

Creative Solution Company with Advanced Technology

SBB TECH



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I. About us

1) Company Overview

Company Name SBB TECH Co., Ltd.

Founded November 18, 2000

Co-CEOs Jae-wan Ryu,
Jin-woong Song

Listed October 17, 2022

Capital KRW 3.08 billion

Employees 91 (as of May 2025)



Head Office / Factory

22, Gimpo-daero 2918beon-gil,
Wolgot-myeon, Gimpo-si,
Gyeonggi-do, Korea

R&D Center

#1210-1215, Leader's Tower,
228 Gonghang-daero,
Gangseo-gu, Seoul, Korea

Actuator Plant

Ipjang-myeon, Cheonan-si,
Chungcheongnam-do, Korea



Actuator

A drive module that functions as a robot joint
Core component used across various types of robots
Composed of reducer, driver, encoder, brake, and motor



Reducer

Developed Korea's first domestically produced robot reducer in 2009
Proprietary core technology at a global top-tier level
Applications: semiconductors, displays, defense, service/transport robots



Bearing

Flexible slim bearing manufacturing technology
Cross roller bearing manufacturing technology
Localized production of ultra-thin bearings

I. About us

2) About SBB TECH

Global Top3 A precision robot drive module specialist



Leading the
market
through
innovative
technology

A people-
centered
company

Driving
sustainable
growth

CEO

Jae-wan Ryu | CEO

B.S. in Mechanical Design Engineering,
Seoul National University
Former: Daewoo Heavy Industries
Developer of reducers and robotic systems
Former: Naontech Co., Ltd.
Developed LCD transfer robots
Developed vacuum robots for
semiconductor production
Former CEO: Gidan Tech Co., Ltd.
Developed automotive fuel pumps
Mass-produced motor components for fuel
pumps
Former CEO: Inoswell Co., Ltd.
Developed robots for extreme
environments
Developed maintenance robots for nuclear
power plants

Jin-woong Song | CEO

B.A. in Business Administration, Yonsei University
Former: SK C&C
Former: SK Telecom / SK China
Former COO: GlowOne Co., Ltd.
Former COO: SBB TECH Co., Ltd.

Key Executives

Laegeun Lee | Head of TC Center

- B.S. in Industrial Engineering, Soongsil University
- Former: Project Manager, Myunghwa Industrial Co.
- Expert in process improvement and quality control

Sangkyu Jung | Head of PC Center

- B.S. in Industrial Engineering, Pusan National University
- Former: Sungjin ENG
- Oversaw harmonic reducer production
- Expert in process design

Jungho Lee | Deputy Head of TC Center

- M.S. in Materials Science, Korea Polytechnic University
- Former CEO, RST
- Key contributor to localization of harmonic reducers
- Expert in custom structural design

I. About us

3) About songhyun

Connecting Technology and Tomorrow

‘songhyun’

Founded in 1991,
we took our first step into the world with the
enduring vitality of the evergreen tree and the
morning sunlight that brings all things to life—
driven by a vision to build a better world.

Songhyun Group
continues its commitment to a brighter future
for humanity,
realizing its core values under the slogan:
“Connecting Technology and Tomorrow.”

CEO

Moohyun Song

Chairman, Songhyun Group (2012–Present)
CEO, KPF Co., Ltd. (2008–Present)
CEO, TMC Co., Ltd. (Founded in 1991)



Management Philosophy

VISION
Creative Solution
Company with
Advanced Technology

MISSION
Creating and Providing
Future Value for Our
Customers Through
Core Component
Technologies

Core Value
Challenge Innovation
Harmony

Slogan
Connecting
Technology
and Tomorrow

4) Major Affiliates Overview

Industrial fasteners and automotive components



KOSDAQ-listed

Revenue: KRW 782 billion

Total Assets: KRW 662.3 billion

Total Equity: KRW 255.9 billion
(*Consolidated Financial Statements*)

Automotive Electronics & LED Lighting



Revenue: KRW 24.1 billion

Total Assets: KRW 14.8 billion

Total Equity: KRW 100 million
(*Consolidated Financial Statements*)

Marine & Optical Cable



Revenue: KRW 375.6 billion

Total Assets: KRW 235.9 billion

Total Equity: KRW 76.8 billion
(*Consolidated Financial Statements*)

Drive modules and reducers



KOSDAQ-listed

Revenue: KRW 5.5 billion (2024)

Market Cap: KRW 133.7 billion (*as of April 2025*)

