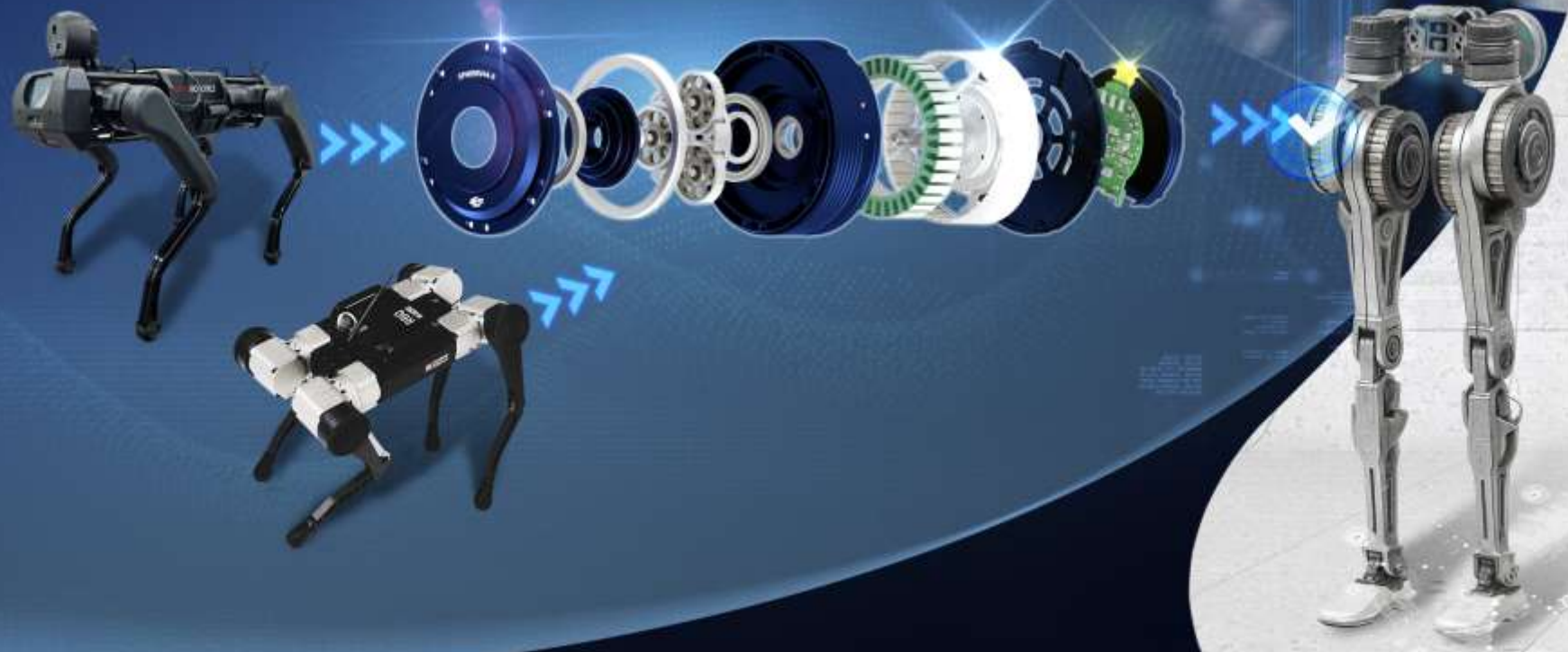
(주)에스피지

THE NEW

SPG 2026



Disclaimer

This material has been prepared for company introduction, IR activities, and for the convenience of investors.

This material may contain information regarding the company’s future activities, financial performance, or other forward-looking statements. The company hereby clarifies that such information is only a projection and may differ from actual activities or results. Therefore, investment decisions should not be made solely in reliance on the forecasts, information, or forward-looking statements contained herein. All investment responsibility rests entirely with the investor





(주)에스피지

Video with precision actuator



Company History and Status

1970s

1973. 05. 21
Founded as Sungshin Co., Ltd.

1978. 01. 11
Completed the construction of the production facility for small-sized, high precision AC motors and commenced the production.

1988. 11. 30
10 Million-Dollar Exportation Tower award for the Trade Day (Presidential Award)

1990s

1991. 03. 21
Founded as SPG Co., Ltd.
(Inauguration of the CEO, Jun ho Lee)

1991. 05. 01
Commenced the production of geared motors

1993. 02. 25
Named as a Technology-Intensive SME
(Ministry of Science and Technology)

1993. 12. 30
Relocated the HQ from Bucheon to the factory at Namdong.

1994. 01. 01
Commenced the production of standard geared motors.

1996. 10. 15
UL mark certification
(SPG)

1997. 01. 22
CE mark certification
(SPG)

1998. 07. 20
Recognized as a venture company.
(Ministry of SMEs and Startups, Incheon Branch)

2000s

2000. 01. 19
ISO 9001 certification
(SPG)

2000. 05. 12
TUV mark certification
(SPG)

2001. 11. 30
5-million-dollar Export Tower Award, the 38th Trade Day (Awarded by the Minister of Industry, Trade, and Resources, KITA)

2002. 07. 23
Enlisted with Korea Securities Industry Association
Enlisted in KOSDAQ market

2002. 11. 01
Presidential Award for New Technology Contribution

2002. 12. 04
Small-sized geared motors, recognized as the 'top class product of the world) by the Ministry of Industry, Trade, and Resources

2003. 12. 30
US incorporation established
(SPG USA, Inc)

2004. 03. 04
Chinese local incorporation establish
(SPG Motor (Suzhou) LLC)

2008. 05. 20
Established the Vietnamese local incorporation.
(SPG VINA CO.,LTD)

2009. 11. 06
Named as a KOSDAQ HIDDEN CHAMPION
(Korea Stock Exchange)

2010s

2014. 04. 09
Expanded business to CCTV security motion industry.

2014. 06. 13
Named as a World Class 300 company for 2014

(Ministry of SMEs and Startups)

2016. 11. 30
Acquired and merged Sungshin Co., Ltd.

2017. 01. 31
SPG Research Center opened
(Songdo, Incheon)

2018. 12. 14
50-million-dollar Export Tower Award
(KITA)

2022. 03. 04
Named as one of the model companies with good disclosure practices for 2021
(Korea Stock Exchange)

High-Precision Machining System(SDD, Reducer)

























*Hobbing Machine : 35

*CNC : 27

*Combination Shelving : 11

*Precision Grinder : 8



High-Precision Machining System(Motor)





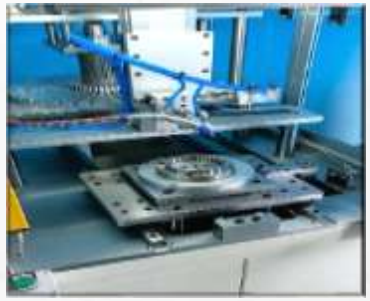




Stator Winding Machine



Stator Characteristic Test



Automatic Magnet Adhesive Application Equipment



Balancing Machine

High-Precision Quality Assessment System





















The New SPG

CONTENTS

01 **SDD**(SPG Direct Drive)

02 **OHT**(Overhead Hoist Transport equipment)

03 **Defense Industry**

04 **AMR**

05 **Others**

(주)에스피지

1 The Evolution of Robots

(주)에스피지

	Cartesian coordinates	SCARA	Articulated	High-speed Articulated	Co-Bot	Dual Arm	Humanoid
Shape							
Reducer/ DoF	Planetary 3-axis	Harmonic 3–4 Axis	RV, Harmonic 6+ Axes	Harmonic 6+ Axes	Harmonic 6+ Axes	Planetary, Harmonic 22+ Axes	Planetary, Harmonic Direct Drive (integrated) 25-34 Axes
Manufacturers	Robostar Hyulim Robot	Robostar Hyulim Robot EPSON	Hyundai Robotics Yuil Robotics Nau Robotic FANUC KUKA YASKAWA	Hyundai Robotics NACHI Mitsubishi	Rainbow Robotics Doosan Robotics Hanwha Robotics Neuromeka Universal Robot Techman Robot	Rainbow Robotics Robotis CORAS Robotics ABB	Rainbow Robotics (Samsung) Boston Dynamics (Hyundai) Korea Institute of Machinery & Materials, Blue Robin Holiday Robotics Unitree Robotics Agility Robotics

*** SPG Precision Reducer (Planetary Reducer, SH, SR Reducer) Sales Revenue**

- KRW 7.6 billion in 2023, KRW 10.2 billion in 2024, KRW 14.0 billion (estimated) in 2025

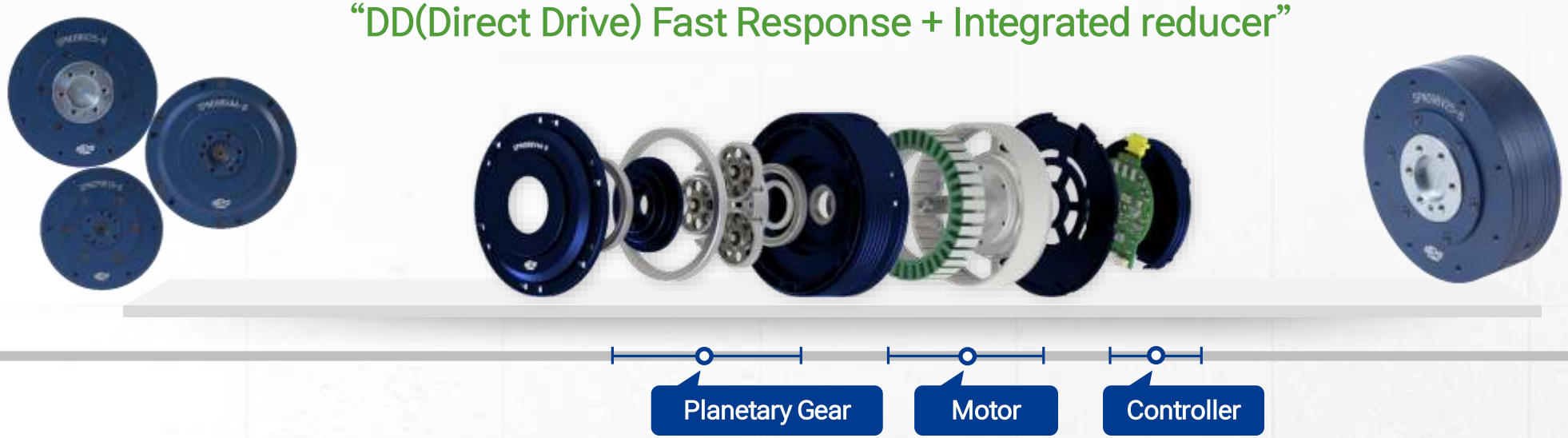
1 SDD: Definition and Concept

(주)에스피지

Integrated Joint Module

SDD(SPG Direct Drive)

