ADCERAX
ADVANCED CERAMICS

ENGINEERING PRODUCT CATALOG

Silicon Carbide Pump Shafts

Solid and hollow forms for pump OEMs, maintenance teams and component buyers



Solid shaft forms. Product image supports form recognition; dimensions, grade and working surfaces are defined separately.

Size references and drawing requirements

Use the AT-SCB and AT-SCG references to start an enquiry, then define the material route, bore, end features, mating interfaces and acceptance criteria on the drawing.

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

adcerax.com/product/silicon-carbide-shaft/

01 IDENTIFY THE PART

Choose the form and assembly role

Start with the component location in the pump. A solid or bored outline alone does not establish whether the part rotates, remains fixed or functions as a sleeve.

Solid form	Hollow form
AT-SCB-001 to AT-SCB-012 Diameter D and length L  Representative form image. No item-specific grade, size or fit is established by the photograph.	AT-SCG-001 to AT-SCG-038 Outside diameter OD, bore ID and length L  Representative form image. No item-specific grade, size or fit is established by the photograph.

Find the next decision

Your task	Section	Page
Check a solid shaft reference	Solid size references	3
Check a hollow shaft reference	Hollow size references	4-5
Select the material and service inputs	SSiC and RBSiC selection	6
Define a custom or replacement part	Drawing requirements	7
Specify acceptance and handling	Inspection and supply	8
Send a useful enquiry	Engineering RFQ	9

Order definition

A catalog reference identifies the dimensional starting point. The approved drawing and quotation define the supplied component. Confirm part role, material route, finished dimensions and current availability before ordering.

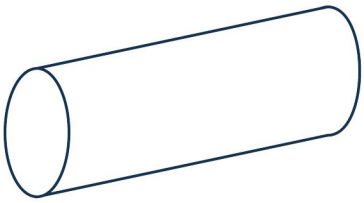
For a replacement, include the pump model and revision, old-part number, assembly drawing and photographs of both ends. A pump model alone does not establish a drop-in replacement.

02 DIMENSIONAL REFERENCES

Solid shaft size references

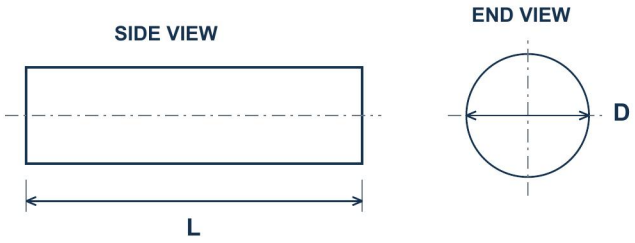
Choose the reference diameter, then specify the required finished length and end details. Each length entry below is a range, rather than one fixed stock length.

3D FORM RECOGNITION



Solid envelope

GOVERNING DIMENSION VIEWS



Not to scale. End features are drawing-defined.

Dimension key: D = diameter; L = overall length. Basic envelope only; the approved part drawing controls features and inspection.

Catalog reference	D (mm)	L range (mm)
AT-SCB-001	8	10-500
AT-SCB-002	10	10-500
AT-SCB-003	12	10-500
AT-SCB-004	17	10-500
AT-SCB-005	20	20-500
AT-SCB-006	22	20-500
AT-SCB-007	28	20-500
AT-SCB-008	31	40-500
AT-SCB-009	45	40-500
AT-SCB-010	50	40-500
AT-SCB-011	83	40-500
AT-SCB-012	92	80-500

Complete the dimensional reference

Specify the exact length, tolerances, datum system and bearing or seal contact zones. Add any steps, grooves, flats, chamfers or coupling features on a drawing. The plain envelope above does not define those features.

Material and supply definition

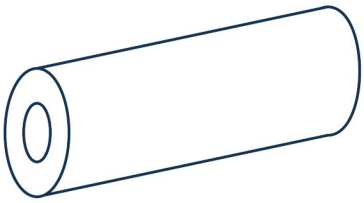
Select SSiC or RBSiC for the service conditions. Each reference requires a separately agreed material grade. Grade, finish, acceptance limits, quantity and supply schedule are confirmed in the quotation.