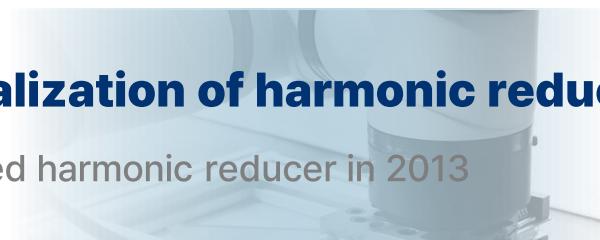
5) Corporate Identity

A Global-Standard Drive Module Company Leading the Localization of Robotics Technology

1

Korea's first localization of harmonic reducers

Successfully developed harmonic reducer in 2013



3

Accelerating sales growth in reducer segment

Expanding applications and product portfolio through differentiated positioning



4

Smart Actuators & Smart Movers

Preparing for Future Markets with Integrated Design and High Cost-Efficiency



6) Product Line-up

Comprehensive drive module portfolio from high-precision reducers and semiconductor bearings to actuators

Drive Modules

Actuator Robots



ACTUATOR

Reducers



Harmonic type



RV type



Customized robots



Long-
neck
worm type



Planetary type

Semiconductor Bearings

Semiconductor robot modules



WRIST

Precision bearings



Ultra-thin
semiconductor bearings

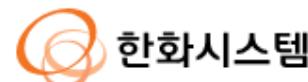
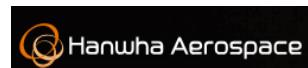
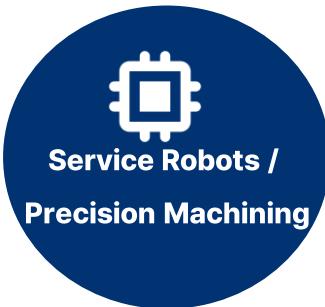


CMP



Hybrid (special type) bearings

7) Key Clients



I. About us

8) Major Milestones

Established core technology in ball and bearing manufacturing	Successfully localized harmonic reducers	Toward Becoming a Global Top-Tier Reducer Manufacturer
2000 Incorporated as a legal entity	2010 Developed compact reducers	2018 Joined the Songhyun Group
2005 Accredited as an R&D institute	2011 Developed RV reducers	2019 Recognized as an Excellent SME in Materials & Components; Presidential visit
2008 Developed ceramic balls and bearings for extreme environments Received USD 1 Million Export Tower Award Began mass production of ceramic balls and bearings Localized ROBO bearings and supplied to Samsung Electronics & SK Hynix	2013 Successfully developed ROBO Drive harmonic reducers 2014 Completed patented design and commercialization plan for harmonic reducers 2015 Selected by Defense Agency for Technology and Quality (DTaQ) as a defense venture (Gumi) 2017 Began mass production and sales of reducers Developed MR actuators for collaborative robots Selected as Korea Robot Company of the Year (Robot Components Category)	Signed Smart Factory Partnership with Samsung Electronics as a Promising Materials & Components Company, Developed compact collaborative robots 2020 Awarded Korea Technology Grand Prize (Minister's Award) 2021 Selected as a Top Materials & Components Company (Ultra-Precision Drive Components) Expanded product line-up including RV reducers Developed ultra-low-cost drive modules for small manufacturing robots Listed on KOSDAQ 2022 Developed hollow reducers for multi-joint robots
		2023 Named Korea Robot Company of the Year (Robot Components Category) 2024 Named Korea Robot Company of the Year (Robot Components Category)