"DD(Direct Drive) Fast Response + Integrated reducer"



SDD VS Normal Actuator

	Normal Actuator	SDD Actuator
Reduction Ratio	Mid-High	Low (easy control)
Dynamic Performance	Relatively Low	High
Back Driving	X	O
Torque Density	Low	High

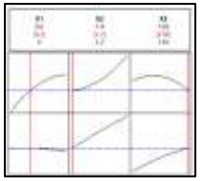
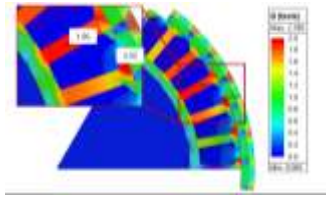
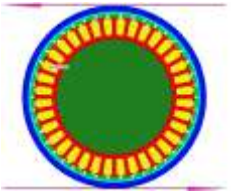
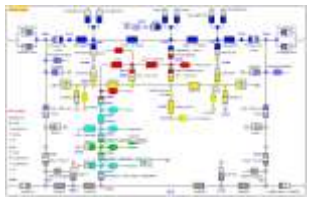
Actuator for Humanoid Robot Hip Joint

Human-body inspired design aims at minimizing vibration and noise while maximizing efficiency

Capability in multi-physics optimization analysis

multi-physics analysis

- RSM-based optimization design
- Analysis of copper, iron, and mechanical losses
- Motor thermal rating calculation

27 billion KRW invested in precision gear facilities

High-precision manufacturing

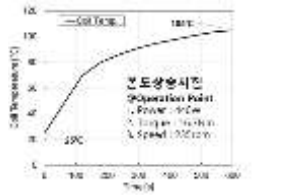
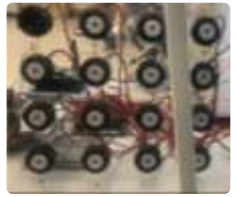
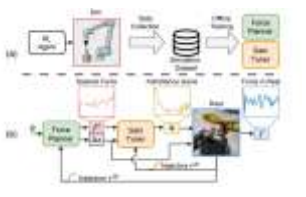
- Consistent Quality
- Efficient Production
- Cost Saving



UL TCP LAB

Performance evaluation and analysis

- Review of up-to-date evaluation criteria
- Performance evaluation process development
- Reliability and environmental evaluation

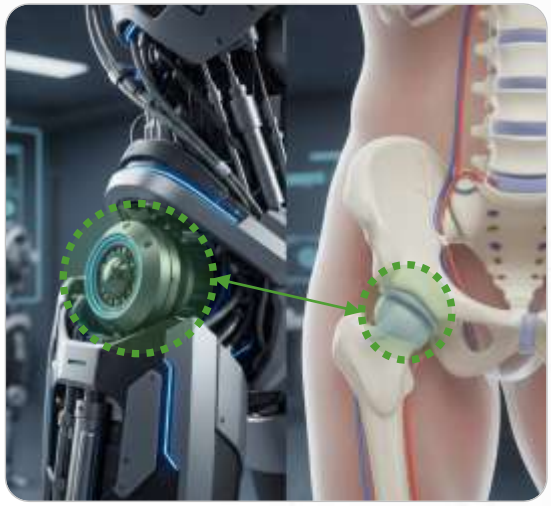





1 SDD: Definition and Concept

(주)에스피지

"The key for humanoid – realize human-like dynamic motions"

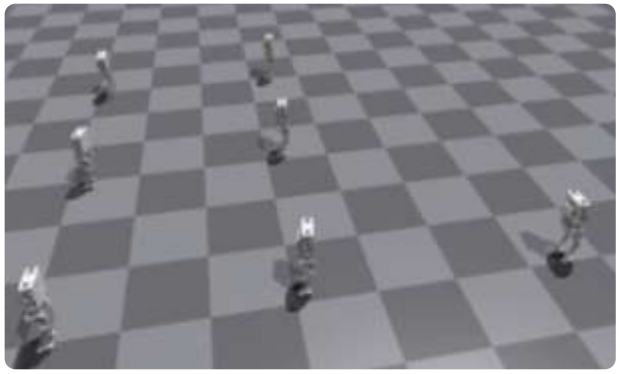
withstand high loads and strong impacts, like the hip joint.





"10-DOF biped robot STOB V3"
SEOULTECH HRR Lab

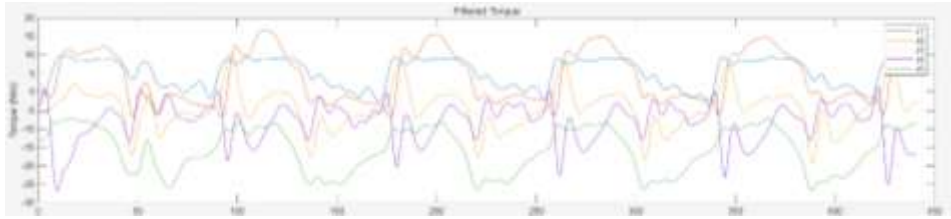




SDD actuator design optimized for dynamic gait profile

For robots, the ability to handle peak torque and impact at foot contact is crucial

Dynamic Locomotion Profile

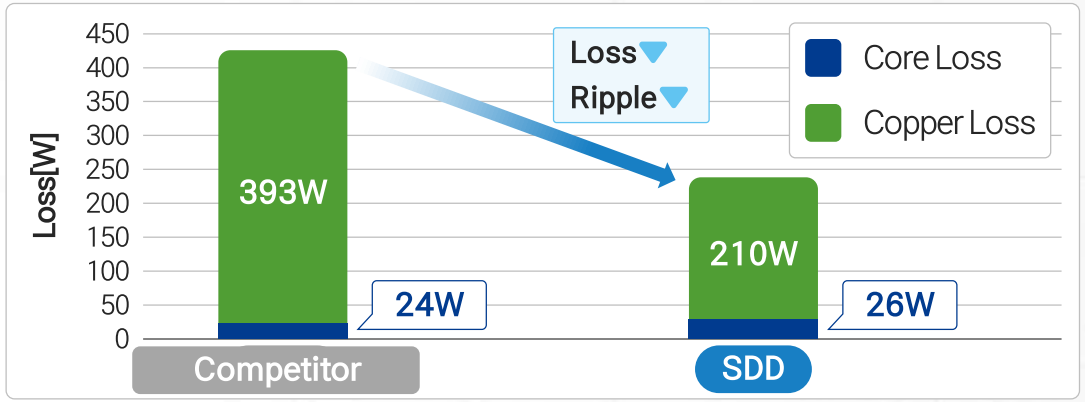


1 SDD Model Feature- (Motor)

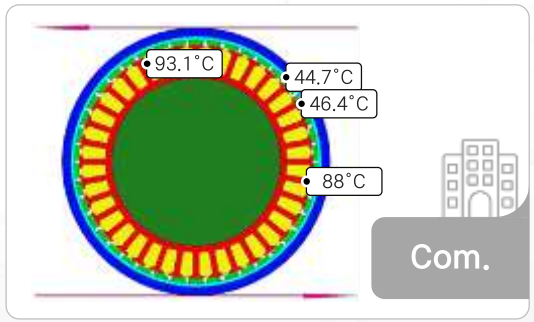
(주)에스피지

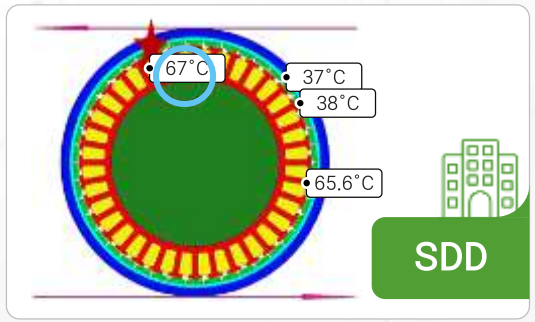
Comparison Under Maximum Load

	Competitor	SDD	
Cocking torque [Nm_{Pk-Pk}]	0.16	0.11	31.25 % ↓
Torque ripple[%]	4.4	1.5	2.9 %P ↓
Eff. [%]	70.4	80.7	10.3 %P ↑

