ADCERAX
ADVANCED CERAMICS

ENGINEERING PRODUCT CATALOG

Silicon Carbide Spiral Nozzles

For wet FGD absorbers, industrial scrubbers and quench spray duties



Representative spiral nozzle with an exposed spiral profile and male-threaded connection. Image shows the series form; it does not identify an individual model or material grade.

Find a reference or define a replacement

Compare ten AT-THG-LW references, then define the nozzle duty and header interface. For a replacement or custom part, start with a drawing, marked photograph or existing part reference.

ADCERAX coordinates drawing review, production and inspection with manufacturing partners against the agreed nozzle specification.

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adcerax.com/product/silicon-carbide-spiral-nozzle/

01 APPLICATION AND PROCUREMENT

Choose the route for your project

Begin with the task: a new spray layer, a process retrofit or an installed-part replacement. A matching connection size alone does not establish the required spray behavior.



Representative series views show inlet openings, external threads and tapered spirals. These are not model-by-model photographs or installation evidence.

Buyer task	Information that determines the next step
Wet FGD absorber	Per-nozzle slurry flow and pressure difference; solids and largest particle; nozzle count, spacing and orientation.
Industrial scrubber	Liquid chemistry and temperature; scaling tendency; minimum clear passage and existing header interface.
Quench or gas cooling	Spray distance and target coverage; gas conditions, droplet requirement, thermal cycling and wall-wetting limits.
Installed-part replacement	Old reference and drawing revision; installed length, connection, spray direction and operating duty.

Two practical starting points

Existing reference: cite the complete AT-THG-LW code and provide the operating conditions. The table is an inquiry reference; the order confirms the configuration and duty point.

Drawing or old part: provide marked dimensions and the mating connection. Replacement fit and spray performance require separate review; a photograph or old part number alone does not establish interchangeability.

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02 CATALOG REFERENCE MODELS

Ten references for an initial inquiry

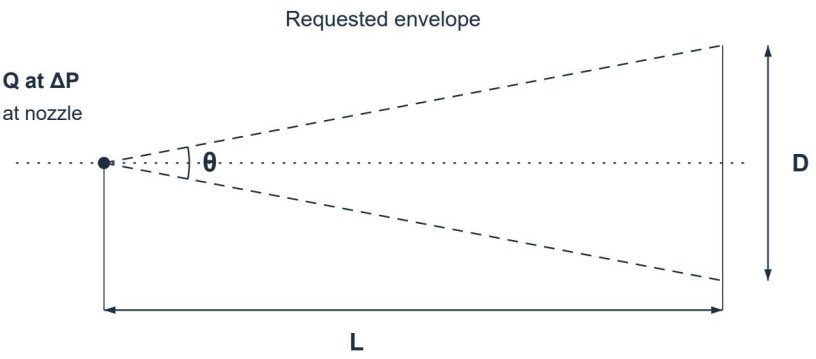
The entries below identify published catalog options for discussion. Flow, spray angle and coverage require a stated nozzle pressure difference, test liquid and spray distance before they can define a duty point.

FORM RECOGNITION



Visible threaded family

SPRAY REQUIREMENT KEY



Requirement key, not to scale. Left: representative threaded form. Right: θ = requested spray angle, L = spray distance, D = target coverage diameter; Q = per-nozzle flow at ΔP. This is not a measured spray pattern or a model drawing.

Model	Catalog size (inch)	Connection entry[1] (mm) / type	Catalog angle	Catalog flow (m³/h)	Catalog coverage (m)	Connection method
AT-THG-LW001	3/8	18	120°	2.5	0.8	Threaded
AT-THG-LW002	1/2	20	120°	4	1	Threaded
AT-THG-LW003	3/4	25	120°	6	1.2	Threaded
AT-THG-LW004	1	32	120°	12	1.4	Bonding/Threaded
AT-THG-LW005	1.2	40	120°	15	1.6	Bonding/Threaded
AT-THG-LW006	1.5	46	120°	20	1.8	Bonding/Threaded
AT-THG-LW007	2	58	120°	30	2.3	Bonding/Threaded
AT-THG-LW008	2.5	73	120°	45	2.3	Bonding/Threaded
AT-THG-LW009	3	Bonding	120°	70	2.8	Bonding
AT-THG-LW010	4	Bonding	120°	100	3	Bonding

All values are catalog references, not unconditional operating ratings. No stock or delivery status is implied. The quotation and agreed drawing define the supplied configuration.