9) Key Production Facilities

Hobbing Machine

100H Hobbing Machine



Power Skiving Machine



Hobbing Machine



Shaper Machine



Shaper Machine

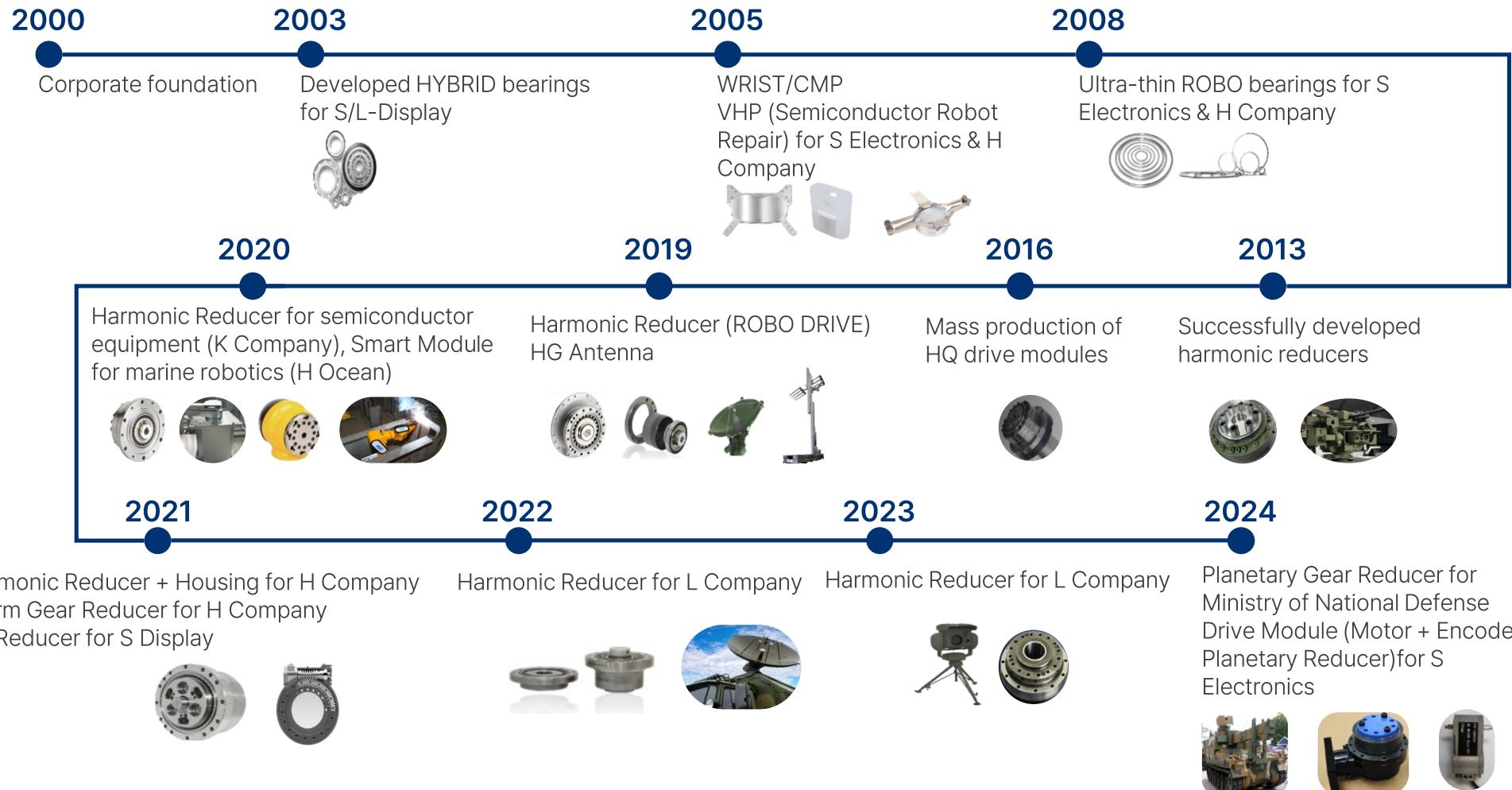


CNC Lathe



II. Key Products & Projects

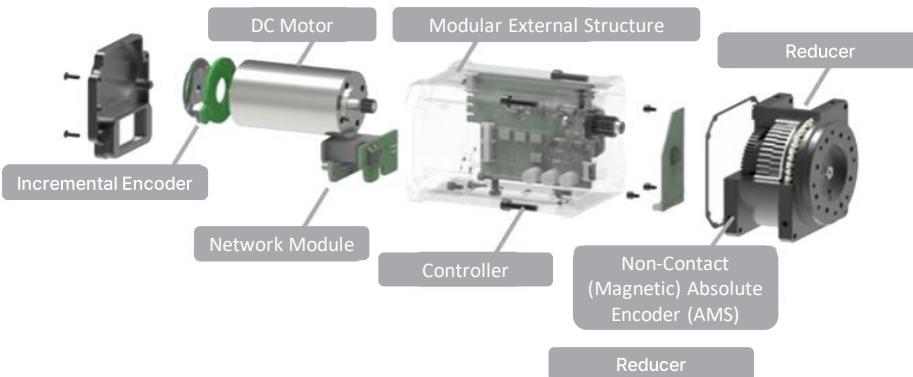
Extensive and Unmatched Track Record in Precision Reducers and Drive Components