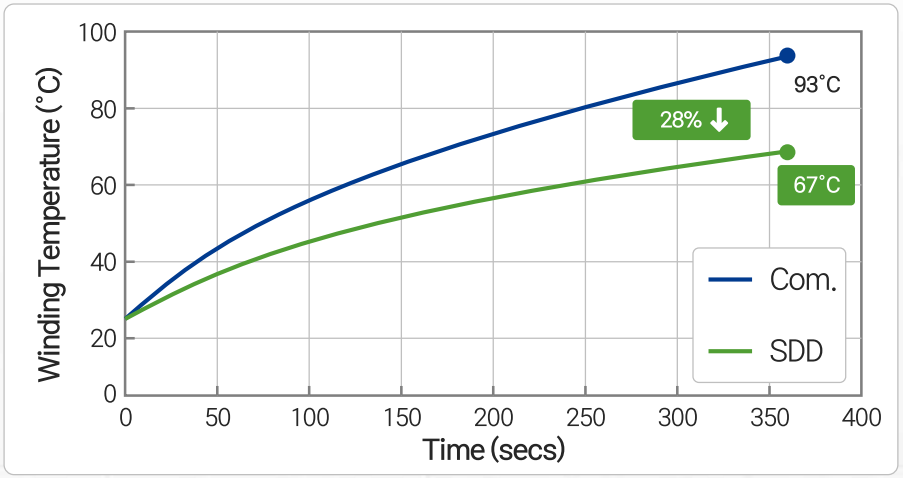


Simulation-Based Thermal Analysis Results

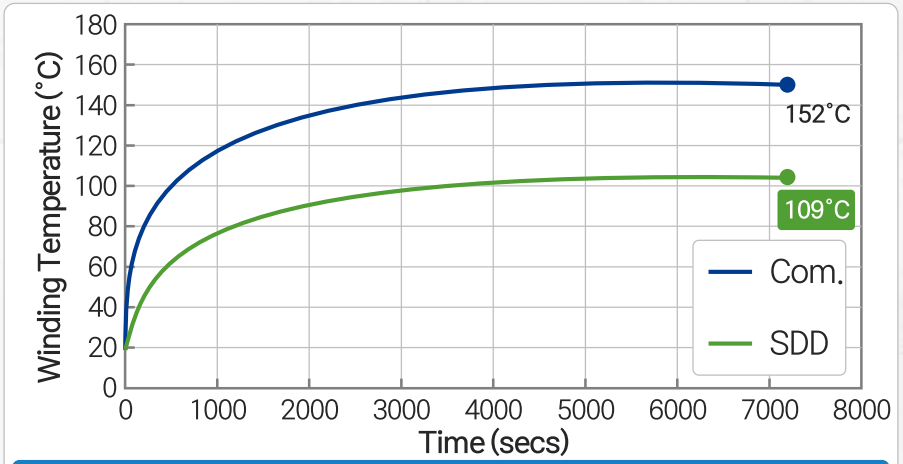




Actuator Thermal Performance Enhancement Results at Rated Load



Actuator Heat Profile Evaluation Without Thermal Damage Consideration

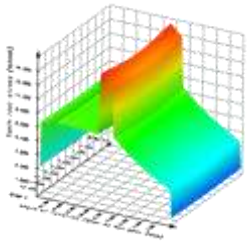


SDD can operate continuously without any issues

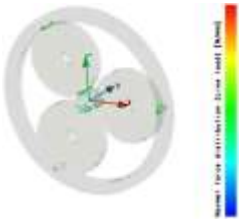
1 SDD Model Feature - Reducer

(주)에스피지

High-Strength Gear



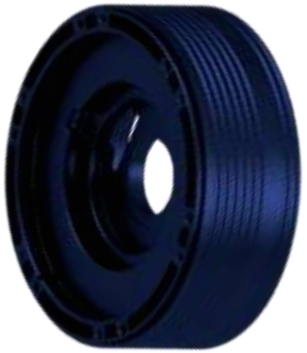


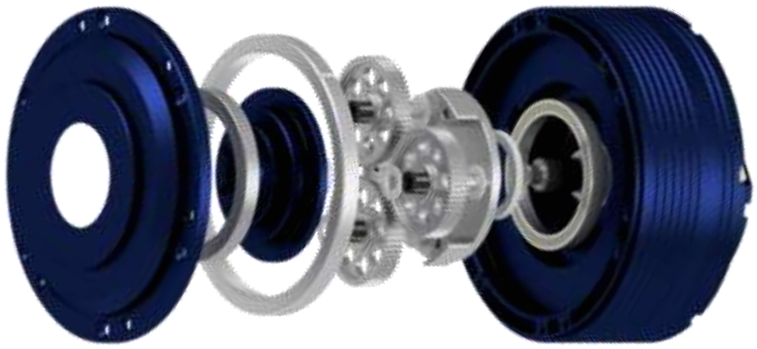


- 20% Increase in Safety Margin Compared to Competitors

Weight Reduction (Gear & Housing)

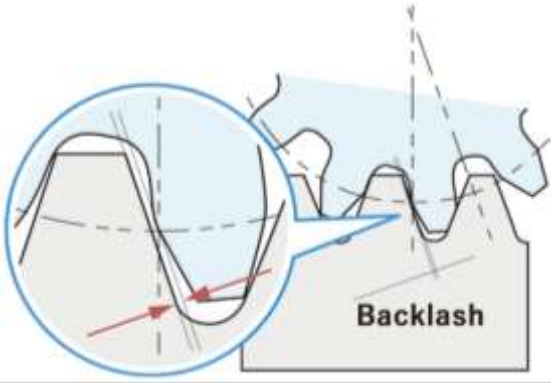






- 10% Reduction Compared to Competitors

High Precision / Low Noise



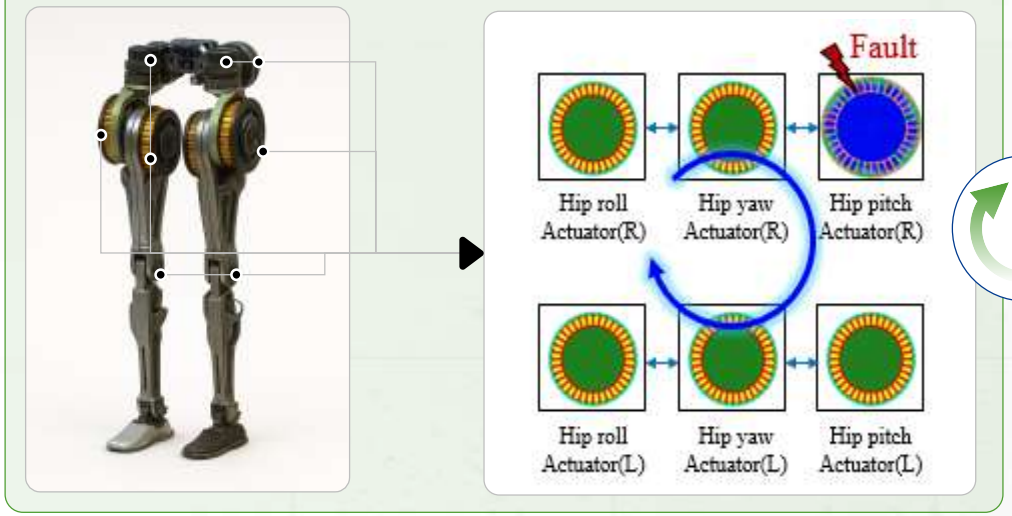
- Low Backlash
- (≤ 9arcmin)
- Precision Gear Machining

1 SDD Model Feature – AI Controller

(주)에스피지

Integration of AI-Based Fault Diagnosis Function for Actuator to Ensure High Reliability

Integrated Actuator System



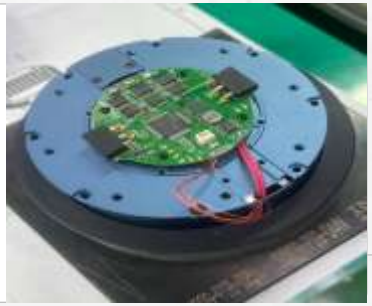
AI-based fault diagnosis



AI-Driven Modular Distributed Control Architecture

Actuator Embedded with AI-Powered Predictive and Corrective Algorithms

- Real-Time Module-Level Cooperation Enabled by High-Performance Networks (EtherCAT)
- Adjacent modules seamlessly execute proxy control in case of module malfunction



1 SDD Model(Partner Companies)

(주)에스피지

RAINBOW ROBOTICS

KIMM 한국기계연구원 KOREA INSTITUTE OF MACHINERY & MATERIALS

Coca-Cola

ROBOT

Holiday Robotics

KORAS ROBOTICS

ROBROS

blue robin

LGSciencepark

POSCO

Exclusive Supply of High-Performance Materials

By using the highest-quality electrical steel with extremely low motor iron loss, we have achieved miniaturization, high power output, and low heat generation in robot actuators.

POSCO INTERNATIONAL

Expanding Global Supply Chain Integration

Leveraging POSCO International's overseas network to register with major North American and European robotics tech companies and humanoid suppliers and expand exports

2 OHT Demonstration video



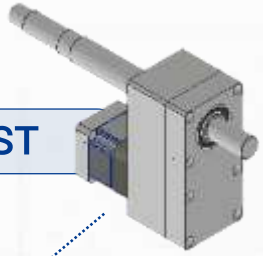
출처: YouTube(https://www.youtube.com/watch?v=TDI7TMpQRIU)

