ADCERAX

ENGINEERING PRODUCT CATALOG

Silicon Carbide Burner Nozzles

Ceramic burner outlet components for kilns and furnaces

Catalog outlet sizes and drawing-based configurations for equipment builders, maintenance teams and engineering procurement.



Website form reference: representative nozzle tube profiles. Shapes are not mapped to individual catalog models.

Outlet ID 30-80 mm | Outlet OD 50-105 mm

Choose a paired outlet size, define the installation geometry, and review the SiC route against the ceramic component temperature and atmosphere.

Find your section Forms 2 | Sizes 3 | Drawing inputs 4 | Materials 5 | Service 6 | Acceptance 7 | RFQ 8

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

adcerax.com | Silicon carbide burner nozzle

01 PRODUCT AND APPLICATION

Identify the ceramic outlet component

A silicon carbide burner nozzle is fitted at the burner outlet of a kiln or furnace. Its passage, outlet profile and mounting arrangement define the ceramic component that the burner design must accommodate.

This catalog covers the ceramic outlet nozzle or nozzle tube. A complete burner, flame tube, radiant tube and liquid atomizing nozzle require their own component definition.





Website form references: flanged-end tubes (left) and side-opening tubes (right). Define the actual end profile, opening pattern and orientation on the drawing. Images do not establish dimensions, grade or equipment compatibility.

Project	Selection focus	Useful starting information
Roller hearth kiln	Outlet direction, support and long-cycle exposure	Burner section, wall opening, ceramic temperature and firing sequence
Tunnel or shuttle kiln	Mounting and repeated thermal loading	Length, insertion depth, heat-up/cooling cycle and existing wear
Heat-treatment or reheating furnace	Wall interface, alignment and scale exposure	Housing drawing, clearance, temperature history and deposits
Oxidation or process-gas heating	Actual gas chemistry and surface exposure	Gas composition, water vapor, dust/ash/slag and pressure difference

Two ways to begin

Existing catalog reference: use the model and paired outlet dimensions on page 3. New or replacement part: start with a drawing, sample details or old-part photographs, then define the fields on page 4.

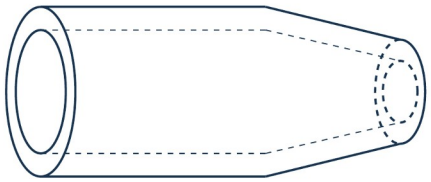
Equipment brand and original part number help identify a replacement. They do not establish direct interchangeability.

02 CATALOG SIZE REFERENCES

Select the paired outlet dimensions

The listed models provide outlet dimensions for early selection. The length entry is a range; specify one actual total length and the complete geometry on the order drawing.

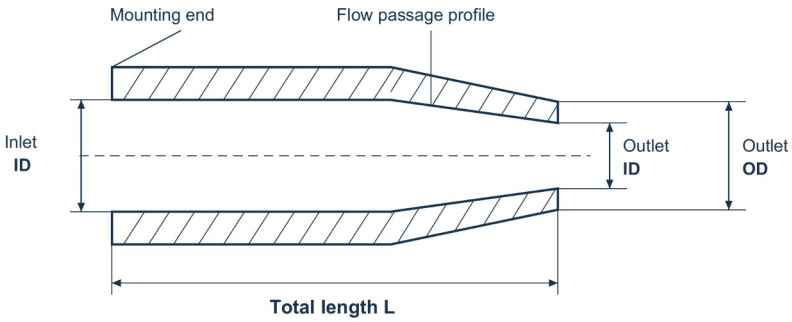
3D FORM RECOGNITION



Illustrative tapered nozzle profile

Hidden edges dashed; shape by drawing

GOVERNING LONGITUDINAL SECTION



Not to scale. Final geometry and tolerances follow the order drawing.

Dimension key for reading the table. The illustrated taper is representative; it does not define the shape of every listed model. ID = inner diameter; OD = outer diameter; L = total length.

Model	Outlet ID mm	Outlet OD mm	Listed length L mm
AT-THG-P1001	30	50	100-2000
AT-THG-P1002	35	55	100-2000
AT-THG-P1003	40	65	100-2000
AT-THG-P1004	45	70	100-2000
AT-THG-P1005	50	70	100-2000
AT-THG-P1006	55	75	100-2000
AT-THG-P1007	60	78	100-2000
AT-THG-P1008	65	80	100-2000
AT-THG-P1009	70	80	100-2000
AT-THG-P1010	80	105	100-2000