Smart Actuators

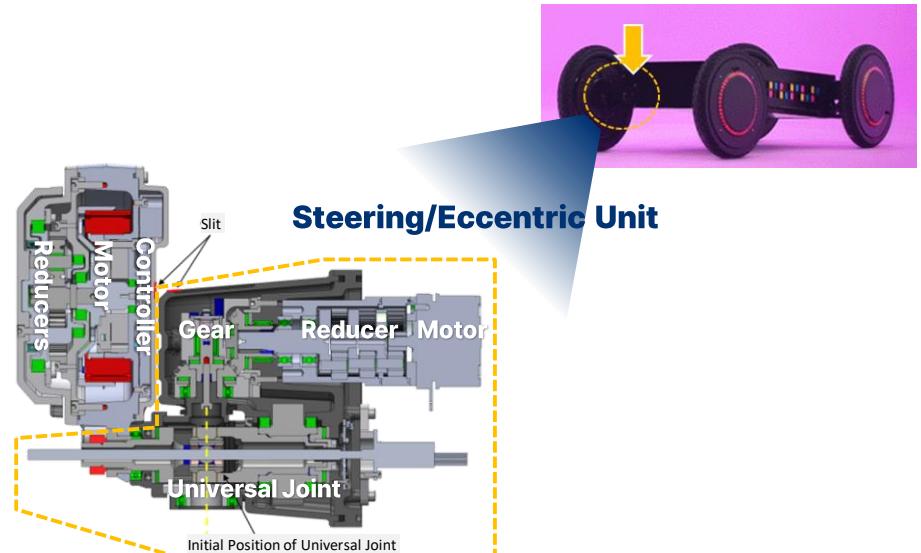
Actuators for robotics and mobility applications

- 1) Drive modules that function as robotic joints
- 2) Core components across various robot systems
- 3) Composed of reducer, driver, encoder, brake, and motor



Development Projects

- Compact Mobility Platform (Mobile Eccentric Droid)
- DnL Steering Eccentric Module – under development



Drive Module Mass Production Project

Development Stages
(5 Steps)

Product
Planning

Product
Design

Process
Design

Validation

Mass Production
Management

Actuator Development Projects (From design to mass production to reliability testing)

Full development of smart modules and
robotic systems (mechanical + control)

Customized welding
robots for shipyards



3-axis substrate
transfer robots



Drive Module with Driver

OHT Turntable Unit, Solar Cell
Production Line



Reducer + Housing

Remote Controlled Weapon
Stations (RCWS)



II. Key Products & Projects

1) Applications of Precision Reducers

1



Industrial Robots

Multi-joint robot arms
Precise positioning control
Excellent repeatability

2



Collaborative Robots

Compact structure, Low noise, High control accuracy

3



Semiconductor / Display Equipment

Wafer processing systems
LCD panel manufacturing equipment
Precision positioning axes

4



Aerospace Industry

Satellite antenna control systems, Space robotic arms, Altitude control systems

5



Medical Devices

Surgical robots,
Rehabilitation robots,
Medical imaging systems

6



Defense Industry

Drones, Autonomous military robots, Radar tracking systems

7



Optical Equipment Industry

Pan/tilt systems, Precision tracking devices, Telescope rotation mechanisms



II. Key Products & Projects

A Leading Korean Company in Commercializing Harmonic Reducers

Expanded sales of harmonic reducers for collaborative, SCARA, and TR robots



▲ 현대로보틱스



㈜티로보틱스
(주)한화/기계

Increased supply of reducers for semiconductor and display production robots



SAMSUNG DISPLAY

LG디스플레이

京东方
BOE



Expanded supply of harmonic reducers for the 29-axis K9 self-propelled howitzer, remote weapon stations, and bomb disposal robots, alongside rising demand for domestic production.



