

SEWOO

A Group, the Leader in South Korea
specialized in Tubing & Welding
for Aerospace & Defense

The Future of Aerospace



AGENDA

IDENTITY

Group

Market

Certificates

ASSETS

Capabilities

Capacities

Expertise

Manufacturing Activities

Core Technologies

BUSINESS

Programs and Products

Customers

Performances Indicators

STRATEGY

Benefits & Strengths

Strategy & Vision

Core Values

Strategical Partnership

Contacts

01 | IDENTITY



#1 GROUP



COMPANY

- SEWOO
- & SEWOO AEROSPACE
- KDIA & DAPA Member



LOCATION

- SOUTH KOREA (SACHEON CITY)



INCORPORATION

- DECEMBER 2007



FACILITY AREA

- 23 100 M² FOR GROUP
- (AEROSPACE : 13 200M²)



2017 SALES

- \$14M
- (20% INCREASED FROM 2016)



TEAM

- 200 persons
- (AEROSPACE - 100)



#2 MARKET

TUBING, WELDING FOR

LAND



CONSTRUCTION EQUIPMENT

AEROSPACE



CIVIL & MILITARY & UAV

DEFENCE



K-9 SELF PROPELLED ARTILLERY

SPACE



SPACE LAUNCH VEHICLE



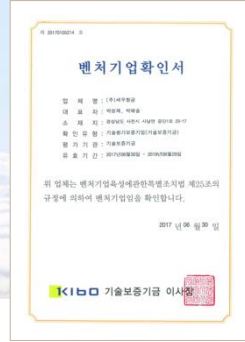
#3 CERTIFICATES



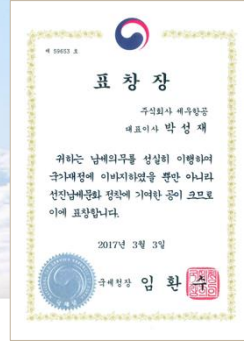
AS9100



ISO14001



Venture Businesses



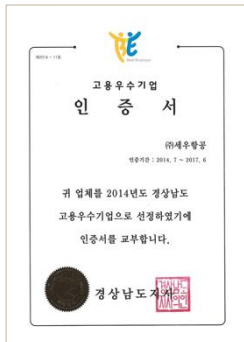
Commissioner Award



Research Institute



NADCAP Heat Treating



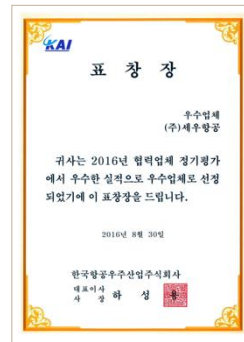
Top Company For Employment



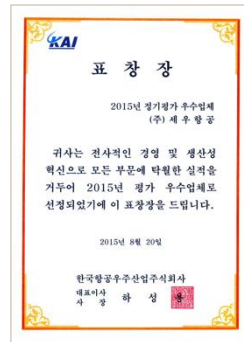
Excellent Quality Award By Hyundai



Small And Medium Industry



Excellent Quality Award By KAI



Excellent Quality Award By KAI



NADCAP Welding



02 | ASSETS



#4 INDUSTRIAL CAPABILITIES

BENDING

- › **CNC Bending Machine**
- › **Manual Bending Machine**
- › **Coil Bending Machine**

SWAGING

- › **Dyna Tube Fitting Swaging Machine**
- › **Wiggins Ferrule Swaging Machine**
- › **Flareless Sleeve Swaging Machine**

END FORMING

- › **Cut & Trim Machine**
- › **Double Flare Machine**
- › **End Forming Machine (Flare, Bead, Trim)**

WELDING

- › **Bend Saw**
- › **Belt Sander**
- › **Filler Storage Cabinet**
- › **Titanium Welding Chamber**
- › **Automatic TIG Welding Machine**
- › **Manual Welding Machine**

