6	230	124	165	125	100	4-⌀ 18	16	3
AT-CVP1-002	65	1.6	237	145	185	145	120	4-⌀ 18	18	3
AT-CVP1-003	80	1.6	260	165	200	160	135	8-⌀ 18	20	3
AT-CVP1-004	100	1.6	270	194	220	180	156	8-⌀ 18	20	3
AT-CVP1-005	125	1.6	320	210	250	210	185	8-⌀ 22	22	3
AT-CVP1-006	150	1.6	340	229	285	240	211	8-⌀ 22	26	3
AT-CVP1-007	200	1.6	390	243	340	295	265	8-⌀ 23	26	3
AT-CVP1-008	250	1.6	420	297	405	355	319	8-⌀ 26	30	3
AT-CVP1-009	300	1.6	510	338	460	410	375	8-⌀ 26	30	4

* PN (Mpa) is the published field name, shown here with standard MPa unit capitalization. The 1.6 entries do not supply the assembly pressure–temperature curve or allowable differential pressure.

Resolve the installation interface

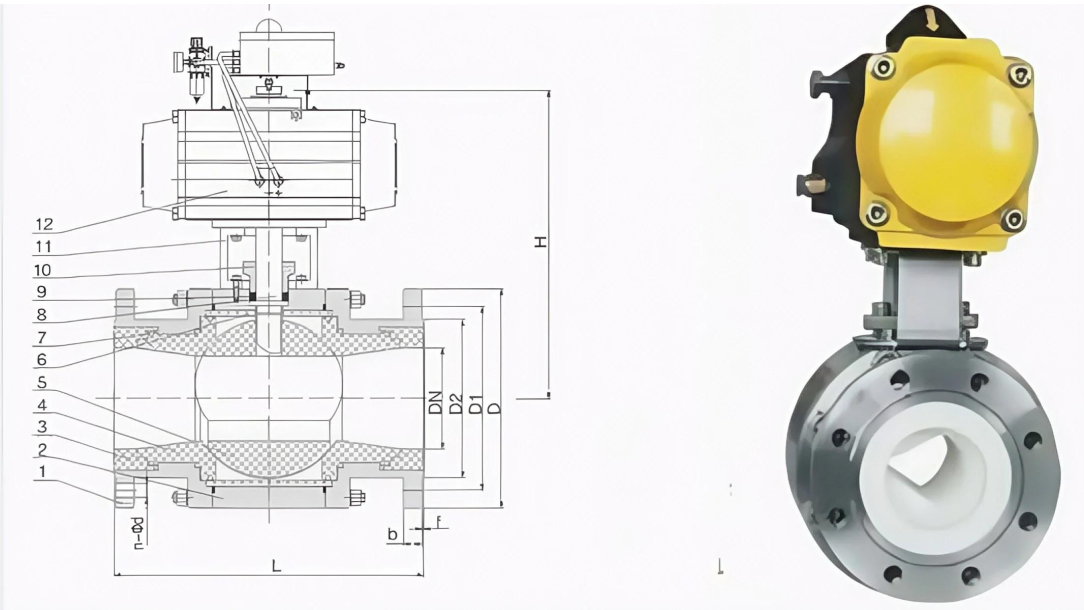
Required input	What the approved drawing must establish
End connection	Flange standard and edition, facing, bolt pattern, bolt or stud details and gasket interface.
Installation envelope	Face-to-face length, overall and operating height, clearance for the drive and access for maintenance.
Flow and closure	Permitted flow direction, seat and closure geometry, bore and shutoff requirements.
Operation	On/off or modulating duty, cycle rate, maximum differential pressure and actuator sizing basis.

No one-for-one replacement or OEM compatibility is established by a matching DN.

05 REFERENCE DIMENSIONS

V type ceramic lined control valve

AT-CVV1-001 to AT-CVV1-012 | Listed range DN15–200



Published series illustration, not to scale. It does not define a verified V-port angle, flow characteristic or actuator configuration for each item.