Growing sales of components and modules for large-scale mobile welding robots and portable welding robots



▲ 현대중공업

Expanding References in Precision Reducers

1

Defense Industry

Sole domestic supplier of localized precision reducers

RCWS system integration project
Hanwha Aerospace

High-Capacity Tactical Radio (HCTR)
Huneed Technologies

K10 Ammunition Resupply Vehicle
Ministry of National Defense Maintenance Depot

Thermal Observation Device (TOD)
LIG Nex1

2

Industrial & Collaborative Robots

Industrial Supply, Product Expansion into Collaborative Robots

Domestic collaborative robot manufacturers (Company A, Company B)

Three-point reducer for semiconductor equipment

sample testing in progress with Laontech

Semiconductor transfer equipment **CORO**

Customized welding robot for shipyards

Hanwha Ocean

Automatic welding system
Romax Technology

3

Service Robots

Specialized service robots

Medical imaging & equipment
KOYOUNG Technology

Dental CAD/CAM robots
DIO & Probotics

Material handling robots **ANP**

Developing standardized reducers for service robots

II. Key Products & Projects

Semiconductor Bearings & Localization of Specialized Types

HP+/VHP+ ROBOT PIVOT & BEARING
: SBB3S8T4TA10LR



HP/VHP PIVOT BEARING((4.75T)
: 4S-A10Si-3N4



VHP/VHP+/PRODUCER ROBOT HUB BEARING
: S2-X080PTP-3N4



HP+/VHP/VHP+ ARM UPPER BEARING
: 4S-R6PKN-3N4



HP+/VHP/VHP+ ARM LOWER BEARING
: 4S-F4PKN-3N4



*Dual Blade Linkage w/
Individually Leveled Arms*

Magnetic Couplings

Improved VHP+ Wrist

*Direct Drive
Servo Motors*



Expanding Bearing References

Semiconductor Clients

Company A

Applied to AMAT equipment (VHP, Robo-Bearing, WRIST)

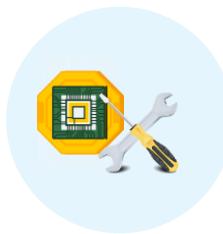
Company B

Applied to EBARA equipment (CMP parts)

Company C

Expanding supply of hub bearings for 300mm wafers

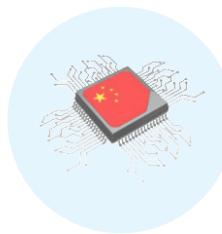
Market Trend



Segmentation of component manufacturers and equipment repair providers in the semiconductor industry



Increasing bearing demand in the 300mm wafer market



Growing demand for high-quality bearings from Greater China semiconductor and display companies

Defense Clients



- Rising demand for ultra-thin hybrid bearings
- Localization project with D Company
 - Supplied for K2 Black Panther (Poland project).
 - Currently developing for K21 and K30W

Expanding engagement with other defense contractors



III. Technology Highlights

Developing compact actuators for robotic hand applications



Possesses core technology for planetary gear reducers



Small-module gear design capable of multi-stage transmission and low backlash

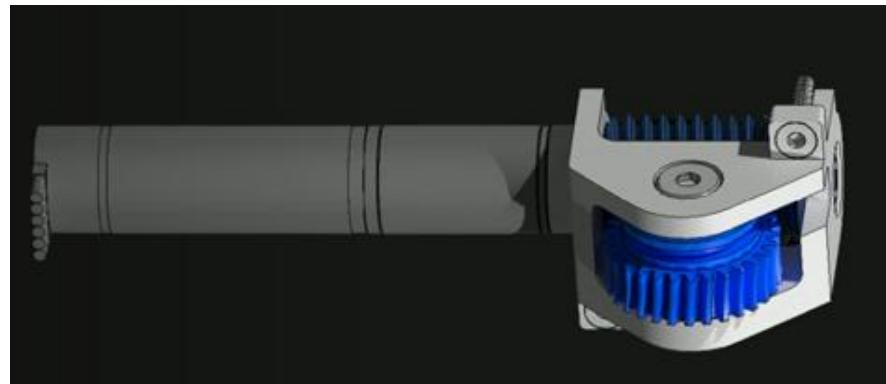


Established dedicated production equipment for small-module gears



Product development currently in progress

Example: Hand-Type Actuator



III. Technology Highlights

Development of Linear Actuators



Proprietary technology in planetary roller screws, leveraging planetary gear design expertise



Small-module gear design enabling multi-stage configuration and low backlash

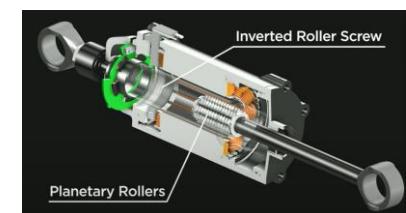


Established dedicated production equipment for small-module gears



Product development under review

Example: Linear Actuator



Harmonic Reducer

Components and internal structure of precision reducers



Example of operating principles in precision reduction systems



Core Technologies in Precision Reducers

Core Technologies

Advanced design capabilities

- Proprietary tooth profile design with multiple patents
- Structural design enabling high-efficiency torque output