Read the connection fields before choosing

[1] The connection entry is preserved as published. Numeric entries do not define a thread standard, thread major diameter, pitch or fit. “Bonding” denotes a connection type rather than a millimetre dimension.

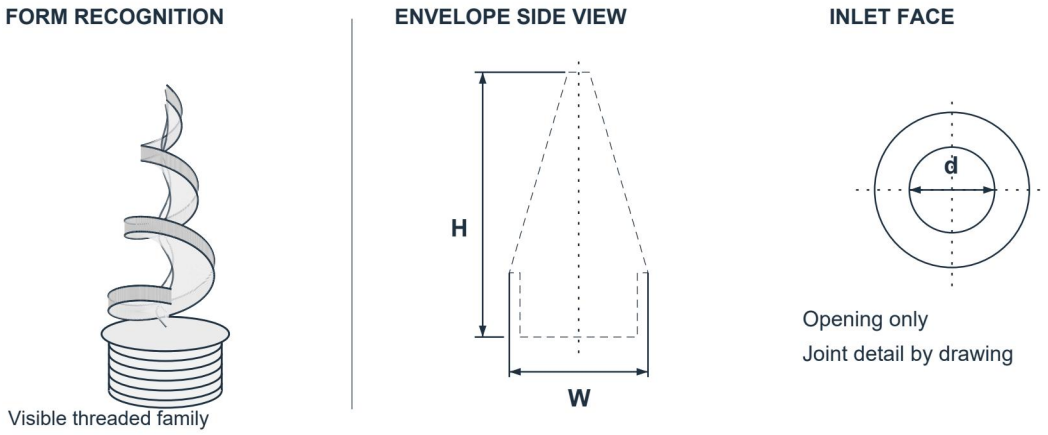
LW005 retains the original 1.2 inch label; specify the actual mating interface. LW004-LW008 list bonded or threaded variants; state which joint is required. LW009-LW010 list bonded connections.

Provide Q and ΔP at the nozzle, liquid conditions and the required D at L. Confirm the associated test basis before using a reference to size a pump or arrange a spray layer.

03 DRAWING AND REPLACEMENT

Define the part that must fit

For a replacement, identify the installation datum and mating part first. The approved drawing should distinguish the overall envelope, inlet opening, spiral profile and connection detail.



Dimension key, not to scale. H = overall length; W = maximum envelope width; d = inlet opening diameter. The side view is an envelope only. The inlet view defines the visible opening, not a hidden bore path. All dimensions and tolerances are RFQ inputs.

Drawing input	What to provide
H and installation	Overall length H in mm; installed projection from the mounting datum; orientation, nearby clearance and support.
W and inlet d	Maximum envelope width W and inlet opening d in mm, with tolerances and the measurement datum.
Spiral and passage	Profile drawing, handedness, turns/pitch, edge and root details; minimum clear passage and the section used to define it.
Threaded connection	Male/female interface, standard, size, pitch, fit class, engagement, sealing arrangement and mating material.
Bonded connection	Joint drawing, mating diameters, insertion length, gap, support, adhesive/seal requirements and assembly conditions.
Critical acceptance	Drawing revision; dimensional and geometric tolerances; surface/edge criteria; inspection method and sampling.

Use the old part as a starting reference

Include photographs of the inlet, spiral, connection and installed position. Mark measured dimensions and identify worn or damaged areas so that wear is not copied into the replacement definition.

State whether the request covers the ceramic nozzle alone or a specified connection and sealing assembly. Confirm the replacement drawing, hydraulic acceptance and supply scope before ordering.

04 MATERIAL AND LIQUID CONDITIONS

Select the material route with the duty

Reaction-bonded silicon carbide (RBSiC / SiSiC) and pressureless-sintered silicon carbide (SSiC) are distinct material routes. Specify the requested route and grade with the inquiry; model identity and appearance do not establish the material of an individual part.

Material selection field	AD-SIC-RB	AD-SIC-SS
Route	Silicon infiltration / reaction bonding	Pressureless sintering
Structure	Dense SiC with residual free silicon	Dense sintered SiC
SiC content (wt%)	85 nominal	≥99, material selection limit
Residual silicon	15 wt% nominal free silicon	No silicon-infiltration phase
Bulk density (g/cm³)	≥3.02, material selection limit	3.10 typical selection value

These are material-route selection values, not test results or guarantees for AT-THG-LW001-LW010. Confirm the exact grade, part applicability and any required test method or certificate in the order. No service-temperature or pressure rating is established by this table.