Item No.	DN	NPS*	H (mm)	L (mm)	D (mm)	D1 (mm)	D2 (mm)	n-d*	b (mm)	f (mm)
AT-CVV1-001	15	1 2"	170	108	90	60.3	34.9	4-M12	11.6	2
AT-CVV1-002	20	3 /4"	180	117	100	69.9	42.9	4-M12	13.2	2
AT-CVV1-003	25	1"	185	127	110	79.4	50.8	4-M12	14.7	2
AT-CVV1-004	32	1-1/4"	220	140	115	88.9	63.5	4-M12	16.3	2
AT-CVV1-005	40	1-1/2"	230	165	125	98.4	73	4-M12	17.9	2
AT-CVV1-006	50	2"	247	178	150	120.7	92.1	4-M16	19.5	2
AT-CVV1-007	65	2-1/2"	270	190	180	139.7	104.8	4-M16	22.7	2
AT-CVV1-008	80	3"	310	203	190	152.4	127	4-M16	24.3	2
AT-CVV1-009	100	4"	355	229	230	190.5	139.7	4-M16	24.3	2
AT-CVV1-010	125	5"	430	356	255	215.9	157.2	4-M20	24.3	2
AT-CVV1-011	150	6"	490	394	280	241.3	185.7	4-M21	25.9	2
AT-CVV1-012	200	8"	590	457	345	298.5	215.9	4-M22	29	2

* Source notation retained: AT-CVV1-001 NPS “1 2””; AT-CVV1-002 “3 /4””; AT-CVV1-011/012 n-d “4-M21” / “4-M22”. These fields require drawing confirmation; no replacement values are inferred.

The table has no pressure field. Control selection also needs Cv/Kv, flow versus opening, required turndown, allowable differential pressure, leakage acceptance and actuator/positioner data.

For this review, use the series image as a reference only. The complete symbol key and model geometry remain subject to drawing review.

06 MATERIAL SELECTION REFERENCE

Alumina trim material grades

Material reference values from the supplied webpage. They are not assigned to individual valve models and do not establish assembly pressure, temperature, leakage, flow capacity or cycle life.

Property and condition	AD-ALU-999	AD-ALU-997	AD-ALU-995	AD-ALU-990	AD-ALU-960	AD-ALU-950
Al_2O_3 content wt%, nominal	99.90	99.70	99.50	99.00	96	95
Bulk density g/cm³, typical	3.94	3.94	3.90–3.92	3.80–3.91	3.70	3.75
Flexural strength MPa, 20 °C, typical	315–340	330	320–350	300–320	300	280
Compressive strength MPa, 20 °C, typical	2558–2900	2500	2400	2400	2000	2000
Young's modulus GPa, typical	359–375	370	365	355	275 (at 20 °C)	340
Fracture toughness KIC MPa·m½, method-dependent	3.8–4.2	3.6	3.5	3.3	3.5 (at 20 °C)	3.0
Thermal conductivity W/(m·K), typical	35–42 at 25 °C	35–40 at 25 °C	30–38 at 25 °C	24 at 25 °C	25 at 20 °C	18–25 at 25 °C
Mean CTE 10^{-6}/K, stated range	7.6 (25–800 °C)	7.6 (25–800 °C)	7.6 (25–800 °C)	7.2 (25–800 °C)	8.2 (25–1000 °C)	7.6 (25–800 °C)
Water absorption %, selection limit unless stated	≤0.01	≤0.05	≤0.10	≤0.10	≈0, typical	≤0.20
Mohs hardness typical	9	9	9	9	Not provided	9
Vickers hardness HV1, 1 kgf, typical	Not provided	Not provided	Not provided	Not provided	1600	Not provided
Color visual	Ivory	Ivory	Ivory	Ivory	White	Ivory / white
Service temperature guide °C, application-dependent	1750	1700	1650	1600	1600 max in air	1400

Nominal composition, typical properties and selection limits retain the source distinctions. "Not provided" is not zero. No grade is selected solely by purity or maximum material temperature.

Confirm the actual trim specification

Identify ball, seat and liner grade separately where necessary. Record the full wetted BOM, chemical composition of the medium, solids content and particle size, temperature and pressure cycles, and required inspection evidence. Any material change must be reviewed with the sealing pair and assembly.

07 OPERATING CONDITIONS

Define the service before selecting trim

The application categories below guide the technical brief. They are not an assurance that any listed model will perform in a particular process.