(주)에스피지



DRIVING

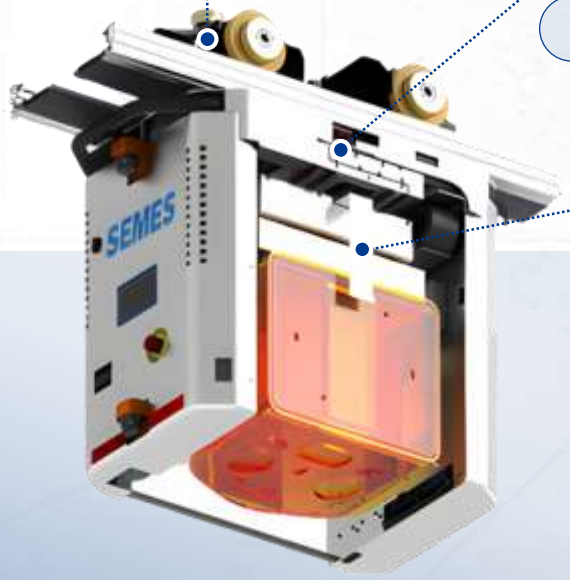
HOIST



OHT TRAY

FOUP
Rotating

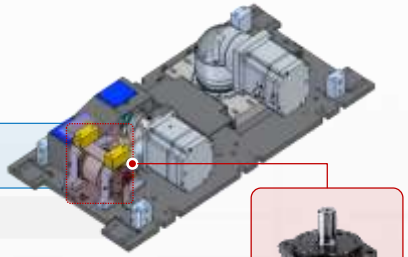




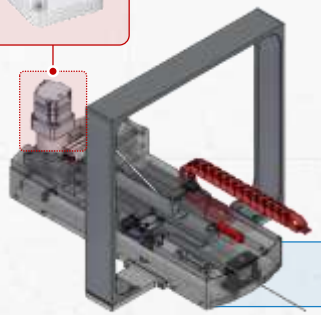
OHT

Crane

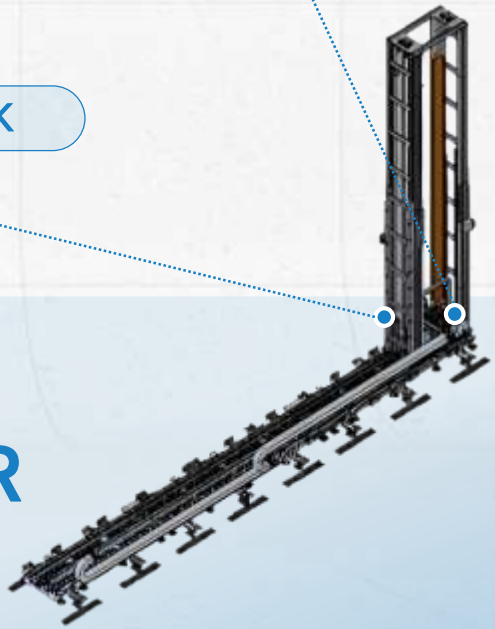
For
elevation







FORK



STOCKER

3 Defense Industry(2025 ADEX)



Planetary Gear / SR TYPE







RCWS SH 3-Axes Applied



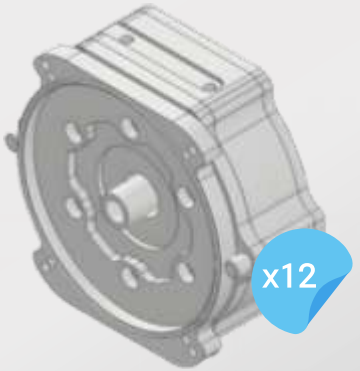
Precision Reducer for Automated Defense System

Estimated Turn over : 10 billion KRW at 2028







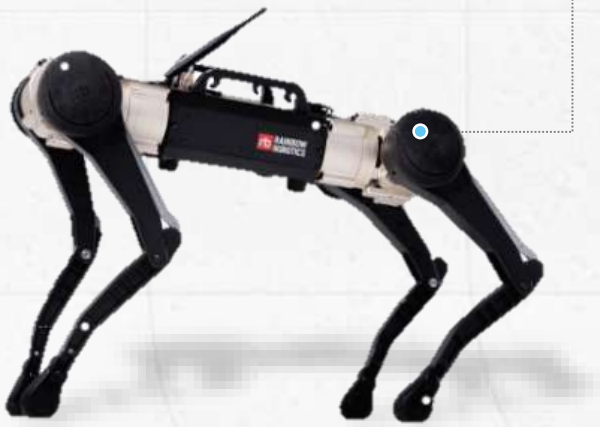




AIDIN ROBOTICS



Planetary Gear Reducer



RAINBOW ROBOTICS

Quadruped Robot Reducer

(주)에스피지

[SH TYPE]



KSF-25-080-UH

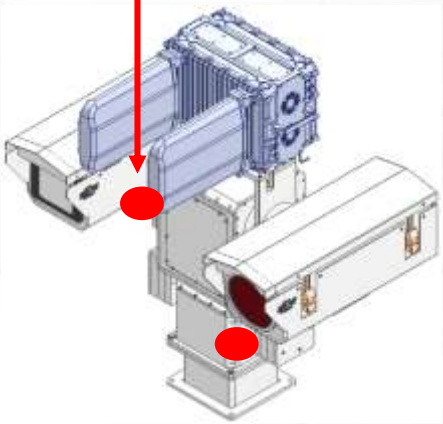


KSF-32-120-UH

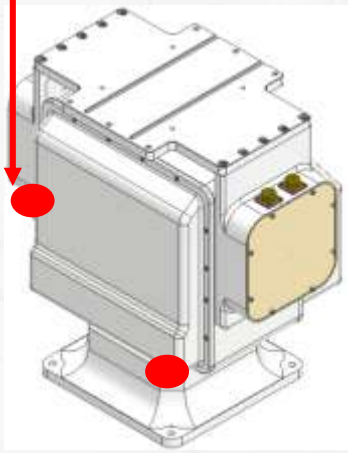
PAN
TILT



PAN
TILT



SNS-90000

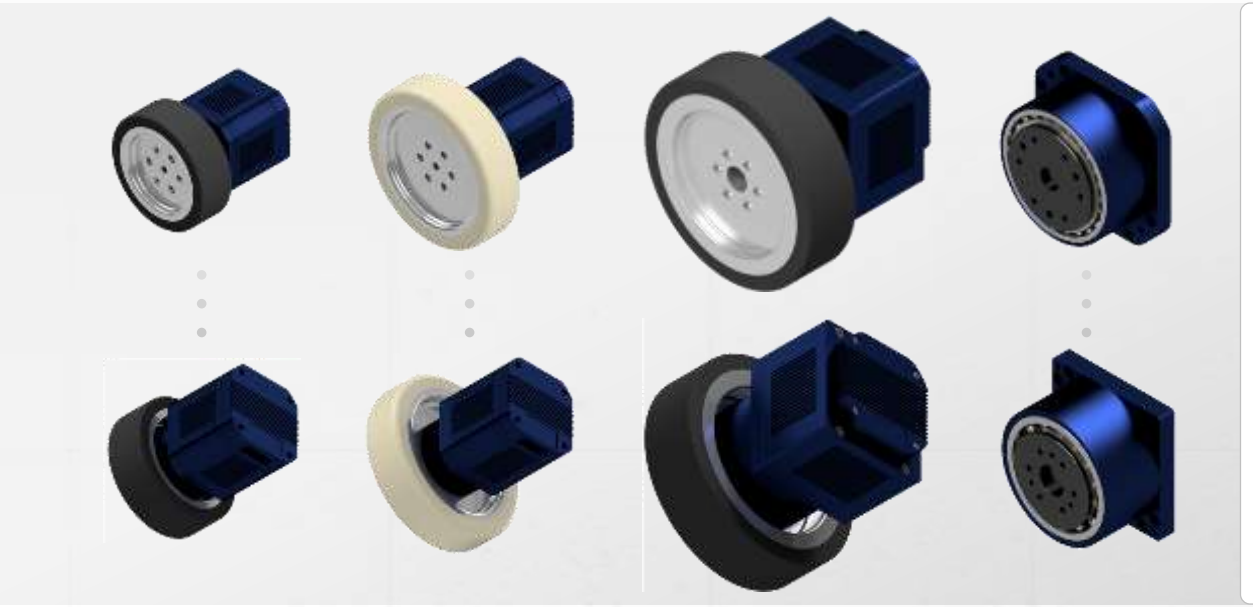


SNS-50000

SPG Positioning Camera

(주)에스피지

Wheel + Reducer + Motor + Controller Integrated Module





Robot



Mobile Robot

COMPACT/High torque,precision

- Low Backlash Precision Positioning & Motion Control (≤10 arcmin)
- High-efficiency design with planetary gear application, extended battery operating time
- Customizable output, gear ratios, and development of various wheels available
- Partners: Rainbow Robotics, Samsung Display, Yujin Robotics, LG CNS, Brills, T-Robotics

Medical

Smart Factory Needs

SPG

SPG Co., Ltd.



Up and down drive

AC Geared Motor

14,000EA

ICG-94470 TYPE

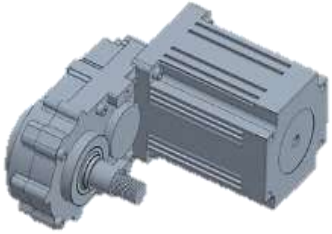


Up and down drive

DC Geared Motor

26,000EA

DGO-9028 TYPE



Bed wheel drive

BLDC Geared Motor

3,800EA

XPH10500F TYPE



Wheel auto lock

DC Geared Motor

13,000EA

DGO-5236 TYPE



Bed angle adjustment

AC Geared Motor

7,400EA

ICG-94440 TYPE



Medical bed

$3million annually

Smart Factory Needs

SPG

SPG Co., Ltd.



IV Pole Motor

DC Geared Motor

6,800EA

RS46BXLB TYPE



Vacuum Regulator Motor

DC Geared Motor

14,500EA

RS45AYLC TYPE



Inner Tank Drain Valve Motor

DC Geared Motor

5,800EA

RS44AYLF TYPE



Surgical waste

$2million annually

Auto Door

Smart Factory Needs
SPG
SPG Co., Ltd.

Sliding Auto Door





Open and close the door



DC Geared Motor
45,000EA
DGO-6024 TYPE



BLDC Geared Motor
Not In Mass Production
DGO-6324 TYPE

Screen Auto Door





BLDC Motor
6,000EA
DGO-6024 TYPE



BLDC Geared Motor
Not In Mass Production
DGO-6324 TYPE

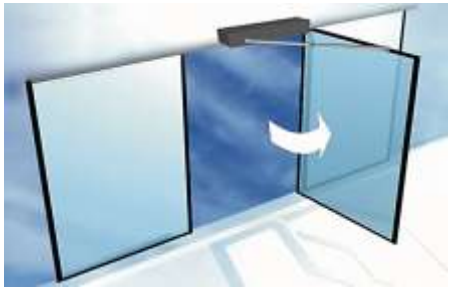
Auto door in the house





DC Geared Motor
5,500EA
DGO-4224 TYPE

Swing Auto Door







Open and close the door



DC Geared Motor
50,000EA
DGO-6348 TYPE

GEARED MOTOR LAYOUT FOR AUTO DOOR

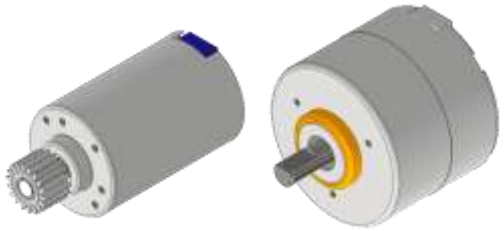
$2.8million annually

ATM Machine

Smart Factory Needs

SPG

SPG Co., Ltd.