Ultra-Precision Machining

- Machining technology for lightweight, flexible cups
- High-precision tooth profile processing

In-house bearing production

- Production, including elastic deformation bearings

Measurement Technology

- Designed and built Korea's only in-house test equipment for reducers

Intellectual Property Portfolio

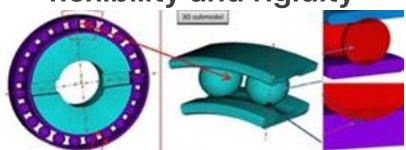
Patents 31	Design 1	Utility model 1
Trademarks 10		Copyright 1

III. Technology Highlights

Secured top-tier reducer technology

Flexible slim bearing manufacturing technology

Bearing design technology balancing flexibility and rigidity



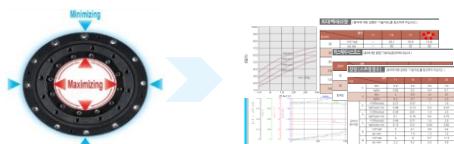
Cross roller bearing manufacturing technology

Support bearing design technology for structural optimization



Product customizing technology

Adjusting standard specifications while balancing product performance



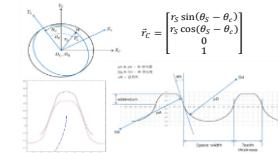
Core source technology



Productization technology

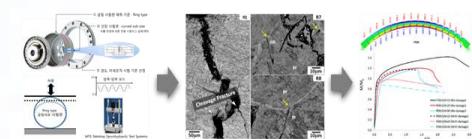
Tooth profile design technology

Tooth profile design technology for optimized gear meshing



Material & heat treatment technology

Forging and heat treatment process technology for improved fatigue life



Reducer performance evaluation technology

Database for basic performance and reliability of reducers

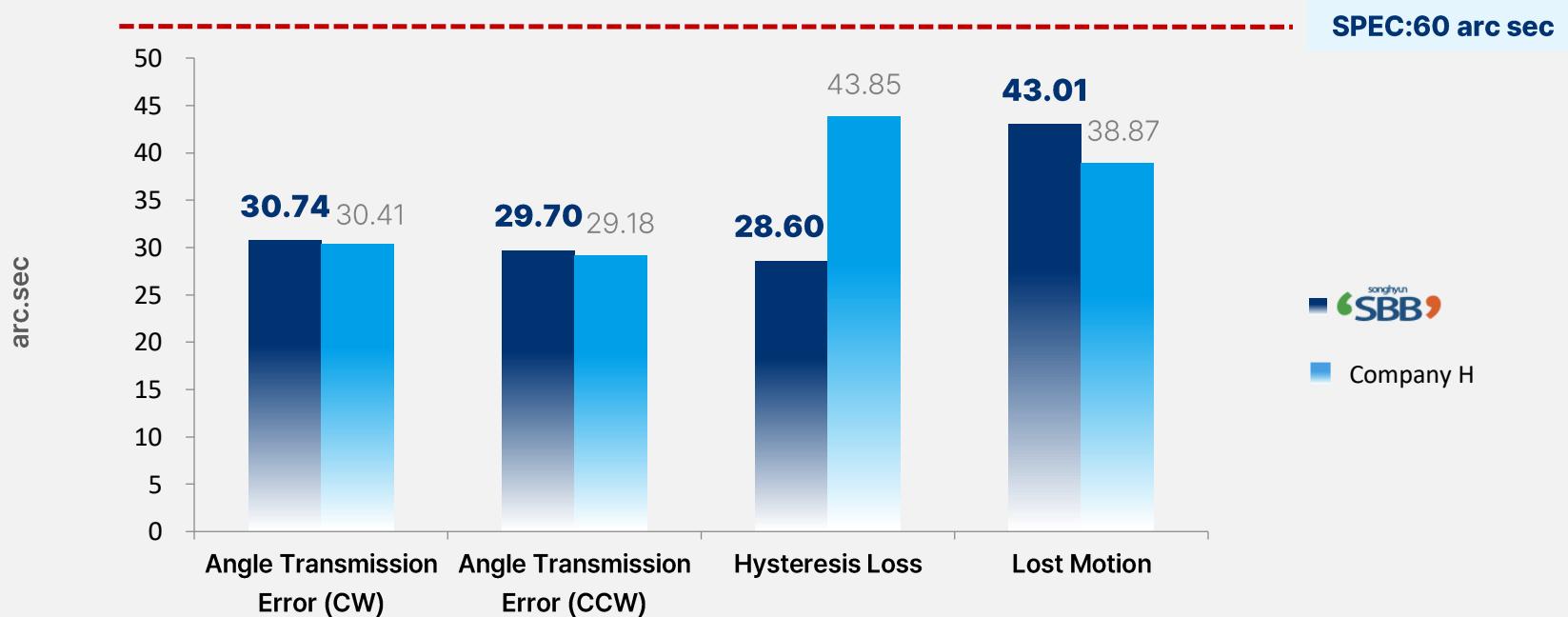


III. Technology Highlights

Secured top-tier reducer technology

Achieved higher precision levels compared to H Company
(leading Japanese manufacturer)

Internal comparative test result on reduction ratio:
SSHG-25-100



Development of Low Reduction Ratio ROBO Drive (Harmonic Type)



Minimum standard reduction ratio: 50:1
→ Developed Robo Drive (low-ratio version: 30:1)



Implemented low reduction ratio through 3-point contact method



Achieved stable angle transmission error, high rigidity (150%), and 30% performance improvement