What the catalog size defines

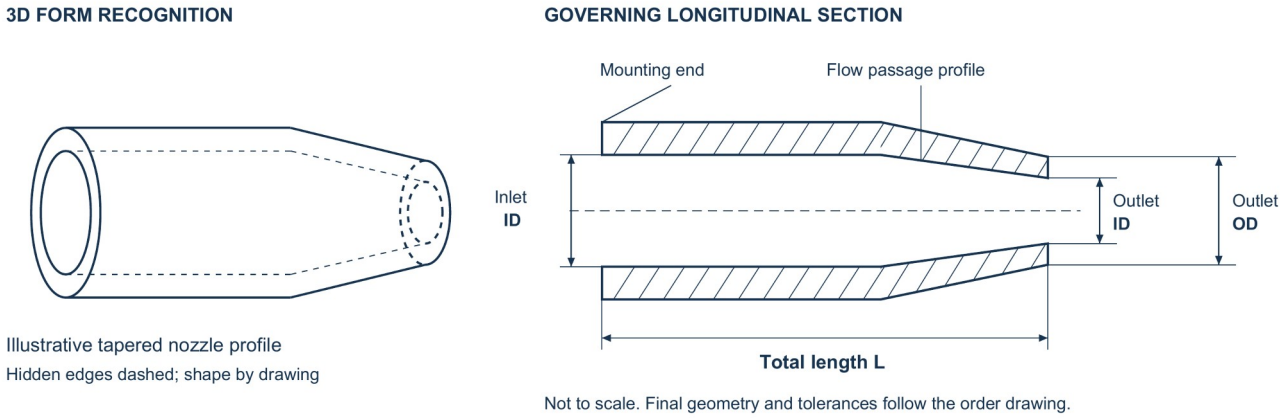
Keep the model and its outlet ID/OD together. Outlet dimensions do not establish the inlet diameter, minimum passage, wall profile, mounting interface or insertion depth.

Confirm actual length, material grade, tolerances, quantity and inspection requirements on the drawing and quotation. A listed range does not indicate stock or approval of every geometry combination.

03 DRAWING BASED CONFIGURATIONS

Define the passage and installation together

Supply a drawing or dimensioned sketch with units and a revision. For a replacement, include the installed position, original part reference and dimensions from unworn features.



Illustrative drawing-input key, not to scale. The longitudinal section governs the labeled fields; the order drawing defines the final shape, features and acceptance limits.

Drawing field	Define for quotation
Inlet ID and passage	Inlet diameter, minimum passage, transition profile and flow direction; dimension any side openings and their locations.
Outlet ID and OD	Paired outlet diameters, edge profile and outlet direction; define local wall thickness from the complete section.
Total length L and installation	Actual total length, insertion depth and furnace-wall opening/thickness; show the part in its assembly section.
Mounting and sealing	Locating shoulder, flange, thread or clamp details as applicable; support, sealing surfaces, fits and thermal clearance.
Datums and tolerances	State the reference surfaces/axis and critical dimensional and geometric tolerances. Identify the features to inspect.
Material and surface	SiC route/grade, relevant material acceptance, flow-passage and interface finish, edge condition and cleanliness.

From a drawing or an existing part

ADCERAX reviews the nozzle geometry, material route and applicable forming, sintering, machining, grinding and finishing requirements. Agree the drawing revision, sample or batch quantity and inspection record before production.

Nozzle supply is defined around the ceramic purchase unit. Include mating metal parts and assembly requirements as references when they affect the interface.

04 MATERIAL AND OPERATING CONDITIONS

Select the route for the actual duty

Silicon carbide routes have different bonding systems and porosity. Review the grade with the geometry, atmosphere and thermal cycle, and state the selected route on the order.

Route and grade code	Material structure	What to review for this nozzle
SiSiC / RBSiC AD-SIC-RB	Dense reaction-bonded SiC with residual free silicon	Geometry, machining requirements, ceramic temperature and exposure of the complete material system
SSiC AD-SIC-SS	Dense pressureless-sintered SiC	Chemical exposure, working surfaces, precision requirements and thermal duty
NBSiC AD-SIC-NB	Porous SiC with a silicon nitride bond	Bond-phase behavior, porosity and the flow or sealing requirements of the component
RSiC AD-SIC-RC	Porous recrystallized SiC structure	Component-specific porosity, hot strength and permeability requirements

The grade code is a material-selection reference. A catalog model number does not assign a route or guarantee that every geometry can be produced in every route.

Build a useful operating brief

Condition group	Information for engineering review
Ceramic temperature	Mark measurement locations on the drawing. Record continuous and peak values, gradients, hold time and heat-up/cooling cycles.
Fuel and oxidant	Fuel/oxidant composition, flow and pressure range, pressure difference, modulation and start/stop sequence.
Furnace atmosphere	Gas composition, water vapor, sulfur/halogens, dust, ash, slag and observed deposits or surface loss.
Assembly and acceptance	Support, clamping, clearance and sealing arrangement; define the component and assembly trial endpoints.

Keep material data and system ratings separate

Record flame temperature separately from ceramic temperature. Material selection limits do not set a universal continuous nozzle rating. Material strength and porosity do not establish finished-part pressure capability, gas tightness or service life.

Combustion behavior, fuel consumption and emissions depend on the burner and furnace system and require an agreed system assessment.