03 DIMENSIONAL REFERENCES

Hollow shaft size references 1 of 2

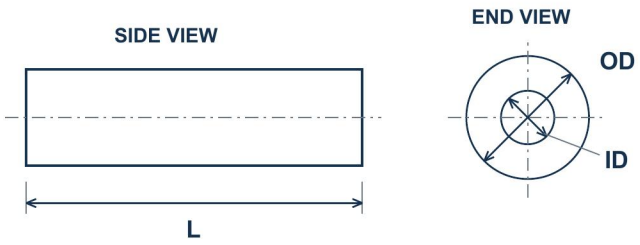
Use the complete reference code and all three dimensions. Define the bore depth, through or blind construction, end details and fixed or rotating role on the assembly drawing.

3D FORM RECOGNITION



Bored envelope

GOVERNING DIMENSION VIEWS



Not to scale. Bore depth and end features are drawing-defined.

Dimension key: OD = outside diameter; ID = bore diameter; L = overall length. The key does not specify bore depth or an item-specific end profile.

Catalog reference	OD (mm)	ID (mm)	L (mm)
AT-SCG-001	16	6	42
AT-SCG-002	16	8	42
AT-SCG-003	18	10	42
AT-SCG-004	20	10	45
AT-SCG-005 *	24	12	51
AT-SCG-006 *	24	12	51
AT-SCG-007	24	10	51
AT-SCG-008	25	12	56
AT-SCG-009 *	28	14	60
AT-SCG-010 *	28	14	70
AT-SCG-011 *	28	14	70
AT-SCG-012 *	28	14	60
AT-SCG-013 *	30	16	70
AT-SCG-014 *	30	16	70
AT-SCG-015 *	32	16	85
AT-SCG-016 *	32	16	85
AT-SCG-017 *	32	18	85
AT-SCG-018 *	32	18	85
AT-SCG-019 *	32	20	85

* Codes sharing OD / ID / L require configuration identification. With an existing code, retain it and attach the drawing. Without an existing code, send OD / ID / L and a drawing as a custom enquiry; do not choose between the marked codes by dimensions alone.

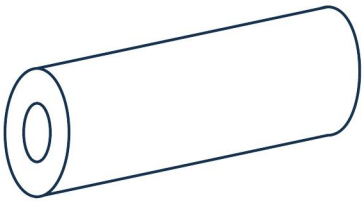
Dimensions are catalog references. Material route, finished tolerances, working surfaces, availability and order acceptance are quotation-controlled.

03 DIMENSIONAL REFERENCES

Hollow shaft size references 2 of 2

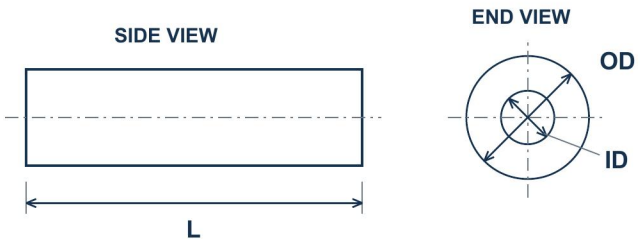
Use the complete reference code and all three dimensions. Define the bore depth, through or blind construction, end details and fixed or rotating role on the assembly drawing.

3D FORM RECOGNITION



Bored envelope

GOVERNING DIMENSION VIEWS



Not to scale. Bore depth and end features are drawing-defined.

Dimension key: OD = outside diameter; ID = bore diameter; L = overall length. The key does not specify bore depth or an item-specific end profile.

Catalog reference	OD (mm)	ID (mm)	L (mm)
AT-SCG-020 *	32	20	85
AT-SCG-021 *	32	15	85
AT-SCG-022 *	32	15	85
AT-SCG-023 *	32	22	85
AT-SCG-024 *	32	22	85
AT-SCG-025 *	32	18	74
AT-SCG-026 *	32	18	74
AT-SCG-027	40	20	85
AT-SCG-028	44	25	108
AT-SCG-029 *	49	25	108
AT-SCG-030	49	30	108
AT-SCG-031	49	28	108
AT-SCG-032 *	49	25	108
AT-SCG-033 *	49	25	108
AT-SCG-034	49	24	108
AT-SCG-035 *	49	25	108
AT-SCG-036	58	35	140
AT-SCG-037	58	30	123
AT-SCG-038	68	40	150

* Codes sharing OD / ID / L require configuration identification. With an existing code, retain it and attach the drawing. Without an existing code, send OD / ID / L and a drawing as a custom enquiry; do not choose between the marked codes by dimensions alone.

