ADCERAX

ENGINEERING PRODUCT CATALOG | AT-YHG-ZJ1001

Zirconia Ceramic Jigs and Fixtures

Drawing-defined tooling for locating, supporting and guiding parts

Define the datum, contact face and load path before choosing the ceramic geometry. This catalog helps tooling, inspection and assembly teams prepare a usable specification for quotation.



Multi-hole zirconia fixture form with a central opening. Photograph shows visible geometry; material grade, dimensions and supply scope follow the agreed drawing.

Custom by drawing

AT-YHG-ZJ1001 identifies the inquiry route. It does not define a fixed-size stock item or a complete fixture assembly. Specify whether you need a ceramic part, a matched set, or an assembly for review.

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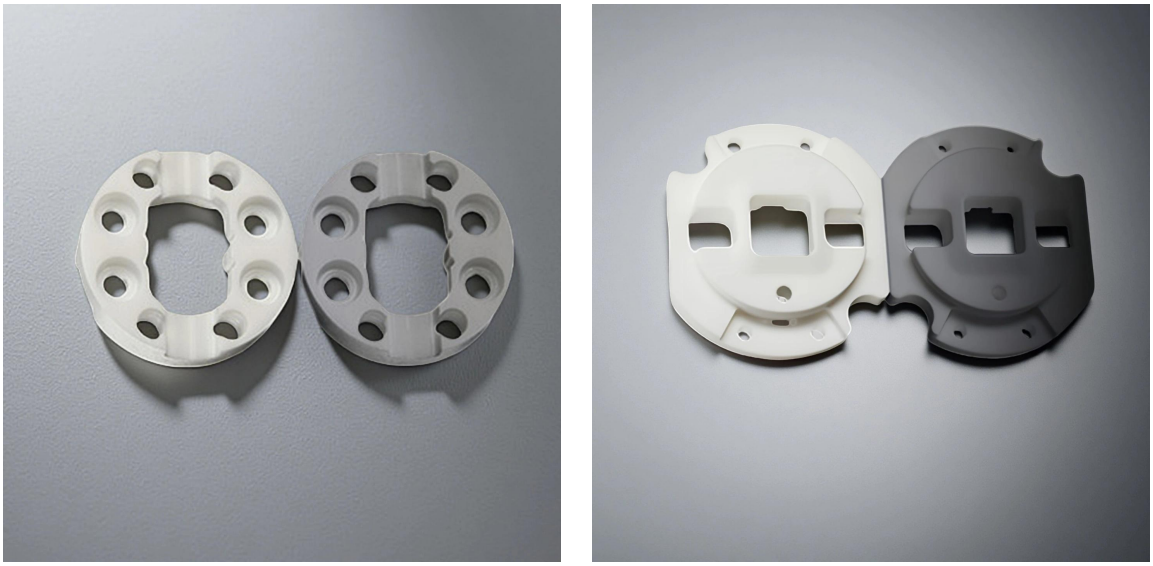
ADCERAX is a China-based advanced ceramics manufacturer for custom precision ceramic components.

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Choose the part and supply scope

Start with the ceramic function in the fixture. A locating element sets position; a clamp holds the workpiece against its supports. The workpiece, base and clamp sequence determine the assembly result.



Left: multi-hole forms with central openings. Right: plate-like forms with windows and edge openings. Colors do not establish grade, conductivity or interchangeability. Photographs show representative forms, not a fixed configuration for every order.

Purchase scope	Define before quotation
Ceramic part	Part drawing and revision, functional faces, material grade, mating base and quantity.
Matched set	Each part drawing, set quantity, orientation, matching requirements and individual identification.
Assembly for review	Ceramic and non-ceramic bill of materials, mounting interface and responsibility for assembly and validation. Metal bases and clamps are included only when agreed.

