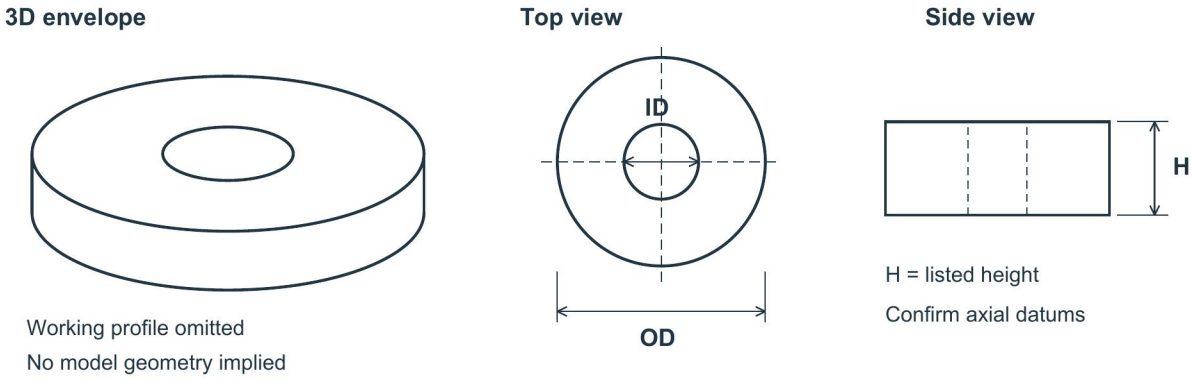
ADCERAX®

ENGINEERING PRODUCT CATALOG | REVIEW COPY

Zirconia Ceramic Dispersion Discs

For bead and sand mills

Match the disc to the mill shaft, working profile and slurry duty. Compare five published size references, select the zirconia route and define the part for quotation.



Dimension convention only. Not to scale. OD = outer diameter; ID = bore; H = listed height. Working profile and measurement datums follow the order drawing.

Start with the part that must fit

A dispersion disc activates grinding beads and circulates slurry. Its bore, hub, slot or tooth pattern and position in the disc group govern the replacement definition. A matching outside diameter alone does not establish interchangeability.

Find your specification

Published disc sizes 2
Material selection 3
Drawing and shaft interface 4
Milling duty and replacement review 5
Inspection and supply definition 6
Request a disc quotation 7

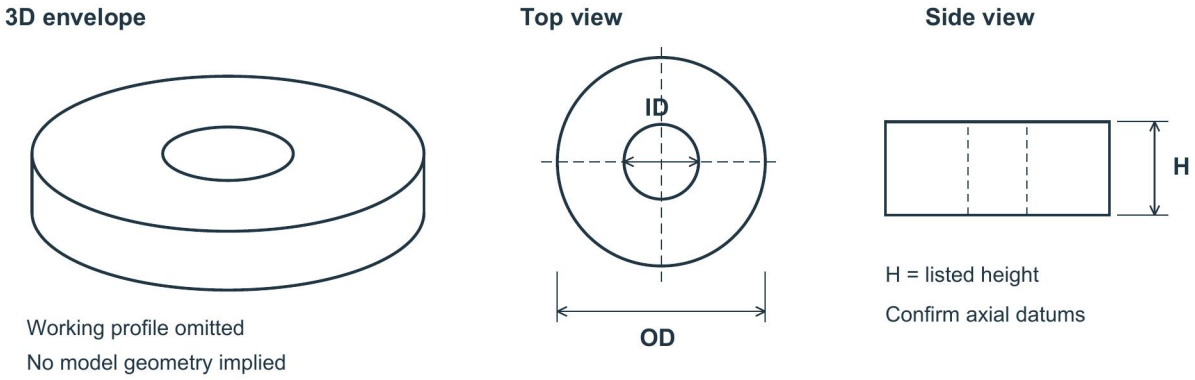
ADC-CAT-ZDD-001 | Revision 01

HUNAN ATCERA CO.,LTD | China-based advanced ceramics manufacturer

02 DIMENSIONS

Published disc size references

Select an exact row as the starting reference. These five combinations are separate listed sizes; the minimum and maximum values do not define an unrestricted custom size range.



Dimension convention only. Not to scale. OD = outer diameter; ID = bore; H = listed height. Working profile and measurement datums follow the order drawing.

Catalog reference	OD (mm)	ID (mm)	Height H (mm)
AT-YHG-SM001	90	30	26
AT-YHG-SM002	96	36	24
AT-YHG-SM003	100	45	30
AT-YHG-SM004	140	80	45
AT-YHG-SM005	165	85	50

Status: published catalog size references. The quotation and order drawing define the final material, profile, tolerances, supply condition and availability.

Read height against the drawing

H retains the published Height field. Confirm its two axial measurement datums and whether the dimension includes a hub or other raised feature. Do not use H as working thickness without that drawing definition.