Supply the liquid conditions that affect selection

Condition	Required information
Chemistry	Liquid constituents and concentration; pH, chloride level and exposure temperature; cleaning chemicals.
Solids and deposits	Solids concentration, particle-size distribution and largest particle; scaling, crystallization and agglomeration tendency.
Flow and pressure	Required flow per nozzle; inlet and outlet pressures at that flow; peak pressure, pulsation and measurement location.
Spray and temperature	Pattern and distribution requirement; angle and coverage at distance L; liquid/gas temperatures and startup/shutdown cycles.

Keep material and spray acceptance separate

A material property does not establish nozzle flow, droplet size, coverage or service life. Review the liquid against the specific grade, then define hydraulic and spray acceptance at the intended operating conditions.

For quench duty, include gas flow and temperature, the cooling target and permitted wall wetting. For slurry duty, include the minimum clear passage requirement and cleaning procedure.

05 ORDER ACCEPTANCE AND SUPPLY

Define what the order will verify

Agree the drawing, acceptance method and delivery scope before production. The following fields define an inspection request; special tests, documents and sampling require confirmation in the quotation.

Acceptance item	Define with the order
Geometry and fit	Drawing revision; H, W and d where applicable; spiral and connection dimensions; joint fit, datum and minimum clear passage.
Material identity	Selected route and grade, batch identification and certificate requirements; method, specimen and acceptance limits if testing is required.
Hydraulic duty	Flow Q at nozzle pressure difference ΔP, with test liquid, temperature, measurement method and allowed variation.
Spray distribution	Pattern/angle and coverage D at distance L; orientation, collection or imaging method and acceptance criterion.
Condition on delivery	Limits for cracks, chips and edge damage; surface cleanliness, identification, quantity and packaging.

Protect the exposed spiral and connection

Specify cushioning around the spiral, separation between parts and protection of the threaded or bonded interface. State individual packing, inspection photographs, carton/pallet and receiving requirements with the inquiry.

Record a baseline for maintenance

At commissioning, record liquid condition, Q, ΔP, spray distance and orientation. Compare later flow and spray observations at the same conditions, together with deposits, spiral-edge wear and connection condition.

A changed spray pattern, lower flow, joint leakage or cracking can have several causes. Supply the operating history, installation details and photographs for review; the symptom alone does not establish the cause or a guaranteed remedy.

Make repeat orders identifiable

Retain the accepted drawing revision, model/configuration, material route, inspection plan and packing definition. For a spray layer, record the header position and quantity for each nozzle configuration.

Availability, quantity, price, lead time and delivery arrangements are quotation-controlled. A catalog entry does not confirm inventory or an agreed supply date.

06 ENGINEERING QUOTATION

Send a part reference and nozzle duty

Start with three items: the part reference, the application and the quantity. Add the operating information you already have; the engineering review identifies the remaining drawing and duty-point details.

Existing catalog reference	Custom or replacement part
Complete AT-THG-LW code and requested connection variant. Material requirement, quantity and any changes to the reference.	Drawing with revision, marked photographs or old-part details. Mating interface, installed dimensions, wear history and requested changes.

Complete the engineering brief

Include	Details
Application	FGD absorber, scrubber, quench or replacement; equipment and installation position; nozzle count and header layout when relevant.
Liquid and solids	Chemistry, pH, chloride/concentration, temperature, density/viscosity, solids content and largest particle.
Hydraulic point	Required per-nozzle Q with units; inlet and outlet pressure or ΔP; continuous and peak conditions.
Spray requirement	Pattern/angle, coverage D at distance L, orientation, distribution and droplet requirement when relevant.
Drawing and interface	Revision, H/W/d and tolerances; spiral/passage; thread standard or bonded joint; seal, support and mating material.
Acceptance and supply	Requested grade, tests/documents, visual criteria, quantity/repeat need, packing, destination and target schedule.

Request a nozzle quotation

Send the drawing or reference together with your application and quantity. The quotation should identify the proposed model or drawing basis, material route, connection, acceptance scope and commercial terms.

info@adcerax.com

Product information | Submit an engineering inquiry

Reference this catalog: ADC-CAT-SIC-SPIRAL-001, Rev 01

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