#4 INDUSTRIAL CAPABILITIES

INSPECTION & TEST EQUIPMENT

- > CMM
- > Profile Projector
- > Industrial Video Scope
- > Rockwell Hardness Tester
- > Shape Measuring Machine
- > Pressure Testing Equipment
- > Vector Measuring Machine for tube

CORE COMPETENCIES

- > Tube Assembly
- > Weld Assembly
- > Braided Duct Assembly

R&D CENTER

- > CATIA V6
- > CREO 3.0
- > Auto CAD
- > ERP

MISC

- > Dry Oven
- > Braiding Machine
- > Pressure Test Equipment
- > Ultrasonic Cleaning Facility
- > Heat Treatment Equipment

#5 PRODUCTION CAPABILITY

IN HOUSE

- › Braiding
- › Cleaning
- › Cut & Trim
- › Tube Bending
- › Internal Swaging
- › External Swaging
- › Proof Pressure Test
- › Heat Treatment – NADCAP Certified
 - Aluminum
- › Welding(GTAW) – NADCAP Certified

OUT SOURCE

- Plating ‹
- Coating ‹
- Machining ‹
- Surface Treatment ‹
- Heat Treatment ‹
 - Steel •
 - Stainless Steel •

#6 FREE CAPACITY



Free Machine Capacity -> 33%?
Shop Floor Available -> 15%?

Investments are planned
New Investments can be secured w
New Business contract

> Welding(GTAW) = NADCAP Certified

#7 TECHNICAL CAPABILITY



Production & Personnel status

- ✓ Our company's has production capability for aircraft detailed parts, and sub-assembly
 - ✓ Quality Management is Key within Sewoo Aerospace
- ✓ Our Experts have 15 years of experiences, receive yearly training and accreditations
 - ✓ Team knowledge & expertise are yearly monitored & scored

> Welding(GTAW) - NADCAP Certified

#8 TECHNOLOGIES



• Aircraft /Aerospace tubing assembly



- Hydraulic lines / Fuel lines
- Environment control system lines
- Conduit for wire harness

• Aircraft / Aerospace hot air duct assembly



TUBE BENDING WELDING INSULATION APPLICATION BRAIDING

- Hydraulic lines
- Fuel lines
- Environment control system
- Conduit for wire harness

• Engine assembly & Clustering



- High pressure pipe line
- 75Ton Fuel & Lox CC line
- 75Ton Fuel & Lox GG line
- 7Ton Fuel & Lox CC line
- 7Ton Fuel & Lox GG line

> Welding(GTAW) = NADCAP Certified



#9 RAW MATERIAL



- Materials Specified by Customers
- CBOL Corporation
 - Corrosion resistant steel (CRES)
 - Aluminum
 - Titanium
 - Inconel

- California Material & Supply
 - Corrosion resistant steel (CRES)
 - Steel
 - Aluminum
- Weve Metal Co.
 - Stainless steel super duplex

> Welding(GTAW) = NADCAP Certified

03 | BUSINESS AREAS



#10 PROGRAMS AND PRODUCTS

01 | FIGHTER AIRCRAFT T-50 FAMILY

CUSTOMER

: KAI

PRODUCT

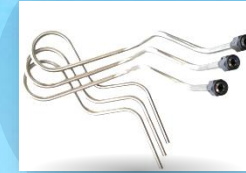
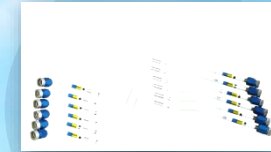
: Tube Assembly
Weld Assembly

FUNCTION

: Hydraulic Line, Fuel Line
Air Duct Braiding Assembly
Environment Control System Duct Assembly
Conduit For Wire Harness
Crew Ladder Welding Assembly
Spoiler Beam Welding Assembly

PRODUCTION PERIOD

: 2007 To Present



#10 PROGRAMS AND PRODUCTS

02 | KOREAN UTILITY HELICOPTERS(KUH)

