ADCERAX

ENGINEERING PRODUCT CATALOG / REVIEW EDITION

Zirconia Ceramic Positioning Pins

For production and inspection fixtures

Find a starting size, define the pin and mating hole, and prepare the drawing inputs for a new fixture or replacement part.



Pin family appearance reference. Color and form do not establish grade, model, dimensions, tolerance or delivered product identity.

40 listed model and size pairs

AT-YHG-DWX001 through DWX040. Listed dimensions are in millimeters. Final shape, locating and mounting surfaces, material and acceptance requirements are drawing-defined.

Sizes 02-03 / Materials 04 / Selection 05 / Supply 06

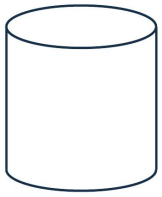
Drawing inputs 07 / Installation and FAQ 08 / RFQ 09

01 / LISTED SIZE REFERENCES

Models DWX001 to DWX020

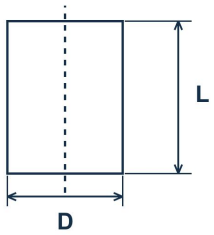
Use each model and its exact D and L pair as a starting reference. The table preserves model-number order; it is not sorted by diameter or expected demand.

3D NOTATION EXAMPLE



Illustrative cylinder only

DIAMETER AND LENGTH NOTATION



D = listed diameter

L = listed length

Confirm the measurement surfaces and endpoints on the part drawing.

No model-specific profile is implied.

Notation guide only. Not to scale. The illustration does not assign a shape or a measurement surface to any listed model; the approved drawing defines both.

Listed model	Listed diameter D (mm)	Listed length L (mm)
AT-YHG-DWX001	4.9	23.7
AT-YHG-DWX002	5.6	32.4
AT-YHG-DWX003	5.8	21.6
AT-YHG-DWX004	24.3	24.3
AT-YHG-DWX005	6.6	27.1
AT-YHG-DWX006	6.8	22.6
AT-YHG-DWX007	6.9	23.2
AT-YHG-DWX008	6.9	25.7
AT-YHG-DWX009	7.3	42.2
AT-YHG-DWX010	7.7	27.4
AT-YHG-DWX011	7.8	28.3
AT-YHG-DWX012	7.9	27.1
AT-YHG-DWX013	17.7	17.7
AT-YHG-DWX014	25.5	25.5
AT-YHG-DWX015	8.5	25.2
AT-YHG-DWX016	8.6	24.2
AT-YHG-DWX017	8.7	27.7
AT-YHG-DWX018	8.7	27.8
AT-YHG-DWX019	8.7	32.5
AT-YHG-DWX020	8.7	34.3

Before ordering

Confirm the actual profile, D measurement surface, L endpoints, locating and mounting regions, shoulder position, tolerances and grade on the drawing. A size match alone does not establish fit or equipment compatibility.

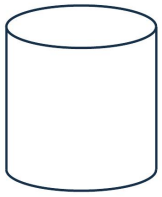
The quotation confirms availability, price, minimum quantity and lead time. The listed pairs do not imply stock or every combination within a continuous size range.

01 / LISTED SIZE REFERENCES

Models DWX021 to DWX040

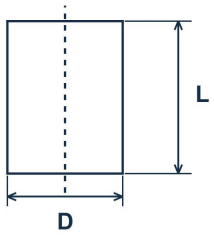
Use each model and its exact D and L pair as a starting reference. The table preserves model-number order; it is not sorted by diameter or expected demand.

3D NOTATION EXAMPLE



Illustrative cylinder only

DIAMETER AND LENGTH NOTATION



D = listed diameter

L = listed length

Confirm the measurement surfaces and endpoints on the part drawing.

No model-specific profile is implied.

Notation guide only. Not to scale. The illustration does not assign a shape or a measurement surface to any listed model; the approved drawing defines both.