Route the engineering brief

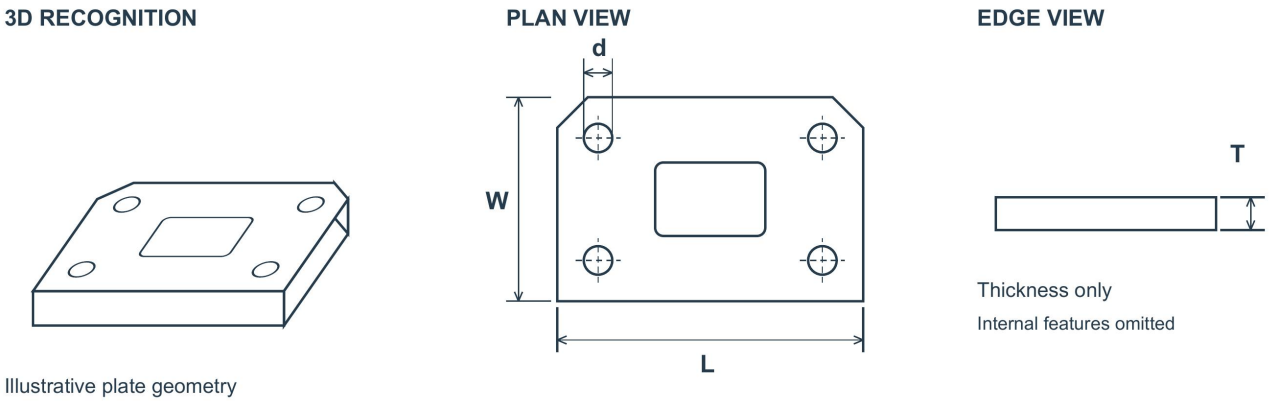
Your task	Most useful application inputs
Tooling or automation	Workpiece and base geometry, datum scheme, contact points, clamp direction, insertion impact and coolant.
Dimensional inspection	Measurement datums, probe or optical access, support balance, clamp sequence and repeat-loading acceptance.
Electrical test or assembly	Contact location and pressure, voltage and frequency, humidity, cleaning process and contamination limits.
Replacement or thermal duty	For replacement: unworn reference dimensions and failure history. For thermal use: full temperature cycle, atmosphere and mating materials.

These are application review routes. Equipment fit, repeatability, electrical safety and thermal suitability require the project-specific definition.

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Define geometry on the drawing

Send a dimensioned drawing and, where available, a 3D model. Identify which faces locate the workpiece and which attach to the base. The diagram below explains input notation using a generic plate, not the photographed product profile.



Illustrative plate geometry

Not to scale. Example for RFQ notation; the project drawing defines the actual part.

Drawing input	What to specify
L, W and T | mm	Overall length, width and thickness, with tolerances and the measurement surfaces identified. State the drawing unit explicitly.
d | mm	Diameter and tolerance for each circular hole. Identify hole count, through/blind condition, depth and any counterbore separately.
Hole and feature locations	Coordinates or spacing from the selected datums; orientation, position tolerance and all non-circular openings.
Profile and local details	Full outline, window or slot profile, steps, local thickness, edge breaks and radii. Define details in the actual drawing views.
Datum scheme	Primary, secondary and tertiary datum features (A/B/C); contact faces, prohibited contact zones and assembly orientation.
Geometric tolerances	Applicable flatness, parallelism, perpendicularity and position limits; include roundness or cylindricity for locating pins.
Surface and interface	Functional-face roughness and measurement method; mating geometry, clearance/interference, inserts or adhesive layer if used.

Dimensions are customer inputs

No universal size, tolerance or finish is assigned to AT-YHG-ZJ1001. The accepted drawing and quotation define the ordered part. Include pin, rail, contoured nest or other geometry in its own drawing views rather than adapting this plate example by assumption.

If only a used part is available, send photographs with a scale and identify worn areas, usable datums and the required fit. The sample alone may not preserve the original locating geometry.

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Select the grade for the actual duty

AD-ZRO-3Y is the initial material route to discuss for white structural locating components. Confirm the ordered grade against the drawing and service conditions; appearance and catalog number do not establish the material.

AD-ZRO-3Y material selection values

Typical reference values for dense sintered 3Y-TZP material. These are not finished-fixture acceptance limits or assembly performance guarantees.

Property	Typical reference	Condition or limitation
Bulk density	6.00-6.08 g/cm³	Dense sintered material
Flexural strength	800-1000 MPa	20 °C; specimen and test method dependent
Vickers hardness	12.5 GPa	Agree test force, dwell and surface condition
Fracture toughness	7.2-9.0 MPa·$m^{0.5}$	20 °C; method dependent
Young's modulus	200-220 GPa	20 °C
Thermal conductivity	3 W/(m·K)	20 °C
Linear thermal expansion	11 × 10^{-6}/K	40-80 °C only
Volume resistivity	>10^{14} Ω·cm at 20 °C 10^{6}-10^{8} Ω·cm at 300 °C	Two material reference conditions; not a complete temperature curve

Basis: ADCERAX Zirconia Ceramic Grade Comparison Technical Data, Rev06, material matrices. Test conditions and acceptance requirements must be agreed for the ordered grade and part.