CUSTOMER

: KAI

PRODUCT

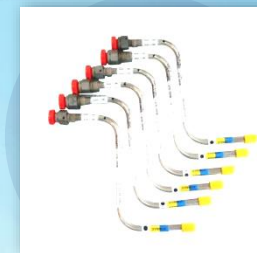
: Tube Assembly
Weld Assembly

FUNCTION

: Hydraulic Line
Fuel Line
Crew Ladder Welding Assembly
Air Duct Braiding Assembly

PRODUCTION PERIOD

: 2011 To Present



#10 PROGRAMS AND PRODUCTS

03 | LAH(LIGHT ARMED HELICOPTER) LCH(LIGHT CIVIL HELICOPTER)

CUSTOMER

: KAI

PRODUCT

: Tube Assembly
Weld Assembly

FUNCTION

: Hydraulic Line, Fuel Line

PRODUCTION PERIOD

: 2017 To Present



#10 PROGRAMS AND PRODUCTS

04 | TRAINER AIRCRAFT KT-1

CUSTOMER

: KAI

PRODUCT

: Tube Assembly
Weld Assembly

FUNCTION

: Hydraulic Line
Fuel Line
Environment Control System Duct Assembly

PRODUCTION PERIOD

: 2007 To Present



#10 PROGRAMS AND PRODUCTS

05 | BOEING B787

 **CUSTOMER**
: KAI

 **PRODUCT**
: Tie Rod

 **FUNCTION**
: Structural Part

 **PRODUCTION PERIOD**
: 2007 To Present



#10 PROGRAMS AND PRODUCTS

06 | UAV

CUSTOMER

: KAI
KAL

PRODUCT

: Tube Assembly
Weld Assembly

FUNCTION

: Hydraulic Line
Fuel Line

PRODUCTION PERIOD

: 2014 To Present



#10 PROGRAMS AND PRODUCTS

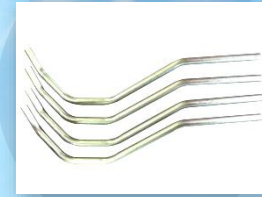
07 | K-9 SELF-PROPELLED ARTILLERY

CUSTOMER
: Hyundai-Wia

PRODUCT
: Tube Assembly
Weld Assembly

FUNCTION
: Hydraulic Line,
Fuel Line

PRODUCTION PERIOD
: 2013 To Present



#10 PROGRAMS AND PRODUCTS

08 | KOREA SPACE LAUNCH VEHICLE II

CUSTOMER

: KARI

PRODUCT

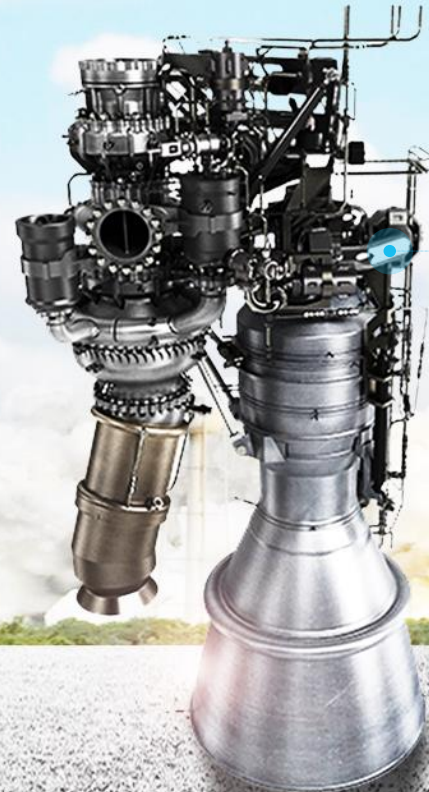
: 75Ton Engine CC Fuel/LOX Pipe Assembly
75Ton Engine CC Fuel/LOX Pipe Assembly
7Ton Engine CC Fuel/LOX Pipe Assembly
7Ton Engine CC Fuel/LOX Pipe Assembly

FUNCTION

: Fuel/LOX High Pressure Pipe Line

PRODUCTION PERIOD

: 2016 To Present



#11 CUSTOMERS

Direct

- › **Korea Aerospace Industries (KAI)**
- › **Volvo Korea** (For Construction Equipment)
- › **HANWHA Aerospace**