Listed model	Listed diameter D (mm)	Listed length L (mm)
AT-YHG-DWX021	8.8	23.8
AT-YHG-DWX022	8.8	27.3
AT-YHG-DWX023	8.9	22
AT-YHG-DWX024	9.8	23.7
AT-YHG-DWX025	9.6	22
AT-YHG-DWX026	9.9	26
AT-YHG-DWX027	30	30
AT-YHG-DWX028	10.4	23
AT-YHG-DWX029	33.2	33.2
AT-YHG-DWX030	11.9	25.7
AT-YHG-DWX031	37	37
AT-YHG-DWX032	28.5	28.5
AT-YHG-DWX033	13.6	33.4
AT-YHG-DWX034	13.8	35.6
AT-YHG-DWX035	14.2	26.4
AT-YHG-DWX036	14.7	30.5
AT-YHG-DWX037	15.7	28.7
AT-YHG-DWX038	16.8	32.9
AT-YHG-DWX039	55	55
AT-YHG-DWX040	29	29

Before ordering

Confirm the actual profile, D measurement surface, L endpoints, locating and mounting regions, shoulder position, tolerances and grade on the drawing. A size match alone does not establish fit or equipment compatibility.

The quotation confirms availability, price, minimum quantity and lead time. The listed pairs do not imply stock or every combination within a continuous size range.

02 / MATERIAL SELECTION

Choose the material for the pin

Specify the actual zirconia grade on the drawing or purchase specification. Material values help compare options; the pin geometry, support, surface condition and load direction govern the finished-part assessment.



Family appearance reference. The image does not identify the material batch or establish a surface finish value.

Selected AD-ZRO-3Y material references

Property	Typical value	Selection use
Vickers hardness	12.5 GPa	Compare resistance to local indentation; assess wear in the actual contact pair.
Young's modulus at 20 °C	200-220 GPa	Use with geometry and support conditions when assessing deflection.
Fracture toughness at 20 °C	7.2-9.0 MPa·$m^{0.5}$	Review crack-growth resistance together with shoulders, edges and defects.

Source: ADCERAX Zirconia Ceramic Grade Comparison, Rev06, pages 1-2. Dense sintered material selection values. Hardness and toughness depend on the test method; agree the method and acceptance basis if testing is required.

Keep the zirconia systems separate

AD-ZRO-3Y is a structural, yttria-stabilized route. AD-ZRO-8Y is fully stabilized and cubic-rich, with a different functional selection role. AD-ZRO-MG and AD-ZRO-CA require their own grade and application review. Their inclusion here does not mean every listed pin is offered in every grade.

Black or other colored zirconia requires the actual formulation and its own data. Appearance cannot identify the stabilizer system, and values must not be transferred between grades.

Qualify the finished component

These values do not specify pin load capacity, locating accuracy, allowable interference, wear rate or life. Heat, cleaning media, water or steam, electrical isolation and clean-contact duties require conditions and acceptance criteria for the actual part and assembly.

03 / BUYER SELECTION

Four checks before choosing a pin

Start with the job: replace an existing locator, locate parts in a new production fixture, or hold a workpiece for inspection. The fit, loading path and verification method matter as much as the listed diameter and length.

Match the replacement to the existing fixture

Compare the surfaces that locate and support the part: the locating diameter, mounting region, shoulder position and tip shape. Inspect the mating hole and seat before copying the old pin; hole wear or seat damage can change the fit even when the replacement matches the drawing.

Without a drawing, send views of the tip, side, base and mating hole with a scale, plus measurements from intact surfaces. Include the original part reference and equipment model. Mark worn measurements separately from the geometry you need.

Review binding and edge damage during loading

Check the lead-in, insertion alignment, support length and direction of clamping force. Angled loading, contact at the hole edge or an unsupported side load can damage a ceramic pin. For automated loading, show the approach direction and the location of any chipped area.

With two locating holes, review hole spacing and how each locator constrains movement. The fixture must avoid unintended overconstraint; this catalog does not assign a round or relieved locator arrangement to any DWX model.