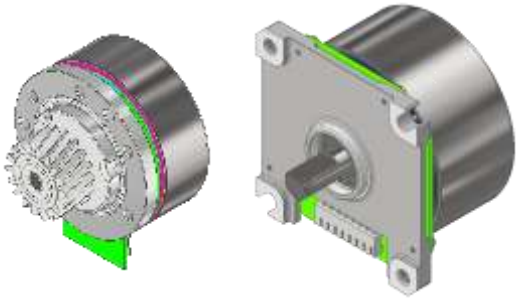


Drive

BLDC Motor

BL- TYPE

27,500EA



Drive

BLDC Motor

BLO- TYPE



CDU

DC Motor

12,000EA

S6D70-24D TYPE



ATM Machine

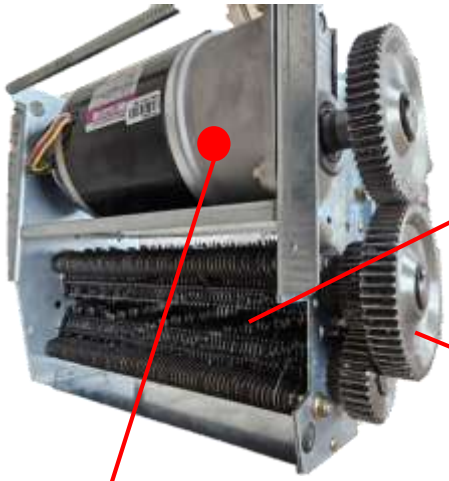
$2million annually

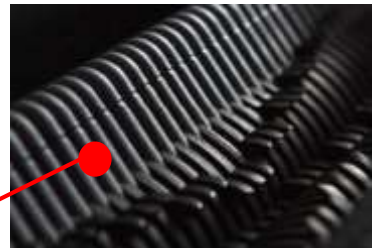
Shredder

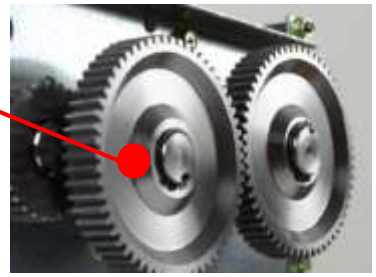
Smart Factory Needs

SPG

SPG Co., Ltd











Shredder Drive

AC GEARED MOTOR

14,000EA

PM(MEGA) TYPE

1Ph. 0.2 / 0.4 / 0.75 / 1.5kW

3Ph. 0.75 / 1.5 / 2.2 / 3.7 / 7.5 kW

$1.5million annually



Shredder for **Office / Industrial Use**

Valve

Smart Factory Needs

SPG

SPG Co., Ltd.





Valve opening and closing

DC Geared Motor
DGO-4005 TYPE
(Gear box short)

43,000EA

Valve opening and closing

DC Geared Motor
DGO-4005 TYPE
(Gear box long)



$1million annually

Water meter Valve

Smart Factory Needs

SPG

SPG Co., Ltd



Valve Opening & Closing

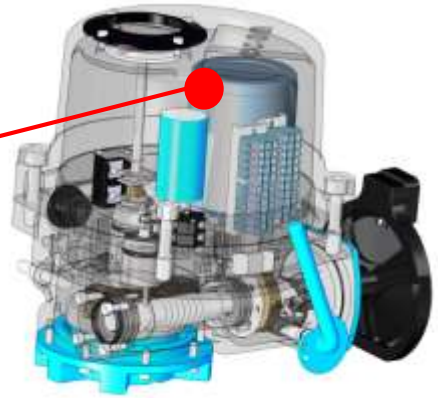
AC MOTOR

S6/S7/S8/S9/S10 TYPE

1Ph. 10W ~ 300W

3Ph. 15W ~ 400W

DC 6W ~ 40W



120,000EA



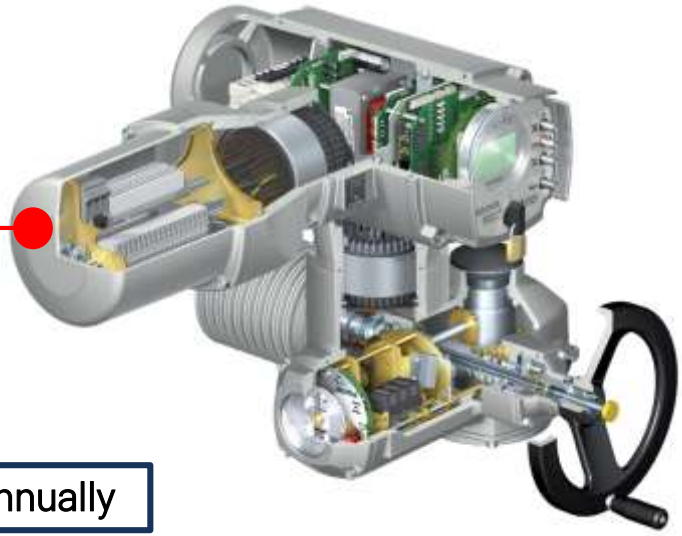
Valve Opening & Closing

AC MOTOR

P TYPE

1Ph. 0.2kW ~ 1.2kW

3Ph. 0.2kW ~ 5.5kW



$3million annually

ACTUATOR

Parking Gate

Smart Factory Needs

SPG

SPG Co., Ltd.



Bar opening and closing

BLDC Geared Motor

15,000EA

XFH9100-100K(A191)



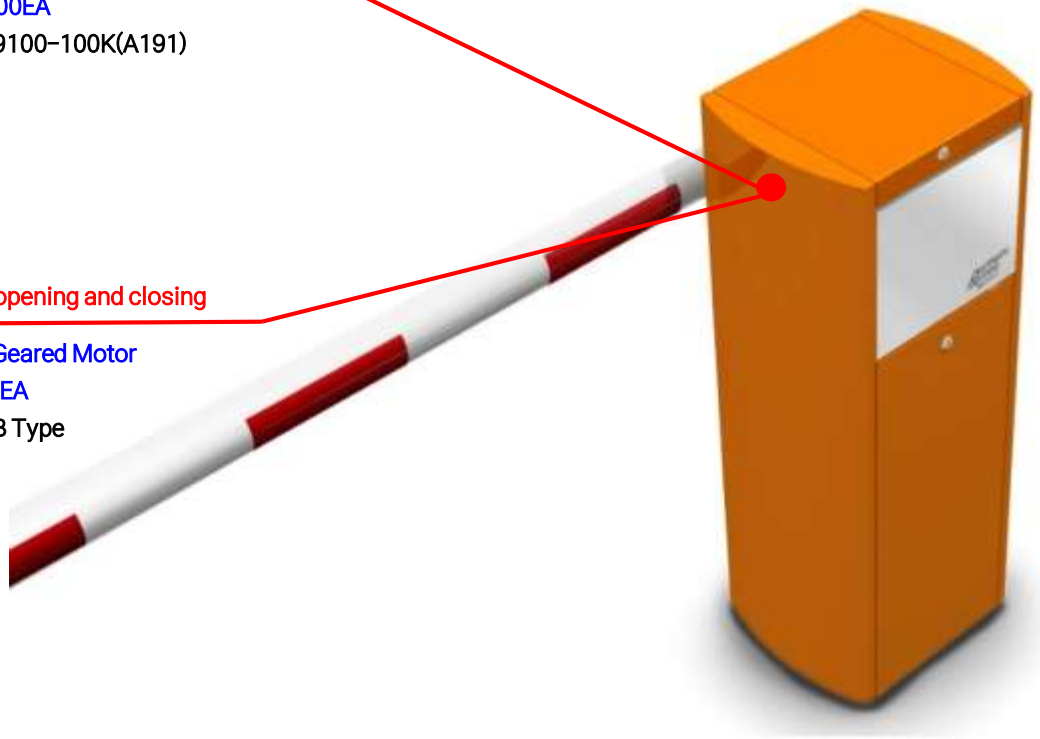
Bar opening and closing

AC Geared Motor

1,600EA

FA/FB Type





$800,000 annually

Parking Lot – Parking Gate

Pellet Heating System

Smart Factory Needs

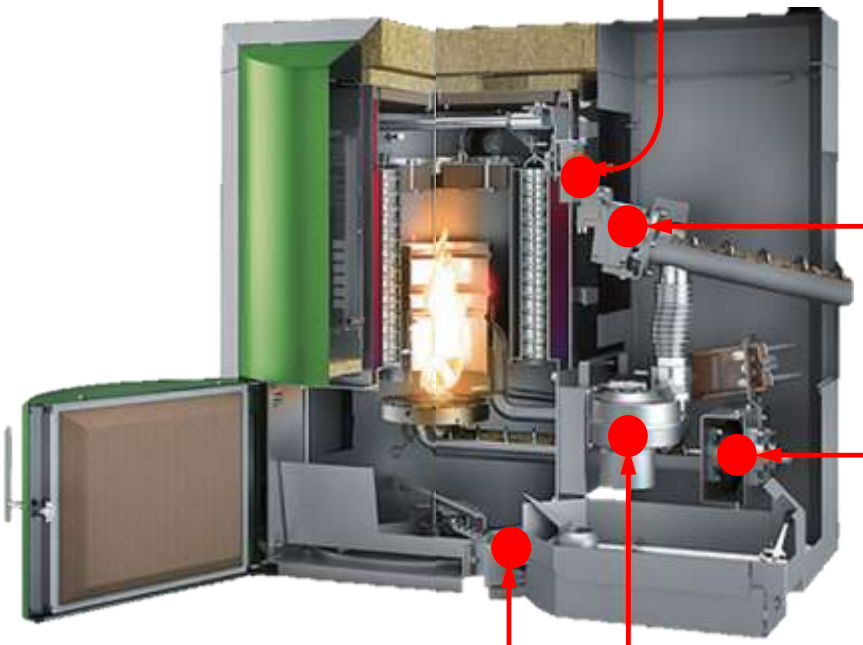
SPG

SPG Co., Ltd.



