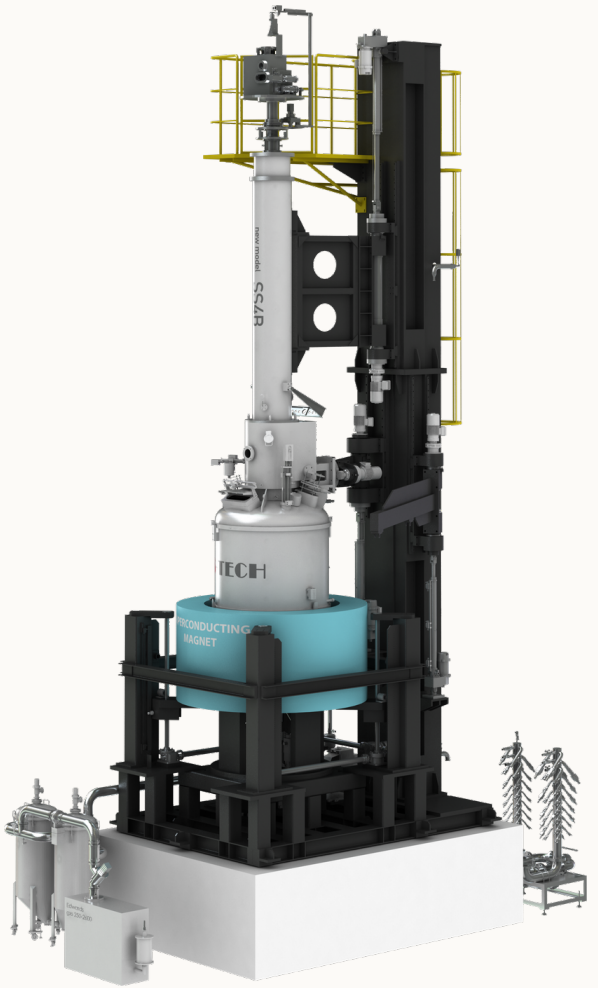
DESIGNED AND MANUFACTURED IN SOUTH KOREA

Crystal growth equipment

Crystal Growth.
Engineered for Intelligence.

In-house design, manufacturing and control software.



SS4B / 12 in semiconductor grower

Equipment and software expertise

Designed and manufactured in South Korea.
A Korean manufacturing option for supplier diversification.

In-house equipment engineering

Equipment design data and control software support fault analysis and retrofit planning.

In-house manufacturing

Assembly, commissioning and FAT in-house.
Incoming inspection of machined parts.

In-house AI and software team

Our team develops AI using its knowledge of S-TECH equipment and native control software.

Deep grower knowledge to solve your requirements.



S-TECH grower assembly facility, Daegu, South Korea

1990	Company established	2010	R&D center established

Growers by application

S-TECH Czochralski crystal growers.

Semiconductor

SS4B

Semiconductor 300 mm



Typical ingot dia.	**300 mm**
Charge	**440 kg**
Hot zone	**32 in**
Crystal length	**2,000 mm**
Max. height	**10,107 mm**

Cathode

SS6B / S530B

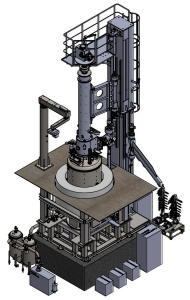
Cathode semi parts



Typical ingot dia.	**450–530 mm**
Charge	**440 kg**
Hot zone	**32 in**
Crystal length	**633–988 mm***
Max. height	**10,530 mm**

SS37A

Semi parts, large size

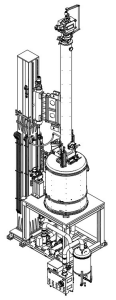


Typical ingot dia.	**395–620 mm**
Charge	**850 kg**
Hot zone	**37.1 in**
Crystal length	**1,500 mm**
Max. height	**10,720 mm**

Photovoltaic

SP40

Photovoltaic



Typical ingot dia.	**308 mm**
Charge	**730 kg**
Hot zone	**36 in**
Crystal length	**4,000 mm**
Max. height	**13,005 mm**

* Crystal length 633 mm at Ø530 mm / 988 mm at Ø450 mm. Specifications vary with hot-zone and customer configuration.

Customized for your process

In-house design and manufacturing let us adapt installed growers and handling tools to your needs.

01 / EQUIPMENT RETROFIT

Retrofit capability · project-specific scope

Semiconductor size upgrade

300 → 450 mm

SS4CL

Larger crystal size on an installed semiconductor grower.

Application conversion

300 → 600 mm

SS4C2

Semiconductor grower converted for cathode crystal growth.

Cathode size upgrade

450 → 600 mm

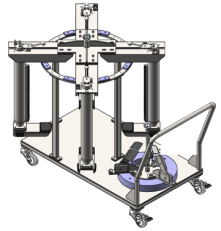
SS6B2

Larger crystal size on an installed cathode grower.

Installed structures are reused where the configuration allows. Scope is defined for each grower.

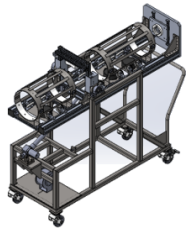
02 / CUSTOM HANDLING TOOLS

Representative examples · custom-built to your requirements



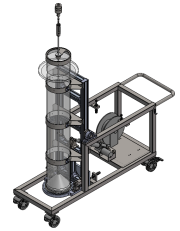
Hot-zone handling jig

Lifts and moves hot-zone assemblies on a mobile frame for maintenance.