Verify repeatability in the assembled fixture

Check the pin first, then the seating of the actual workpiece. The mating hole, fixture base, clamping sequence and reference surfaces contribute to the result. A pin inspection report alone does not establish the repeatability of the complete fixture.

Before a repeat order, remove and reload the trial part using the planned clamping and measurement sequence. Agree the reference surfaces, inspection temperature, cycle plan and acceptance limits.

Match the grade to the operating conditions

For heat and cleaning, provide the temperature cycle, chemicals, concentration and exposure time. For 3Y zirconia in hot water or steam, assess hydrothermal ageing. For isolation, state voltage, temperature, humidity and electrode or contact arrangement.

For clean contact, define acceptable particles or residues, surface condition, cleaning and handling. Agree measurable acceptance requirements for the pin and the assembled system.

04 / APPLICATION AND SUPPLY

Plan the pin duty and delivery

Assembly and production fixtures

For repeated loading and unloading, define the workpiece hole, insertion direction, support around the pin and clamping loads. Separate the locating function from load support and retention so the part specification matches the fixture design.

Inspection fixtures

Identify the workpiece datums and critical locating surfaces, then validate the locating result with the actual part and measurement method. Include access for probes or optical inspection when this affects the pin shape or position.

Existing welding or forming tooling

For a worn or chipped locator, provide the old pin, mating-hole dimensions, equipment reference and failure history. Describe local heat, spatter, vibration and contact with moving tooling. A material name alone does not establish suitability for that station.

Protect tips shoulders and locating surfaces

Specify individual separation and cushioning where pins could strike one another. Identify finished contact surfaces and any clean-handling requirements. Match inner supports, wrapping and outer packaging to the ordered geometry, quantity and shipping route; confirm the packing method with the order.

Supply item	Define with the order
Identity and quantity	Catalog or drawing reference, revision, actual grade, quantity and part or lot identification.
Inspection records	Required material evidence, dimensional results, visual checks, sampling and acceptance limits.
Packing and destination	Protected surfaces, separation, labels, clean handling, delivery destination and target schedule.
Repeat orders	Accepted drawing, mating-part revision, trial outcome and any change to the fixture or duty.

From drawing review to repeat supply

ADCERAX is a China-based advanced ceramics manufacturer for custom precision ceramic components. Drawing, material, production and inspection requirements are reviewed for the requested pin before quotation. Confirm the agreed specification and trial acceptance before extending to repeat production.

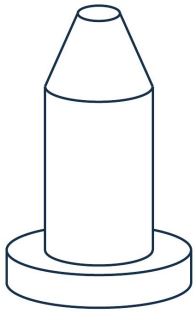
Price, minimum order quantity, sample arrangements, availability and lead time are confirmed for the selected design.

05 / CUSTOM GEOMETRY

Define the pin and its mating interfaces

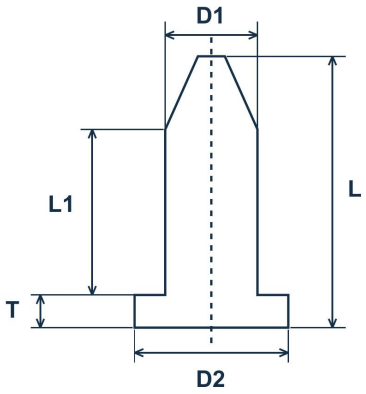
Submit the profile you need. The example below shows how to dimension a flanged body with a tapered tip; it is an RFQ notation example and is not assigned to any DWX model. All values and tolerances come from your drawing.

3D GEOMETRY EXAMPLE



Example flange and tapered tip

GOVERNING SIDE VIEW



D1 Body diameter
D2 Flange diameter
L Overall length
L1 Straight body length
T Flange thickness

Tip and mounting details follow the actual customer drawing.

Geometry example only. Not to scale; not a manufacturing or inspection drawing. The actual drawing defines the locating region, mounting region, tip, seat and any additional features.