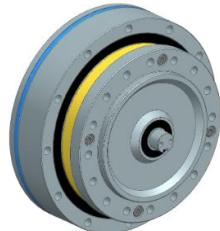


Prototype development and performance/durability testing completed

SSHG-25-30-2UJ-3P

SSHG-32-30-2UJ-3P

SSHG-32-30-2UH-3P



III. Technology Highlights

Development of Slim-Type ROBO Drive (Harmonic Reducer)



Ongoing lineup of
slim-type reducers
(CSD, SHD types)



Secured performance
and durability equal
to or exceeding
competitors

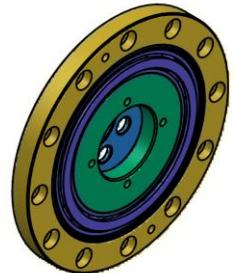


CSD and SHD types
Mass production
tooling secured



Prototype
development and
performance/dur
ability testing
completed

CSD Type: Cup-type



SHD Type: Hollow-shaft type



Development of Lightweight Harmonic Reducer



Targeting over 40% weight reduction compared to standard models



Secured performance and durability equal to or better than competitors

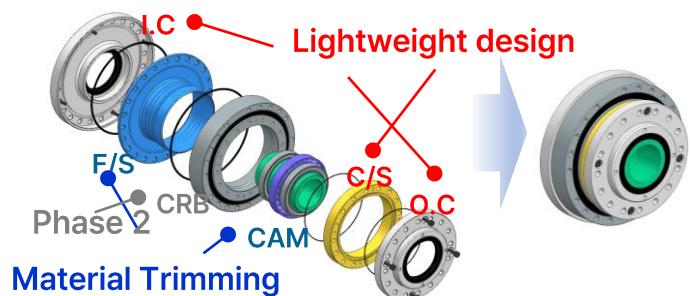


Obtained key technology patents



Prototype development and performance/durability testing completed

Component Weight Reduction



CRB (Cross Roller Bearing) weight reduction



Development of Planetary Gear Reducer for QDD

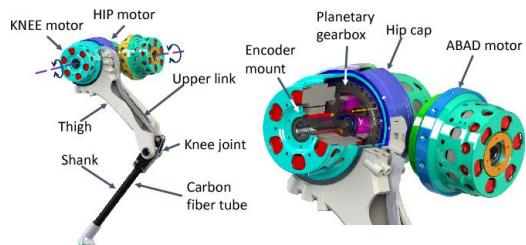
QDD Planetary Gear

Technology Development

Development of planetary gear reducer for QDD (Quasi Direct Drive)

Key Details

1. Possesses core technology for planetary gear reducer development
2. Optimization of back driving torque
3. Established dedicated production equipment for small gear manufacturing
4. Prototype development in progress



Multi-Stage Planetary Gear Reducer

Technology Development

Development of multi-stage planetary gear reducer

Key Details

1. Possesses core technology for planetary gear reducer development
2. Small-module gear design enabling multi-stage & low-backlash performance
3. Utilized harmonic reducer production equipment
→ Established dedicated production equipment for small (low-module) gears
4. Prototype development completed and mass production initiated at SBB Plant in Ipjang