Application under review	Information that changes selection
Mining and mineral slurry	Solids concentration and basis, particle size distribution and maximum particle size, particle hardness, flow, line pressure, differential pressure and slugging.
Chemical processing	Medium name, concentration and pH; normal and cleaning chemistry; temperature range, exposure time and all wetted materials.
FGD and limestone slurry	Solids loading, chloride content, slurry temperature, deposits and cycling frequency; body, packing and trim compatibility.
Powder handling	Particle size, conveying method and velocity, moisture, contamination limits, discharge frequency and purge requirements.
Laboratory and pilot plant	Process fluid, contamination acceptance, temperature and pressure cycles, installation space and required shutoff or control behavior.

Match actuation to the assembly

State manual, pneumatic or electric operation; on/off or modulating duty; required fail position; available air pressure or supply voltage; control signal and feedback; stroke time and cycling frequency. Actuator sizing must use the proposed assembly torque basis and service conditions.

Additional inputs for V type control

Provide minimum, normal and maximum flow; upstream and downstream pressure; fluid properties; required control range; allowable noise or vibration where relevant; and the positioner/control interface. Request the proposed flow characteristic and Cv/Kv basis before completing selection.

Replacement projects

Include the existing valve manufacturer, model, nameplate and drawing revision as identification inputs. Approval requires a check of actual interfaces, ratings and operation; no OEM substitution is implied by these references.

08 ACCEPTANCE AND SUPPLY

Agree the order and inspection basis

Define acceptance with the quoted configuration. The list below is an order-planning checklist; it does not claim that a test or certificate has already been completed for these models.

Order element	Define before purchase
Configuration	Catalog reference or drawing revision, valve family, actual bore, ends, face-to-face length, actuation and accessories.
Material identity	Body, stem, packing and every wetted component; ceramic grade, identification method and required material documents.
Dimensional acceptance	Critical installation dimensions, flange drilling, tolerances, sealing interfaces and the approved dimensional drawing.
Pressure and shutoff	Shell and seat test requirements, test medium, pressure, duration, direction, acceptance limit and applicable specification.
Control and torque	Required control behavior, flow data, breakaway/running torque basis, fail action and functional checks.
Traceability and reports	Part/revision identity, lot or serial identification, sampling plan, report format and any witness requirements.
Packing and delivery	Protection of ceramic surfaces and valve ends, assembly support, packing labels, quantity, spare parts, destination and schedule.

Installation and maintenance planning

Use the approved valve instructions and project procedures for lifting, alignment, flange assembly, testing and commissioning. Protect the ceramic trim from impact and avoid applying pipe loads to the body. Confirm flow direction and actuator clearance before installation.

For service planning, specify compatible flushing media, inspection access and replacement parts. A rising torque or leakage trend requires investigation under the maintenance procedure; no generic service interval or life guarantee is implied.

Repeat supply

Reference the accepted drawing, material specification and configuration revision on repeat orders. Review changes to process conditions or interfaces before reusing an earlier selection. Availability, quantity, price and schedule are quotation-controlled.

09 REQUEST AN ENGINEERING QUOTATION

Send the valve requirement

A short, identifiable first inquiry is enough to begin. State whether you need a complete valve or ceramic components, then use either route below.

Existing reference or replacement

Provide the catalog item or old-valve nameplate/photo, valve family if known, DN or approximate interface size, medium, operating temperature and pressure, on/off or control duty, quantity and destination.

New drawing or ceramic component

Provide the drawing, sketch or sample details and revision; material request; dimensions and units; mating parts; critical tolerances and sealing surfaces; operating conditions; quantity and destination. Identify whether the scope is a ball, seat, liner, matched trim set or complete assembly.

Copy into your inquiry

Field	Include
Identification	Catalog ADC-CAT-ACBV-001 Rev 01; item or drawing reference; valve family or component.
Duty and medium	On/off or modulating; fluid/solid description, concentration, solids loading and particle size.
Operating envelope	Normal and maximum temperature, inlet/outlet pressure, differential pressure and flow.
Interfaces	DN/NPS, actual bore, connection standard, face-to-face length and installation envelope.
Actuation and acceptance	Drive and fail action, utilities/signals, shutoff requirement and requested tests/documents.
Supply	Quantity, spares, repeat demand, destination and target schedule.

Send the technical brief for engineering review and quotation

info@adcerax.com

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Alumina ceramic ball valve product page

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