Dimensions are catalog references. Material route, finished tolerances, working surfaces, availability and order acceptance are quotation-controlled.

04 MATERIAL AND DUTY

Select the route for the actual fluid

SSiC and RBSiC are different material routes. Review chemistry and the complete shaft assembly before choosing the grade; the product name or a broad purity range does not define it.

Selection point	SSiC	RBSiC
Manufacturing route	Pressureless sintered silicon carbide	Reaction-bonded / silicon-infiltrated silicon carbide
Material structure	Dense sintered SiC; no silicon-infiltration phase	Dense SiC containing residual free silicon
Discussion focus	Chemical exposure, wear contacts and precision interfaces	Geometry and processing route, together with media compatibility
Order definition	Record the exact grade and acceptance requirements	Record the exact grade, phase requirements and acceptance basis

Match the service to the review inputs

Pump duty	Information that changes selection
Chemical circulation	Fluid identity, concentration, normal and peak temperature, exposure time and cleaning chemistry.
Slurry or suspended solids	Particle size and solids content, bearing or sleeve pair, clearance, lubrication and wear locations.
Seawater or brine	Chloride level, sand content, pressure, temperature changes and all other wetted parts.
Magnetic drive or sealless	Fixed or rotating role, shaft-to-bearing fits, support span, speed, load and dry-running risk.

Keep material data separate from shaft ratings

A material temperature limit is not the allowable temperature of a loaded pump shaft. Material strength does not establish the permitted shaft load, support span or speed. The drawing, assembly and service conditions must be evaluated together.

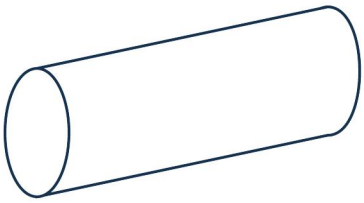
State the required material route, grade and composition basis in the enquiry. Link any material data to that exact grade and its test conditions; the agreed order specification controls the supplied material.

05 DRAWING DEFINITION

Specify the finished shaft

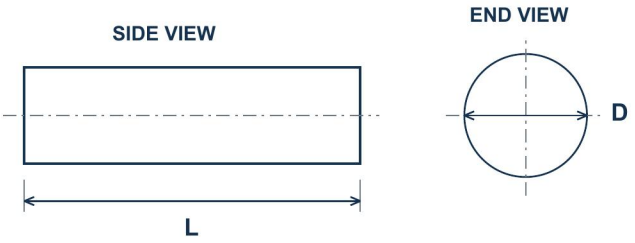
For a new design or replacement, submit a drawing with its revision. A sketch or old-part photograph can start the discussion; critical interfaces still need dimensioned definition.

3D FORM RECOGNITION



Solid envelope

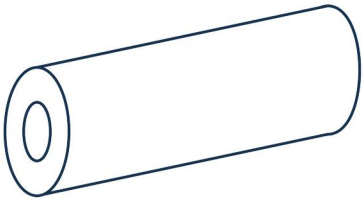
GOVERNING DIMENSION VIEWS



Not to scale. End features are drawing-defined.

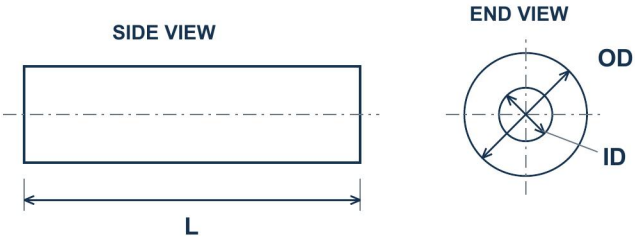
Solid form inputs	What to define
D and L	Finished diameter and overall length in mm; tolerance for each dimension.
Profile and interfaces	For a stepped part, dimension every segment and transition separately; identify bearing seats, seal contact zones and coupling features.