Ingot removal cart

Receives the grown ingot and transfers it safely from the grower.



Dumping cart

Controlled lowering and dumping of material into the grower.

Equipment automation

Operating interfaces, remote monitoring and process control for crystal growth.

01 / OPERATING INTERFACE



Equipment operation

HMI

Access function pages and view key operating parameters.



Equipment monitoring

CMS

HMI, camera feeds and process status in one view.

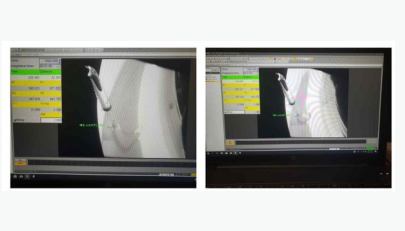
02 / AUTOMATION IN SERVICE



Crystal diameter control

HPCS

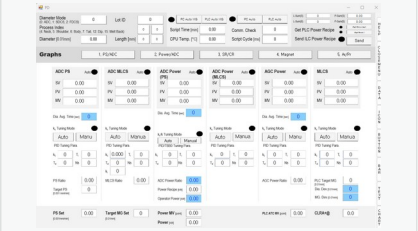
Controls crystal diameter during body growth.



Melt-gap control

MLCS

Maintains the target melt gap.



Combined process control

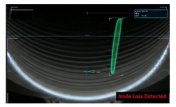
PPS

HPCS and MLCS with uniform seed lift speed support crystal quality.

IN DEVELOPMENT

Loss Check

Vision detects body structure loss and alerts operators.



Most operations still require operator checks and input.

AI built on equipment expertise

Our in-house team develops AI with direct knowledge of S-TECH equipment and control software.

01 / EQUIPMENT KNOWLEDGE

Equipment and control expertise

Signal meaning and control logic
Setpoints vs. equipment response
Growth phases and operating states

02 / SOFTWARE & DATA

Equipment data in context

Collect and time-align signals
Link runs, images and events
Structure data for analysis and AI

03 / OPERATOR SUPPORT

AI-assisted operator decisions

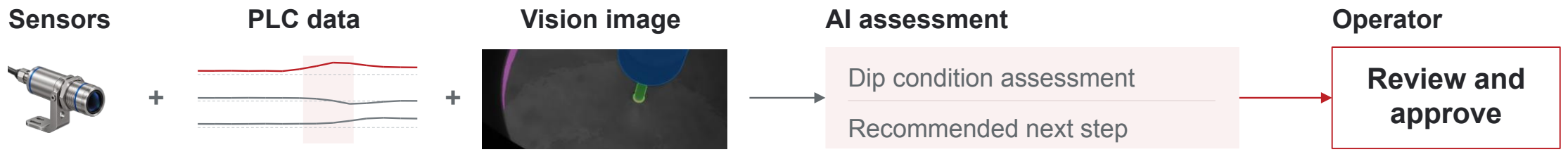
AI Vision interprets observations
AI Co-Pilot explains and recommends
Evidence supports operator review

Your process knowledge complements our equipment and control expertise.

USE CASE

AI Good Dip Assistant

AI enhances existing dip assistance with assessment and recommendations.



Data privacy and flexible integration

We protect customer data and adapt AI to your existing software environment.

01 / DATA PRIVACY

Data policies agreed before deployment

Storage, inference and training locations, permitted data use, access rights and external transfers are agreed before deployment.

02 / SYSTEM INTEGRATION

Keep your existing software

No full S-TECH software platform required. Connect to existing applications within an agreed interface and integration scope.

03 / OPERATOR CONTROL

Operator approval for AI actions

Operators approve proposed AI-driven actions. Action limits and equipment-control boundaries are defined for each application.

04 / STEP-BY-STEP VALIDATION

Validate before expanding

Start with a defined equipment and feature scope. Review workflows and evaluation criteria before deciding the next step.

Agree scope → **Validate on equipment** → **Expand by agreement**

Equipment review, delivery and support

Equipment demonstrations, factory acceptance, site installation and operating support.

Before purchase

Equipment demonstration

Review functions and operating behavior for your intended application.

Automation and AI review

Discuss workflows, operator approvals and the functions to be demonstrated.

Demonstration scope

Agree the format, availability and information that can be shared.

Delivery and operation

Factory commissioning and FAT

Assembly and in-house commissioning before shipment to the customer.

Installation and SAT

S-TECH engineers install the equipment and conduct site acceptance tests.

Service and spare parts

Define support coverage, spare parts and project responsibilities.

Demonstration details and support coverage are agreed per project, subject to confidentiality requirements.

S-TECH

Your application and sourcing requirements

Equipment selection, customization and supplier evaluation.

Your application and priorities

Application	Material, end use and process requirements
Target ingot	Diameter, length and charge requirements
Existing systems	Grower, site constraints and existing software
Improvement scope	Growth, handling, automation or monitoring
Sourcing priorities	Supplier diversification and qualification criteria

Discuss your application with us

Align equipment and software, review integration requirements and define the next step.

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