Complete the replacement definition

Add the mill maker and model, disc position, direction of rotation, shaft and spacer arrangement, and the slot, tooth or vane profile. Specify bore fit and the critical faces used to check runout.

Choose the supply unit

Identify whether the inquiry covers one ceramic disc or a matched group. The shaft, sleeve, spacers, fasteners, chamber and grinding beads are separate items unless the quotation explicitly includes them.

03 MATERIAL REFERENCE

Select the zirconia material

Review three structural zirconia routes against disc geometry, bead contact and slurry chemistry. Confirm the exact grade in the material specification; the AT reference alone does not assign a grade.

Property and basis	3Y-TZP AD-ZRO-3Y	Mg-PSZ AD-ZRO-MG	Ca-PSZ AD-ZRO-CA
Bulk density, g/cm³ Typical	6.00-6.08	5.70-5.80	5.60-5.75
Flexural strength, MPa 20 °C, typical	800-1000	500-755	400-600
Vickers hardness, GPa Typical	12.5	11.5	10-11
Fracture toughness, MPa·√m 20 °C, typical, method-sensitive	7.2-9.0	6-12	5-8

Basis: ADCERAX Zirconia Material Selection Data, Rev 06, pages 1-2. Values describe the corresponding dense material specimens; they are not guaranteed finished-disc values.

3Y-TZP

Yttria-stabilized, predominantly tetragonal zirconia. This route has the highest typical flexural-strength interval in this table. Use strength as an initial screening input, then check the project test basis, disc geometry and mounting stresses.

Mg-PSZ

Magnesia-stabilized, partially stabilized zirconia. Its listed toughness interval overlaps 3Y-TZP and Ca-PSZ. Do not rank service life or impact resistance from that interval alone; request comparable test conditions and qualify the finished assembly.

Ca-PSZ

Calcia-stabilized zirconia. Check the lower listed strength interval against the agreed material requirement before selection. Slurry compatibility still needs project evidence; this table does not rank chemical resistance or authorize substitution between stabilizer systems.

Qualify the finished assembly

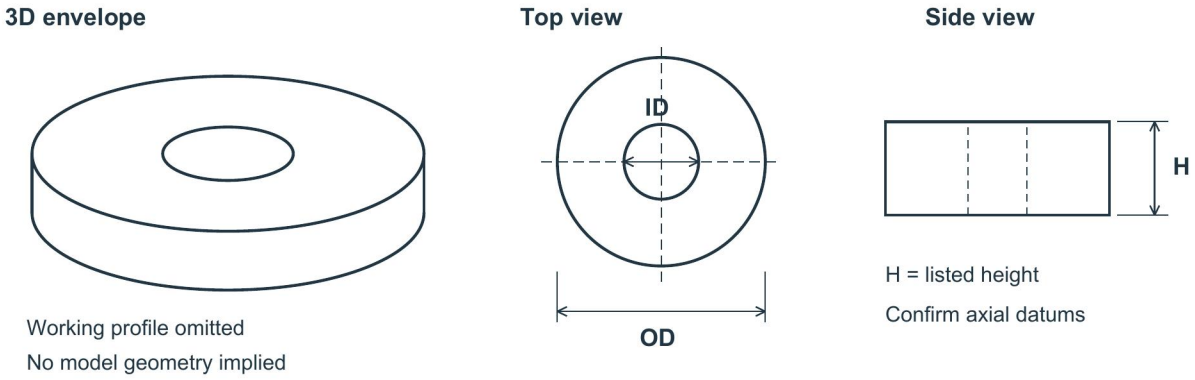
Material data cannot set allowable rpm, torque, bead loading, wear rate, contamination or service life. Those requirements depend on the disc, shaft connection, disc group, slurry and operating program.

When hardness or toughness is part of purchase acceptance, agree the method, specimen condition and test settings. Material identification and finished-disc acceptance are separate checks.

04 CUSTOM AND REPLACEMENT PARTS

Define the drawing and shaft fit

Use a controlled drawing or an identified sample to define the disc. A worn sample helps identify the form; worn surfaces cannot establish the original nominal geometry by themselves.



Dimension convention only. Not to scale. OD = outer diameter; ID = bore; H = listed height. Working profile and measurement datums follow the order drawing.

Drawing field	What to specify
OD and working profile	Outer diameter; slot, tooth or vane geometry; maximum rotating envelope and chamber clearance.
ID and drive interface	Bore size and fit; any steps, keyway or pin features; shaft or sleeve contact length and mating material.
Height H and hub	Axial datum faces; total and working dimensions; hub size and support faces, where present.
Slot or tooth definition	Count, spacing, orientation, width, depth, root radii and edge requirements on the actual drawing.
Geometry and finish	Datums, tolerances, flatness, parallelism, bore-to-profile runout and functional-face finish.
Disc group	Quantity, axial positions, spacing, spacers, rotation direction, assembly order and mounting procedure.