AC Geared Motor
ISG-3 TYPE

Ash Cleaner





AC Geared Motor
Standard TYPE



BLDC Geared Motor
NEW TYPE



AC Geared Motor
FA TYPE



AC Geared Motor
FB TYPE

Pellet & Wood Chip Feeder



AC Geared Motor
Standard TYPE



BLDC Geared Motor
NEW TYPE



BLDC Geared Motor
ISG TYPE



AC Geared Motor
ISG TYPE

Ash Feeder

Pellet & Wood Chip Feeder



AC Geared Motor
Standard TYPE



BLDC Geared Motor
NEW TYPE



BLDC Geared Motor
ISG TYPE



AC Geared Motor
ISG TYPE

Blower & Exhaust Fan



AC / BLDC Radial Fan Motor

Pellet Heating System

Gas Boiler

Smart Factory Needs

SPG

SPG Co., Ltd.

Gas Boiler



DL89806 Type

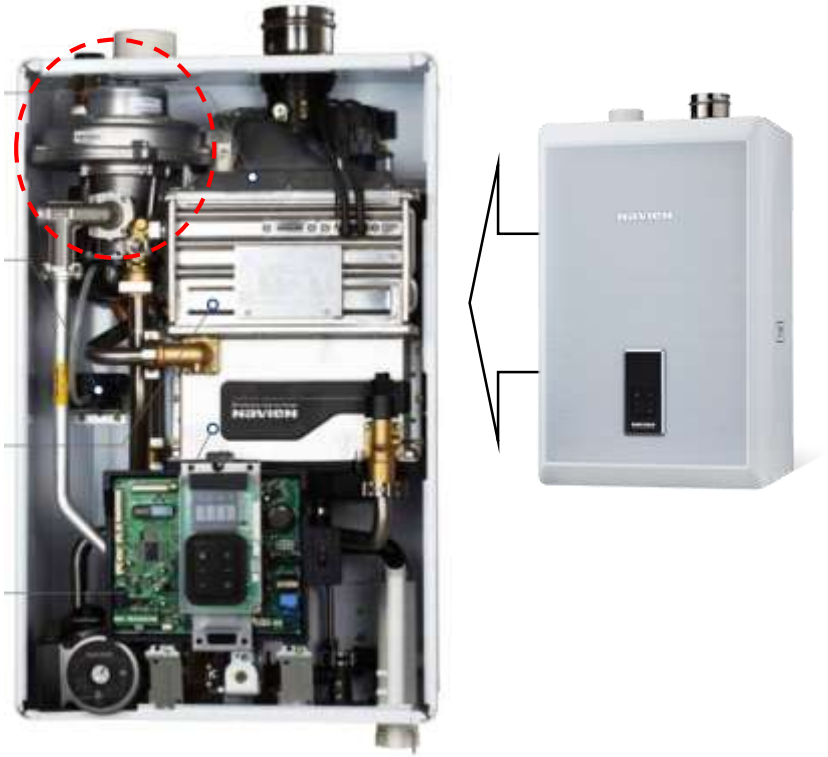


DL89812 Type

BLDC Motor



Blower



Condensing Gas Boiler

Food & Beverage

Smart Factory Needs

SPG

SPG Co., Ltd.







Auger Ice Making

AC GEARED MOTOR

18,000EA

ICG TYPE

1Ph. 80W/200W





Ice Maker

$2.4million annually

Smart Factory Needs

SPG

SPG Co., Ltd.



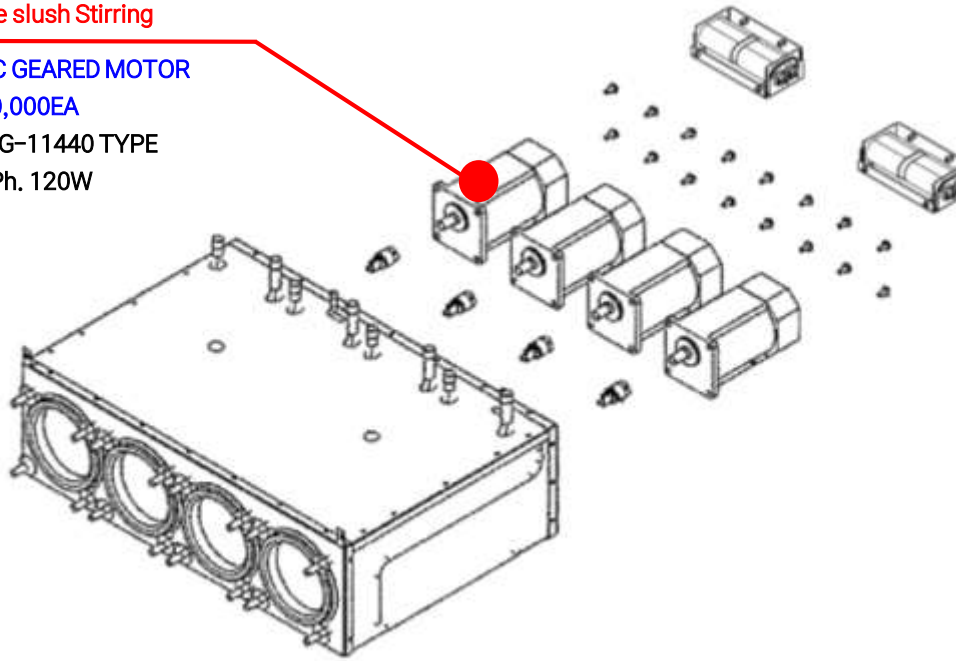
Ice slush Stirring

AC GEARED MOTOR

70,000EA

ICG-11440 TYPE

1Ph. 120W





Frozen Beverage Dispenser

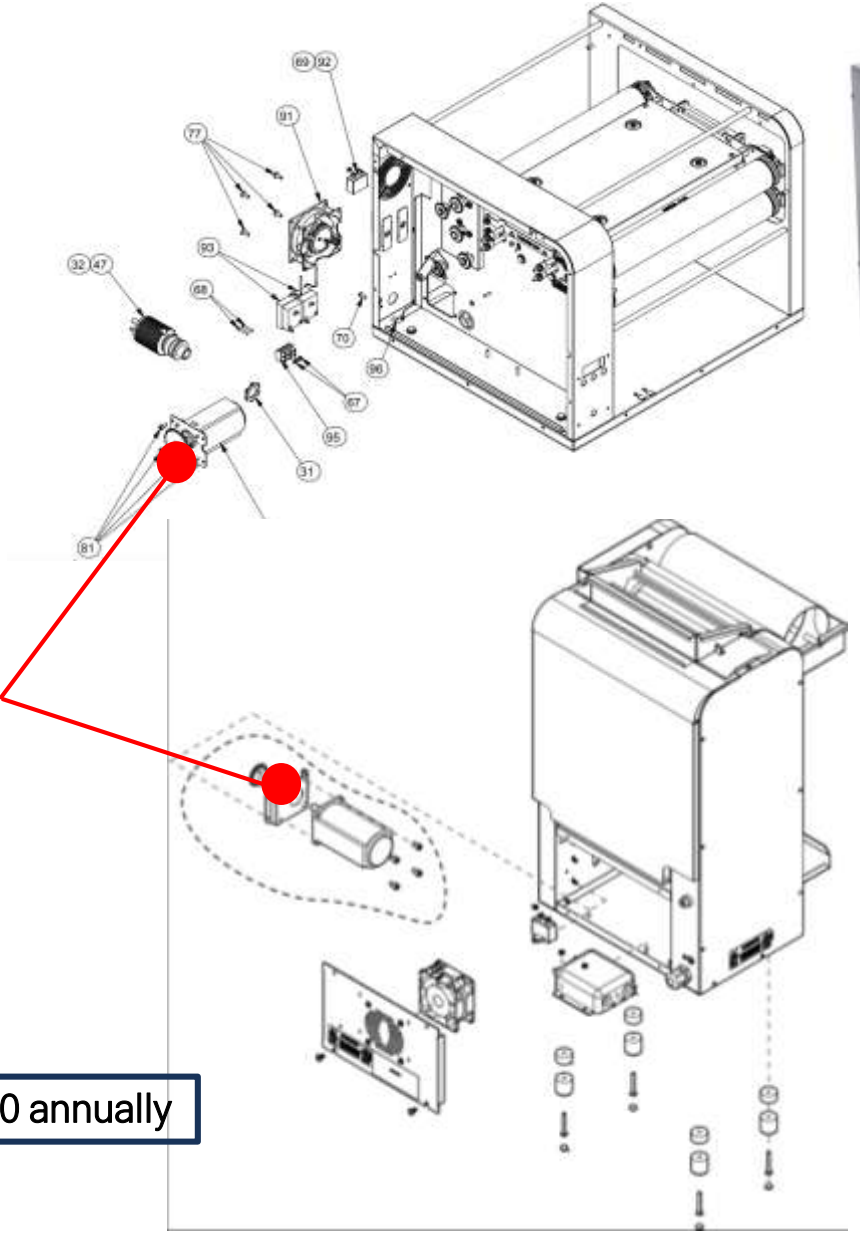
$4.6million annually

Smart Factory Needs

SPG

SPG Co., Ltd









Conveyor Drive

AC GEARED MOTOR
15,000EA
ICG-70425 TYPE
1Ph. 10W

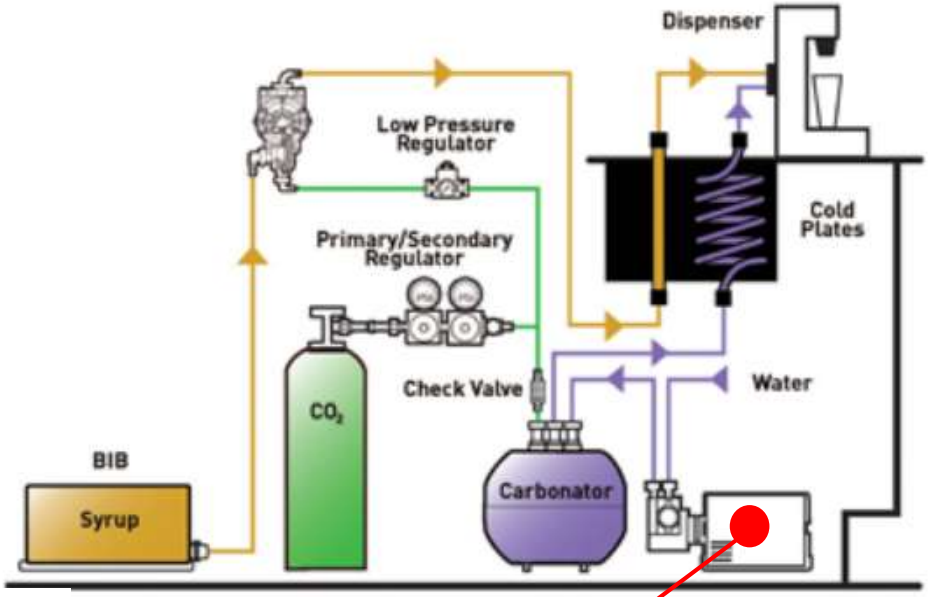
Toasters

$520,000 annually

Smart Factory Needs

SPG

SPG Co., Ltd.