05 SERVICE AND REPLACEMENT

Use the wear pattern to guide the review

A damaged nozzle can point to several interacting causes. Compare photographs, operating history and installation details before changing the geometry or material.

Observed condition	Review with the replacement inquiry
Chipped outlet or mounting edge	Handling, impact, contact points and clamping method; protect edges and distribute load through the intended interfaces.
Cracks after a heating or cooling event	Ceramic temperature history, gradients, cycling, wall profile and restraint; follow the equipment commissioning procedure.
Uneven surface loss or outlet wear	Burner alignment, outlet direction, gas/particle exposure and local deposits; compare the part and assembly drawings.
Deposits or restricted passage	Dust, ash, scale or glaze exposure; record the passage and side-opening condition and the cleaning/inspection practice.
Pitting or surface change	Material route, gas composition, water vapor, sulfur/halogens and slag or vapor exposure.
Damage near a shoulder or seal	Support, fit, sealing contact, tolerance and expansion clearance across the operating cycle.

These are review prompts, not a diagnosis from appearance alone. Include the damaged location, service duration and any process change in the inquiry.

Installation and maintenance checkpoints

Before assembly. Confirm the drawing revision, outlet orientation, burner axis, wall opening, sealing and thermal clearance.

During mounting. Use the specified support and clamping method. Protect the ceramic edges and working surfaces from concentrated contact and impact.

Commissioning. Qualified furnace personnel should follow the burner-system procedure for fuel/air control, ignition and heating.

At service intervals. Inspect the outlet edge, passage, side openings and mounting contact for deposits, erosion, chipping and cracks against the agreed maintenance criteria.

06 ACCEPTANCE AND SUPPLY

Agree what is checked at each level

Define the inspection and trial requirements with the ceramic purchase unit. Material data, nozzle dimensions, assembly checks and furnace performance answer different questions.

Level	Checks to agree	Record or decision
Material	Grade/route, relevant composition or phases, porosity and stated test conditions	Material requirements and applicable test documentation
Ceramic nozzle	Inlet/outlet and interface dimensions, length, datums, finish, edges, visual defects and sampling	Conformity to the agreed drawing revision
Mounted assembly	Alignment, support, thermal clearance and sealing; flow/pressure-drop or leak checks where required	Assembly readiness under defined conditions
Burner or furnace trial	Fuel/air settings, thermal cycle and agreed combustion, surface-condition or service endpoints	Acceptance of the assembled system for the proposed duty

Inspection method, sample size, acceptance limits and required reports are agreed with the order. This checklist does not state that every nozzle receives every listed test.

Move from samples to repeat supply

Start with the approved drawing revision and selected grade. For a sample or trial batch, agree quantity, inspection records and trial conditions before committing the repeat specification.

Order control	What to keep consistent
Part identity	Model or customer part reference, drawing revision, actual length, material grade and agreed order identification
Change control	Record changes to passage, mounting, material or service conditions and review their effect before repeat manufacture
Incoming acceptance	Use the agreed dimensional and visual criteria, documentation and sampling basis

Protect the features that determine fit

Specify separated cushioning and outer packaging for the nozzle size, weight, quantity and shipping route. Protect outlet edges, ground surfaces and mounting interfaces. Define part identification, drawing revision and required documents with the packing instructions.

Keep the nozzles separated, supported and cushioned in storage until assembly. Quantity, packing, price and delivery schedule are confirmed in the quotation.

07 REQUEST FOR QUOTATION

Send a model or your nozzle requirement

Start with the known nozzle requirement, the kiln or burner application and quantity. Include an available drawing, sample details or old-part photographs. You can begin before every engineering field is complete.

Choose your starting route

Catalog reference	New or replacement part
Cite ADC-CAT-SIC-BN-001, Rev 01, and the complete model number from page 3. Include the paired outlet ID/OD, required actual length and any deviations.	Send the part drawing and revision, a dimensioned sketch or sample details. For a replacement, add the installed position, original part reference and unworn dimensions.

Complete the engineering brief during review

Information	Include when available
Geometry and installation	Inlet/outlet dimensions, passage, length, insertion depth, side openings, mounting/sealing, tolerances and burner/furnace-wall section
Material and duty	Required route/grade, ceramic temperature and measurement locations, cycles, fuel/oxidant, flow/pressure, atmosphere and deposits
Existing part or trial	Observed damage, operating history, sample/batch quantity and the agreed trial acceptance criteria
Inspection and delivery	Inspection/documents, packing and identification needs, destination, target schedule and repeat-order expectation

A short inquiry you can copy

Product: SiC burner outlet nozzle
Catalog: ADC-CAT-SIC-BN-001 Rev 01
Model or drawing number and revision: _____
Outlet ID/OD and actual L in mm, if known: _____
Application and burner or kiln: _____
Quantity: _____ Available drawing or photographs: _____
Destination and target schedule: _____

Send the drawing or nozzle details for engineering review and quotation.

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Product page and inquiry form

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