Bearing Technology

Ultra-Thin Ball Bearing



Precision machining of flexible components

Features

- Ultra-thin bearing with inner and outer ring thickness of 1.2–2.5 mm, width of 2.5 mm, and shaft diameter of $\Phi 1.061$ mm
- Radial, 4-point contact, angular contact types
- Precision ceramic balls
- Thin metal sea

Applications

- Ultra-compact, slim, lightweight
- Vacuum/cleanroom environments
- Robot hub drives
- Semiconductor manufacturing equipment

WGB Bearing



Core component for the lifespan of harmonic reducers

Features

- Balanced flexibility and rigidity
- Application of ultra-thin ball bearing technology
- Elliptical shape

Development Direction

- Integrated inner ring and cam
- Combination of dissimilar materials
- Optimization of material and heat treatment processes

Strategic Highlights

1

Actuator 'Smart Mover'

- Integrated design:
'Reducer + Motor + Robot
Electronics'
Optimized solution
- Cost competitiveness:
Inorganic growth in motor/robot
electronics sectors

2

Leading Korean Precision Reducer Company

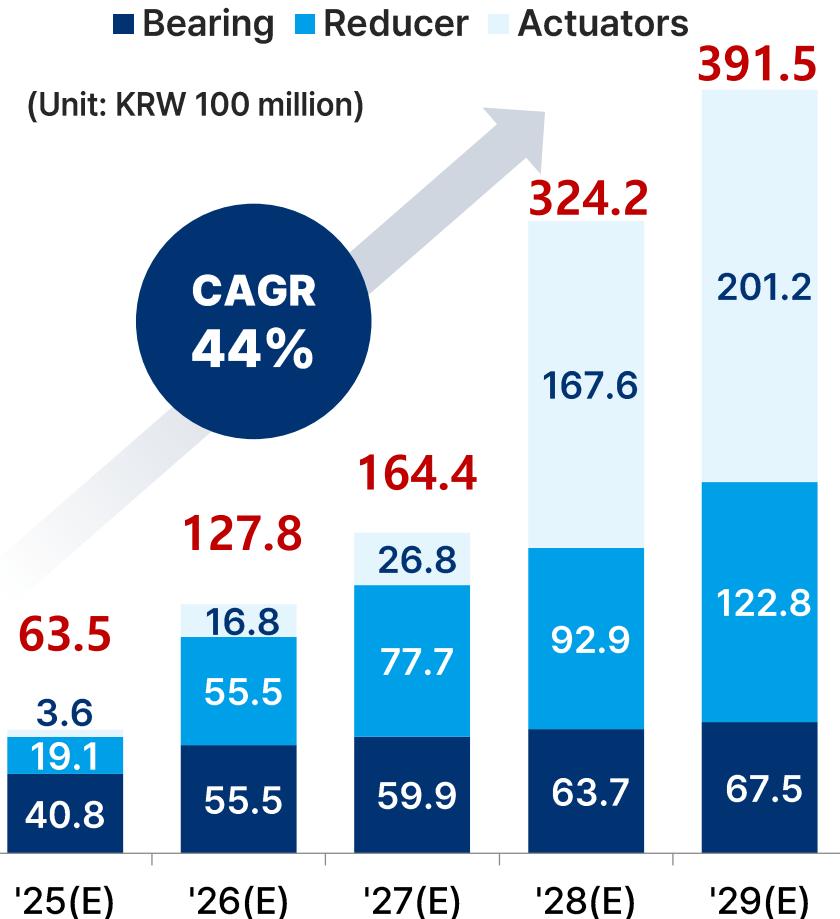
- Korea's top-tier group
(Reference, sales, capacity)
- Holds a distinct technical
advantage
(Performance, proprietary tooth
profile, bearings)
- Defense market leadership
based on localization

3

'Premium Cost-Performance' Positioning of Reducers

- Equivalent performance & quality
to H Company, 60%–80% of their
pricing, fast delivery response
- Actively targeting the Greater China
market

Growth Driven by Expanded Product Portfolio



Actuators

- DNL Module Sales for Mobility (2026–2029)
New project expected to enter mass production in 2026

Reducers

- New orders from collaborative robot makers
- Expanded product lineup (planetary gear)
- New defense RCWS project → revenue from 2026
- New business for Chinese SCARA robots

Bearings

- Semiconductor market recovery (Samsung, SK Hynix)
- Increased volume for TSMC overseas
- New defense bearing contracts

Thank you

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