3D FORM RECOGNITION



Bored envelope

GOVERNING DIMENSION VIEWS



Not to scale. Bore depth and end features are drawing-defined.

Hollow form inputs	What to define
OD, ID and L	Finished outside and bore diameters, overall length and their tolerances.
Bore construction	Through, blind or shaped bore; depth, end condition, bore finish and inspection access.
Wall and alignment	Required minimum wall, measurement position, bore alignment and permitted wall variation.

Common requirements for both forms

Define datums, straightness, roundness, coaxiality and radial or end runout as applicable. Identify surface finish by contact zone and state the measurement method. Dimension all grooves, flats, threads, shoulders and edge details on the part drawing.

Both keys show basic envelopes only and are not manufacturing drawings. Additional geometry and achievable requirements are reviewed for the actual part.

06 ACCEPTANCE AND SUPPLY

Control the interfaces through delivery

ADCERAX coordinates drawing review, production and inspection with manufacturing partners against agreed specifications. Define the shaft's critical contacts and acceptance records before production.

Stage	Shaft-specific agreement
Drawing review	Identify fixed or rotating duty, bearing and seal contacts, bore construction, support span and assembly method.
Material and processing	Confirm the grade and the surface condition for each segment; evaluate forming, sintering and finishing for the actual geometry.
First-article acceptance	Agree the drawing revision, measured features, datum setup, sampling, report content and any trial-fit or functional checks.
Repeat supply	Keep the accepted drawing and material specification linked to the part reference; agree change notification and repeat-order identification.

Inspection requirements to include in the order

Specify dimensional and geometric limits, measurement locations, surface finish, and acceptable edge or surface defects. Define material documents and any service test separately. Inspection methods, sampling and reports are agreed for the order; a list of possible checks is not a statement that every shaft receives every test.

Handling and installation

Keep bearing seats, bore edges and end features protected from impact. Before assembly, check for visible chips, cracks and contamination, and clean the mating components.

Follow the pump manufacturer's assembly procedure. Confirm alignment and the specified fit; avoid forcing the ceramic into position or applying concentrated loads. Confirm the permitted lubrication and dry-running conditions for the assembly.

Packing and repeat-order identification

Agree individual separation and cushioning, protection of finished surfaces and ends, and any support needed for slender shafts. Define package quantity, part and revision identification, destination and the required delivery schedule in the order.

During service, record wear at consistent locations and investigate changes in vibration, noise, temperature or flow. Keep stored shafts dry, padded and separated from tools and loose parts.

07 ENGINEERING RFQ

Send the reference and working conditions

Start with the part reference or drawing, its role in the pump, and the quantity. Add the details below that are already available; they let ADCERAX identify the next engineering and quotation steps.

Existing catalog reference	New or replacement drawing
Quote the full AT-SCB or AT-SCG code and this catalog revision. Add the required length where a range is shown.	Attach the drawing, model, sample details or photographs of the old part, including both ends.
Confirm OD / ID / L as applicable, bore type and depth, end features and any deviations.	State the drawing revision, material, dimensions, tolerances, datums and critical contact surfaces.
For codes marked *, include the distinguishing configuration and drawing.	For replacement parts, include the pump model, assembly position and available BOM or old-part number.

Complete the engineering brief

Input	Include with either route
Material	SSiC / RBSiC or selection request; grade and any composition or documentation requirement.
Duty and assembly	Fixed or rotating role; mating bearing, sleeve and seal; support span, load direction, speed and start-stop cycle.
Fluid and temperature	Composition, concentration, particles, lubrication, pressure and normal / peak temperatures.
Acceptance	Surface finish, geometric limits, inspection points, first-article approval and required reports.
Supply	Quantity, prototype or repeat stage, packing requirements, destination and target schedule.

Send your drawing for engineering review and quotation

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Online engineering enquiry | Product page

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