Drawing field	Information to supply
D1 and D2 (mm)	Body and flange diameters for this example; identify the functional locating and mounting surfaces separately.
L, L1 and T (mm)	Overall length, straight body length and flange thickness for this example; give actual datum faces and tolerances.
Tip and additional features	Tip shape and dimensions; lead-in, edge radii or chamfers; any required flats, grooves or holes.
Mating hole and seat	Hole material, diameter and tolerance, engagement, shoulder seat, retention and assembly direction.
Datums and acceptance	Datum system, dimensional and geometric tolerances, finish on functional surfaces, defect limits and inspection method.

For a different profile

Provide all segment diameters and lengths, shoulder positions and actual tip or interface features. Include the mating-part drawing. Do not relabel the listed D as a locating or mounting diameter until its measurement surface is confirmed.

For a replacement without a drawing

Start with photos and measured dimensions or sample details. Mark wear, chipped edges and intact reference surfaces; the intended new geometry must be agreed before manufacture.

06 / INSTALLATION AND INSPECTION

Control installation and acceptance

Before installation

Check the part reference and drawing revision. Inspect the tip, shoulder, edges and locating surface for damage. Clean the pin and mating hole using a method compatible with the ceramic and process.

During installation and service

Follow the agreed mounting method and apply force only at the specified support surfaces. Keep the pin aligned; do not hammer it into place or use it to force misaligned components together. Check seating and retention before production.

Monitor debris, wear, chips, cracks and changes in loading force. Do not put a visibly cracked pin into service. Use the agreed inspection and replacement criteria, and store spares separately with cushioning around finished surfaces.

Acceptance level	What to define
Material batch	Actual zirconia grade and the material evidence or tests required by the purchase specification.
Individual pin	Drawing dimensions, datums, form, functional surfaces, defects, identification and measurement method.
Pin and fixture assembly	Mating fit, seating, retention, insertion or withdrawal checks and assembly condition.
Workpiece and system	Loading sequence, locating repeatability, operating environment and agreed wear or replacement endpoint.

Can a zirconia pin replace a steel locator

It may be a candidate after reviewing the mounting fit, side loads, impact risk and temperature changes. Matching the external dimensions is only the first step; provide the existing drawing and the reason for replacement.

Can the pin be press fitted

A press fit requires review of the pin, hole, interference, support and assembly method. Do not transfer a steel-pin press-fit specification directly to a ceramic pin.

Which tolerances and finish can be supplied

Mark the critical locating and mounting dimensions, surface finish and inspection method on the drawing. Requirements are assessed for the actual material and geometry before quotation; no universal tolerance or roughness is assigned here.

07 / ENGINEERING INQUIRY

Request a positioning pin quote

Send the information you already have. A listed model, drawing or old-part photos can start the discussion. The pin, mating hole and fixture duty together define what needs to be reviewed.

Route A Start from a listed model

Cite the complete AT-YHG-DWX number and its listed D and L pair, this catalog reference and the quantity. Attach the drawing or identify the existing part. State any required changes; confirm shape, grade and functional surfaces before ordering.

Route B Start from a drawing or old part

Attach the drawing or 3D file with revision, or provide sample details and clear views with a scale. Include the tip, body, shoulder, base and mating hole. Distinguish intact dimensions from worn measurements.

Include with either route	Useful information
Pin and mating geometry	Drawing revision, locating and mounting regions, hole and seat, tip profile, critical dimensions and tolerances.
Material and surfaces	Required grade, functional surface finish, edge and defect limits, cleaning or contamination requirements.
Fixture duty	Workpiece and equipment, mounting method, load directions, impacts, loading cycles, temperatures and contact media.
Inspection and supply	Acceptance method and records, trial and repeat quantities, packing, destination and target schedule.

A useful first message

“Please review model AT-YHG-DWX___ or the attached drawing for our fixture. The required quantity is ___. We have attached pin and mating-hole details. Our current issue is ___, and delivery is required to ___.”

Send your drawing for engineering review and quotation

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