Indirect

- › **Boeing Through KAI, ASTK**
- › **Sukhoi Civil Aircraft Through SAMCO**
- › **Korea Aerospace Research Institute (KARI)**
- › **Korean Air Lines (KAL) Through HANWHA Machinery**

#12 PERFORMANCES

5 Key Operational Metrics



KPI

2017

Trend
(2016/2017)

04 | STRATEGY



#13 STRENGTHS AND BENEFITS TO CUSTOMERS

01	02	03	04	05
<p>Advanced Tube Bending Technology Proven By KAI As 1st Tier Supplier</p>	<p>Solid Financial Structure</p>	<p>Excellent Quality Management</p>	<p>Strong Management Commitment For Business Expansion</p>	<p>Specialized Tube & Duct Welding For Aerospace Purpose</p>
<ul style="list-style-type: none"> ➢ Equipped Advanced Tube Bending System : CNC Bender & Measuring Machines ➢ Various Swaging & End Forming Machines ➢ Delivered 100% Tube Assemblies To KAI For KF-16, T-50, KT-1, KUH 	<ul style="list-style-type: none"> ➢ Strong Financial Support through C.E Business ➢ Equipment owned by Sewoo 	<ul style="list-style-type: none"> ➢ Excellent Quality Awarded For 4 Consecutive Years By KAI ➢ Skilled & Quality controlled Labor 	<ul style="list-style-type: none"> ➢ Continued Investment For Process Improvement ➢ Consistent Pursuit Of Tubing & Welding Specialty ➢ International READY ➢ Customization of Facility to Customer Requirements 	<ul style="list-style-type: none"> ➢ GTAW For Aluminum, Stainless Steel, Titanium And Nickel Alloy ➢ NADCAP Certified Welding & Heat Treatment Process ➢ Delivered 100% Weld Assemblies to KAI For T-50, KT-1, KUH

#13 STRENGTHS AND BENEFITS TO CUSTOMERS

06

Guaranteed Performances

- **Better Than Market Expectations In Terms Of :**

Price (RC & NRC)
 Turn Around Time & On Time Deliveries Monitoring
 Responsiveness & Reactivity
 Respect Of Contractual Obligations
 Autonomous & Reliable

07

Cooperation / Offset

- **Export / Sourcing**

Manufacturing Sub-contract
 Are Eligible For Offset

Internationally **READY &**
 Motivated & Enthusiastic to
 develop Long Term
 Partnership

#14 CORE VALUES

Message from the President & CEO

Respect for mankind is Sewoo's management philosophy. This philosophy has made true communication possible among the all employees which in turn creates high-quality products that gain the trust of our customers. Sewoo will continuously work to provide products that satisfy customers' expectation.

- ✓ Integrity
- ✓ Flawless Execution
- ✓ Commitment

- ✓ Autonomy
- ✓ Responsiveness
- ✓ Innovation

#15 VISION

“ Solution Provider in Aerospace Tubing & Welding
Best Global Hydraulic Pipe Partner ”



#16 STRATEGICAL APPROACH

- **Potential Customer may be seeking for :**

- Vertical Integration,
- Improve competitiveness for business development and sales,
- Performances of its supply chain,
- Competitive Price, Lead Time, Best Quality
- Do benchmarking.

- **Sewoo wishes to :**

- Develop overseas business,
- Provide the best benefits to its customers,
- Join supply chain through Tier 1 & Tier 2 & Tiers 3

- **Next steps Suggestions :**

- Provide additional information through RFI,
- Supplier registration,
- Sewoo will support Any sourcing opportunity through RFQ,
- Visit our facility,
- Technical Audit



#17 CONTACTS INFORMATION

CONTACT POINT

> SALES & MARKETING

· KWAK, BYUNGDAE

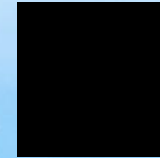
T : 82 55 850 0706

E : sales@sewooaero.com

WEB SITE

> <http://www.sewoo.biz/>

QR CODE



SEWOO

Thank you so much