Carbonator Pump Drive

AC MOTOR

20,000EA(1st Step), 2nd Step : 70,000EA, 3rd Step : 500,000EA

SP-1M TYPE

1Ph. 250W

Switch



Convert



* Mechanical Switch
Life Cycle : 100,000

* Electronic Switch
Life Cycle : 1,000,000

$40million annually

Beverage Dispenser

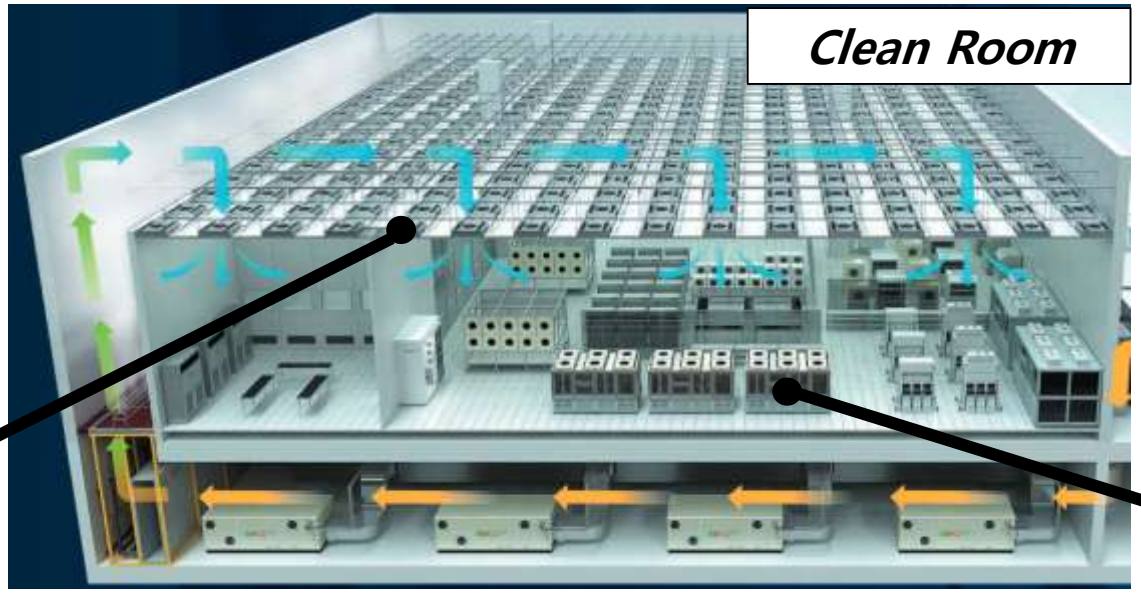
EFU & FFU

Smart Factory Needs

SPG

SPG Co., Ltd.

■ EC Blower MOTOR for EFU & FFU



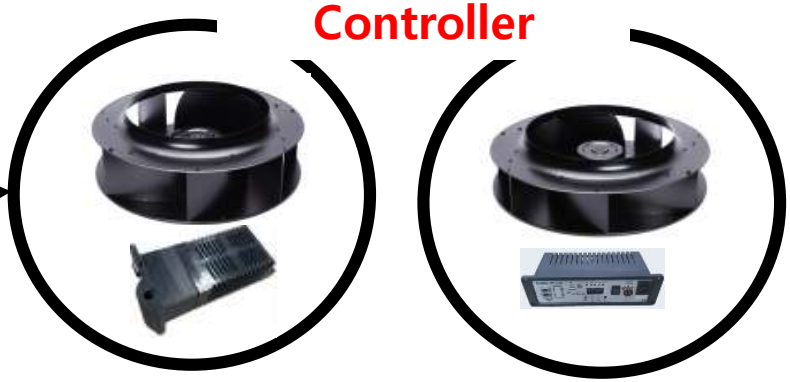




BLDC Motor & Controller



FFU Fan Filter Unit





EFU Equipment Fan Filter Unit

Smart Factory Needs

SPG

SPG Co., Ltd.

■ EC Blower MOTOR for EFU & FFU

Motor
200W : 10,000EA
300W : 5,000EA
400W : 10,000EA
650W : 5,000EA

$1.2million annually



SM1200 Type

- DL-11070SS120
- ~1200W
- Controller external



SM650 Type

- DL-11040SS65
- ~650W
- Controller external / built-in



SM400/300/200Type

- DL-86055SS40/30/20
- ~200W/300W/400W
- Controller external
- Sensored / Sensorless



EC400 Type

- EC-86055SS40
- ~400W
- Controller built-in



Ø470*H45
SM200,SM300 Series



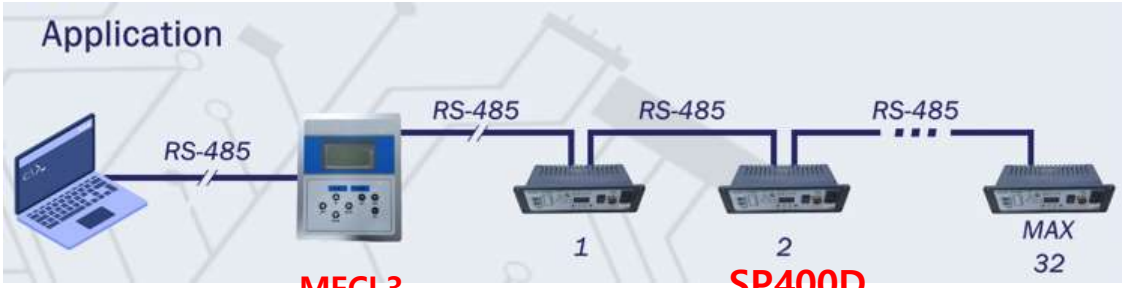
Ø470*H85mm
SM400 Series



Ø470*H110
SM650 Series



Ø530*H110
SMP650 Series



MFCL3
2



Multi Fan Controller

- Control and Monitor up to 32 Drivers
- RS-485 communication for group & individual control
- 144mm*178mm*31mm

SP400D



BLDC Motor Driver

- 1:1 installation with EFU/FFU
- 7,000EA, 350,000 dollars annually
- Remote/Local operation, Variable speed & Monitoring
- RS-485 communication for remote wired control
- 238mm*69mm*68mm

Air Handler Unit

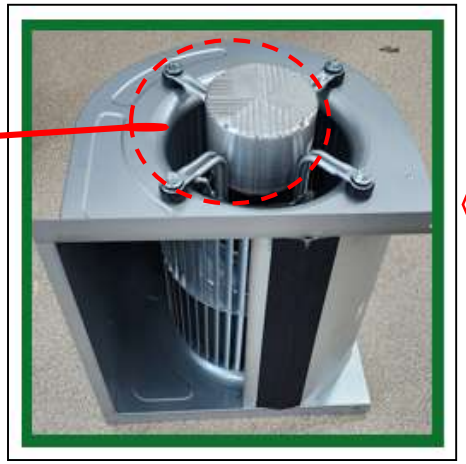
Smart Factory Needs
SPG
SPG Co., Ltd.

Air-Handler Unit



EC13825 Type
EC13850 Type







BLDC Motor

Blower

Air-Handler Unit

Conveyor

Smart Factory Needs

SPG

SPG Co., Ltd.



Conveyor drive



AC Geared Motor
100,000EA
Standard TYPE









AC Geared Motor
15,000EA
Industrial TYPE



Conveyor drive

DC Geared Motor
42,000EA
DGO-90180 TYPE



Conveyor Drive & Control

BLDC Geared Motor
Built-in controller



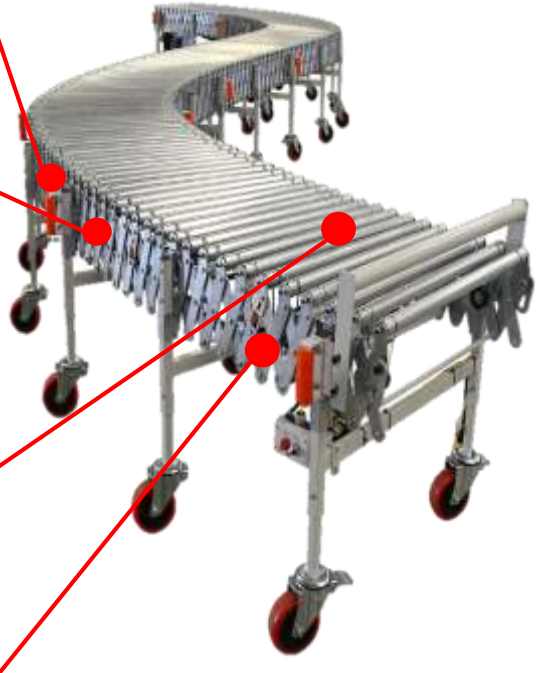
Conveyor Drive & Control

BLDC Geared Motor
Roller & Controller



Conveyor Drive

DD Motor



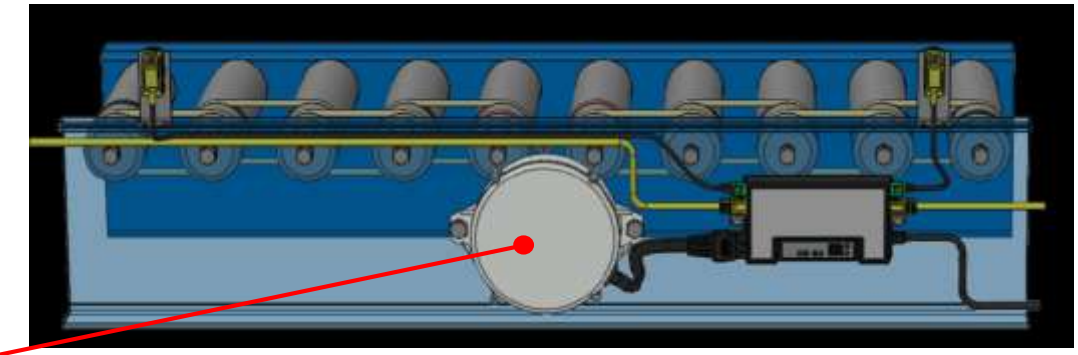
80,000EA for FMH, $6.5million annually ➡ $9million annually (Add BLDC Motor)

Conveyor

Smart Factory Needs
SPG
SPG Co., Ltd.