These are RFQ inputs, not standard feature or tolerance promises. The schematic explains envelope notation only; it does not classify slotted, toothed or vane designs.

Prevent a fit-only substitution

Check the bore, support faces and adjacent clearances together. An equal OD, a similar photograph or the same mill model does not establish that two discs have the same working profile or mounting fit.

05 APPLICATION AND REPLACEMENT REVIEW

Match the disc to the milling duty

Review the disc as part of the wetted and rotating assembly. Define the process inputs below before using a material comparison to select a replacement.

Project context	Disc decision and validation inputs
Coatings and pigments	Slot/profile geometry, color-change surfaces, slurry chemistry, bead grade, cleaning method and color or metal limits.
Ink and fine particles	Bore and stack fit, disc spacing, wetted finish, viscosity, target particle distribution and residue measurement.
Battery or electronic slurry	Disc, bead, liner and shaft-sleeve contact materials; solvent, solids, temperature and target contamination elements.
Mill OEM or second source	Original part identity, mill model, disc position, shaft connection, group geometry and first-article fit.

Operating information for review

Provide continuous and peak speed, torque or shaft power, startup and stop cycles, bead material and size, loading, slurry solids and viscosity, flow or pressure, cooling and operating temperature.

For a trial, keep bead grade, slurry, loading, speed program and cleaning conditions comparable. Agree the particle-size, wear and contamination measurements before interpreting the result.

Record the condition of a worn disc

Profile wear. Photograph slot edges, teeth and outer diameter from repeatable views; mark the measurement positions and changes from the drawing.

Bore or hub damage. Record contact marks, looseness, chipped seating faces and the condition of the mating shaft, sleeve and fasteners.

Cracks or abnormal vibration. Follow the equipment shutdown procedure and inspect the disc and mounting system before restart. Review the observed defect and operating record together.

Use project-specific inspection intervals and replacement limits. No universal service-hour, speed or wear limit is assigned by this catalog.

06 FIRST ARTICLE AND REPEAT ORDERS

Agree inspection and supply

Define what will be measured on the ceramic disc, what will be checked after assembly and what must be qualified in the milling process. Agree the evidence and acceptance limits with the order.

Acceptance area	Order definition and requested record
Identity and material	AT reference or drawing revision; selected zirconia grade; batch identification and required material documentation.
Disc dimensions	OD, ID, height datums, hub and working profile; critical tolerances, measurement locations and inspection report.
Surface and edges	Functional-face finish; cracks, chipping, slot/tooth roots and bore-edge criteria; agreed visual and dimensional method.
Assembled fit	Shaft support, disc spacing, fastening procedure, runout and balance criteria for the defined assembly state.
Milling trial	Bead and slurry conditions; operating program; sampling, blank, wear, contamination and particle-size acceptance as required.

Protect the functional features

Identify the bore, hub faces, slot or tooth edges and outer rim that need separation and cushioning in transit. Agree packing and marking for the purchased geometry and quantity, including disc-group identification where relevant.

Control the repeat order

Reference the accepted drawing revision, material grade, first-article record and agreed inspection criteria. Record any change to disc profile, shaft fit, slurry, bead grade or operating program before treating a reorder as unchanged.

Confirm commercial details in the quotation

State the trial and repeat quantities, destination and target schedule. MOQ, price, delivery timing, packing and the inspection-document scope are confirmed for the order.

The entries above define requested checks and records. They do not claim that every disc or batch has undergone every listed test.

07 RFQ

Request a dispersion disc quotation

Start with the information you already have. Send an AT reference or drawing, quantity and the mill context; the remaining definition can be completed during engineering review.

Path 1 Use a published size reference

Quote AT-YHG-SM001, SM002, SM003, SM004 or SM005 together with this catalog revision. Add quantity, material requirement, disc position, working profile and any difference from the listed dimensions.

Path 2 Use a drawing or old part

Attach the drawing or 3D model and revision. If starting with an old part, send clear top, side and bore views and mark worn areas. Include the dimensions that can be measured and identify the original mounting arrangement.

Copy these fields into your inquiry

RFQ field	Your requirement / attachment
Part reference	AT reference or drawing/revision: _____
Mill and fit	Maker/model; disc position; bore/hub connection; disc spacing; rotation: _____
Material and drawing	Zirconia grade; OD/ID/H datums; working profile; tolerances/finish: _____
Operating duty	Speed; torque/power; bead grade/size/loading; slurry chemistry/solids/viscosity; temperature; present issue: _____
Acceptance	First-article checks and documents: _____
Supply	Trial/repeat quantity; packing; destination; target schedule: _____

Send your disc reference or drawing

info@adcerax.com

Reference: ADC-CAT-ZDD-001 | Rev 01

We review the part identity, material, geometry and operating requirements before confirming the quotation scope.

Product page | Contact ADCERAX

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