Keep other zirconia grades separate

AD-ZRO-8Y, AD-ZRO-MG and AD-ZRO-CA are separate material routes when specified by the project. Do not transfer 3Y values to those grades or to black zirconia. Color alone does not establish a black formulation or its electrical behavior.

Check the environment and load together

For thermal duty, state steady and peak temperatures, dwell, heating/cooling rates, cycles and atmosphere. No universal maximum service temperature is assigned here. Do not extend the 40-80 °C expansion value to the full operating range.

For water or steam exposure, assess 3Y hydrothermal ageing. For electrical use, qualify voltage, leakage paths, humidity and surface contamination at component level. For contact duty, define force direction, edge loading, insertion impact and wear limits.

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Agree acceptance and repeat supply

A material value cannot establish fixture repeatability. Specify acceptance at the material, part, assembly and operating-system levels so each requirement has a defined verification method.

Acceptance level	Define in the drawing or purchase specification
Material batch	Exact grade or formulation, required property checks, specimen/test conditions and any requested material documentation.
Ceramic part	Critical dimensions and geometric tolerances, datum setup, functional-face roughness, edge condition, cracks/chips, cleanliness and identification.
Agreed assembly	Base or insert fit, fasteners or adhesive, assembly sequence, clamp force, contact pattern and thermal/electrical interfaces.
Operating system	Workpiece and machine, loading sequence, temperature, repeat-location criterion, measurement method, wear drift and replacement limit.

Make the inspection requirement measurable

Identify critical features on the drawing. For each, state the tolerance, reference temperature, support and clamping setup, measurement method, sampling and required report. If uncertainty matters to acceptance, define how it will be treated. Request document availability in the quotation.

Reduce assembly damage and locating drift

Review thin sections, hole-to-edge distances, unsupported spans and sharp transitions. Control clamp and installation loads. Avoid point impact and uncontrolled interference. Agree mating tolerances and support conditions before attributing a failure or positioning error to the ceramic alone.

Define packing and identification

Request protection of contact faces, thin edges and holes; separation of parts to avoid ceramic-to-ceramic impact; and a label scheme linked to part number, revision and quantity. For matched sets, define the sequence and orientation. Agree the packing method and requested shipment documents in the order.

Keep the repeat order tied to the accepted part

Retain the released drawing revision, material designation, inspection criteria and approved sample reference when one exists. State design or process changes, replacement intervals and wear limits in repeat inquiries. Quantity, MOQ, price, lead time and supply scope are quotation-controlled.

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Send a complete fixture RFQ

Email your drawing and operating brief to info@adcerax.com for engineering review and quotation. Cite this catalog and inquiry reference AT-YHG-ZJ1001.

Existing drawing or previous supply

Cite the part number, drawing revision and any previous quotation or approved sample reference. Confirm quantity, service conditions and changes. The catalog inquiry number alone is insufficient to reorder a specific part.

New drawing or replacement sample

Attach the 2D drawing and 3D model if available. With a sketch, sample or old part, mark the functional datums and mating features, and identify what is missing or worn. Include the following brief.

RFQ field	Information to send
Supply and function	Ceramic part / matched set / assembly for review; locating, guiding, supporting or contact function; workpiece and equipment.
Drawing definition	File and revision, dimensions and units, datum scheme, tolerances, functional faces, surface finish and edge requirements.
Material	Specified grade or formulation; color requirement separately; material-selection question if the grade is undecided.
Loads and interfaces	Clamp/contact force and direction, insertion impact, base and mating-part drawings, fit and connection method.
Service conditions	Temperature profile and cycles, coolant or cleaning media and exposure; voltage/frequency and humidity if applicable.
Acceptance	Critical features, part versus system repeatability requirement, inspection method, sampling and requested reports.
Purchase and delivery	Trial and repeat quantities, destination, target schedule, packing, marking and set-identification requirements.
Current failure or objective	Wear, chipping, drift, fit or replacement issue; operating history and photographs that help explain the problem.

Send the drawing and fixture brief

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Final feasibility, material, dimensions, tolerance, acceptance, included components and delivery terms are established in the agreed drawing and quotation.