New Development – DD Motor







Item	2024	2025				2026
	4Q	1Q	2Q	3Q	4Q	1Q
Motor Design						
Driver Development						
Tooling						
Sample Verification						
Mass Production						

	Unidrive	SPG
Product Name	UD100	TBD
Diameter	118.1Φ	118.1Φ
Stack Length	36.6Φ	36.6Φ
Rated Voltage	24V	24V

Smart Factory Needs
SPG
SPG Co., Ltd.

New Development - Power Roller Motor



Drive Wheel
Planetary Gear Box
Motor



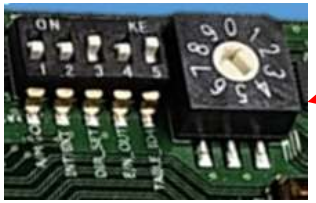
AMR
BLDC Geared Motor
Roller & Controller

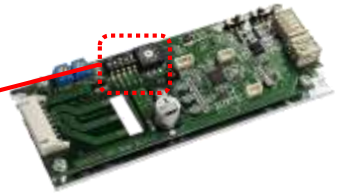


Item	2024		2025		
	3Q	4Q	1Q	2Q	3Q~
Motor Design & Driver Development					
Tooling					
Sample Verification					
Mass Production					

Item	Itoh Denki	SPG
Product Name	PM500FE	TBD
Roller Diameter	50Φ	50Φ
Roller Length	590mm	590mm
Rated Voltage	24V	24V
Gear Ratio	1:12.64	1:63
Speed Range	62~395RPM	62~395RPM

No.	Function	ON	OFF
SW1-1	Thermister/Under Voltage Reset	Manual	Automatic
SW1-2	Speed Variation	External	Internal
SW1-3	Turning Direction	CW	CCW
SW1-4	Error Signal	Discharges in normal status	Discharges when error arises
SW1-5	Speed Range	High Range	Low Range





Wearable Robot

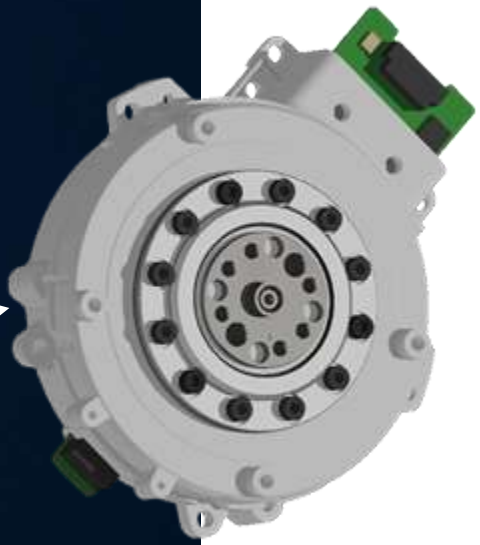
Smart Factory Needs

SPG

SPG Co., Ltd.

Wearable robots

BLDC GEARED MOTOR LAYOUT







Humanoid Robot

Smart Factory Needs

SPG

SPG Co., Ltd.
PRECISION
REDUCER





x6

6 Shoulder Roll

6 Shoulder Pitch

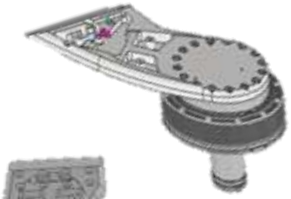
6 Shoulder Yaw



x2

5 Hip Yaw

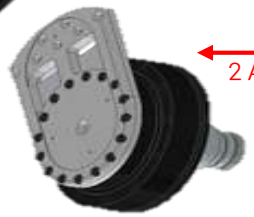
5 Hip Roll



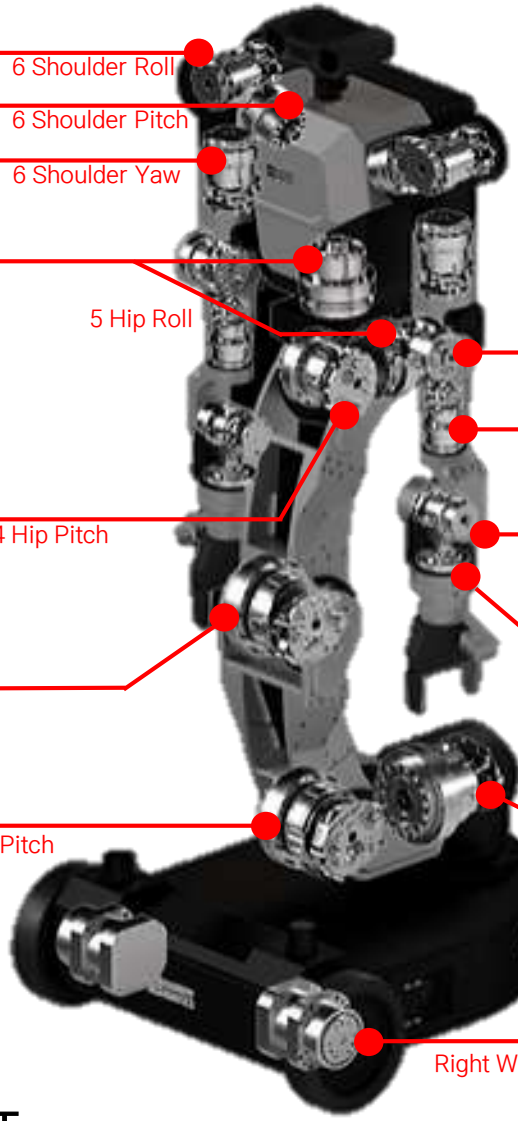
4 Hip Pitch

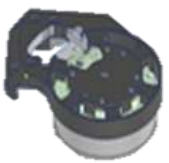


3 Knee

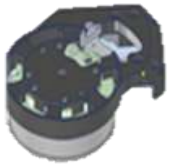


2 Ankle Pitch





8 Left Elbow



7 Right Elbow

9 Wrist Yaw1

x2



Product under
development

10 Wrist Yaw2

x2



11 Wrist Pitch

x2



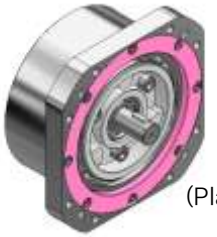
Product under
development

1 Ankle Roll



Right Wheel / Left Wheel

x2



AMR
(Planertary Gear Reducer)

RB-Y1 PRECISION REDUCER LAYOUT

Co-bot

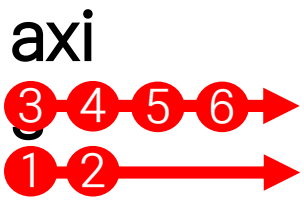
RB1

RB3

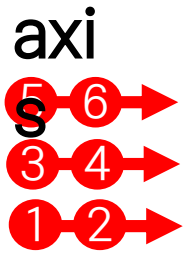
RB5

RB10

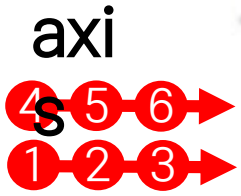
RB20

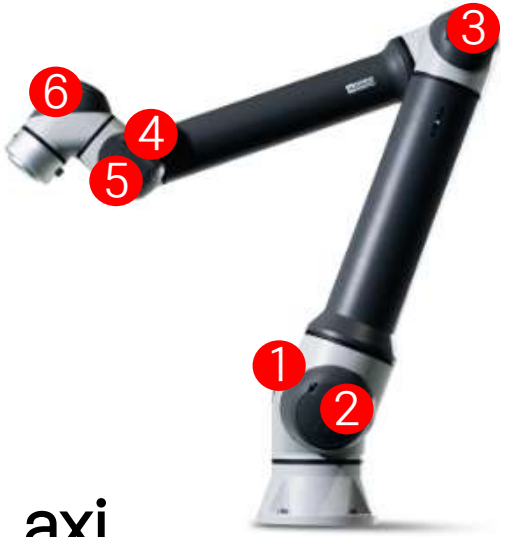


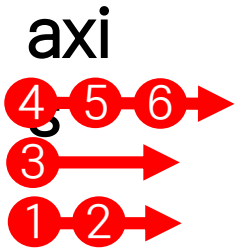




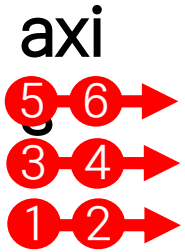












Cobot PRECISION REDUCER LAYOUT

Smart Factory Needs
SPG
SPG Co., Ltd.
PRECISION
REDUCER

Smart Factory Needs

SPG

SPG Co., Ltd.
PRECISION
REDUCER

LINKOBOT

SR PRECISION REDUCER LAYOUT

YMX-5200

대형 - I

가반하중(Payload) : 50kg
최대리치(Max. Reach) : 2,248mm

주요용도 Main uses	스팟용접 Spot welding	아크용접 Arc welding	핸들링 Handling	조립 Assembly	검사 Inspection
	●		●	●	●

설치방법 Installation method	고정 Fixing		
	바닥고정 on the floor	천정고정 on the ceiling	벽면고정 on the wall
	●		

제품명 Model name	YMX-5200
본체 무게 weight	610 kg
가반 하중 Payload	50 kg
자유도 Degrees of freedom	6 Axis
최대 Reach Max. Reach	2,248 mm
구동방식 Driving	AC SERVO Motor
정격용량 Rated capacity	26.7 kw

