

# SēAH FS

English / 한국어



## GLOBAL LEADING SOLUTION PROVIDER FOR FLUID SYSTEMS

Offering a wide range of tube technologies, SeAH FS develops and manufactures high valued small diameter steel tubes and related components, assembled parts, and module systems. Over the past 35 years, SeAH FS has successfully supported Korea's home appliances and automotive industries developing into a global excellence.

As one of the core affiliates of SeAH Group, a global leader in steel industry, SeAH FS has successfully differentiated itself through sustained technology leadership, innovative manufacturing technologies, and product competitiveness. With a global footprint of 20 sites in 6 countries to offer contact service to customers, our reputation as high quality materials supplier will be the basis to grow into excellence in tier-1 business as well.

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» About Our Company 회사소개

» Automotive Parts 자동차용 제품

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» Business Network 국·내외 네트워크

» Home Appliances Parts 가전용 제품

» R&D 연구개발

» Tubes & Coating 튜브 및 코팅 소개

» Facilities 설비소개

» SeAH Group 세아그룹



### HISTORY | 연혁

|   |   |  |   |  |  |
|---|---|--|---|--|--|
| <b>1979</b><br>Founded Busan Bundy Corp. in Pyeongtaek city<br><br>주식회사 부산번디 설립 | <b>1981</b><br>Started to supply all of domestic refrigerator manufacturing companies.<br><br>국내 냉장고 전업체 공급개시 | <b>1988</b><br>Changed company name to Korea Bundy Corp.<br><br>주식회사 한국번디로 상호 변경 | <b>1993</b><br>Built company's 2nd plant in Gwangju city<br><br>광주광역시 하남공단에 제2공장 준공 | <b>1995</b><br>Started to supply all of domestic Automotive manufacturing companies.<br><br>국내 자동차 전업체 공급 개시 | <b>2003</b><br>Built overseas plants(Foshan, Changsha, Chuzhou of China and Oakland of New Zealand)<br><br>해외공장 설립(중국 포산/장사/추조, 뉴질랜드 오클랜드) |
|---|---|--|---|--|--|



## 유체 시스템 솔루션 세계적 선도기업

차별화된 Tube를 생산할 수 있는 기술력을 바탕으로 부가가치가 높은 Components & Part Assembly, Module System을 개발, 제조하는 세아FS는 지난 35년 동안 Small diameter steel tube를 만들어 한국의 가전 산업과 자동차 산업이 글로벌 일류로 발전하는 데 큰 몫을 해왔습니다.

Steel Industry의 글로벌 리더인 SeAH 그룹 핵심 계열사인 세아FS는 지속적인 R&D 투자에 바탕을 둔 Technology leadership의 유지, 차별화된 제조, 품질경쟁력을 바탕으로 6개국 20개 도시의 고객근접 footprint를 통한 Globalization, Tier-2로서 소재분야에서 쌓아 올린 명성을 Tier-1 Industry에서도 함께 이어갈 것입니다.



## COMPANY PROFILES

Company : SeAH FS  
 C.E.O. : Jin-Gun Lee  
 Established : March, 1979  
 Business Location : Korea, China, Thailand, Mexico, India, Indonesia  
 20 plants in 6 Countries  
 Sales : USD 400 Million (including Overseas) based of 2013  
 Employee : 2,000  
 Business : Automotive Tubing Parts, Home Appliances Parts

회 사 명 : (주)세아FS  
 대표이사 : 이 진 건  
 설 립 일 : 1979. 03  
 사 업 장 : 한국, 중국, 태국, 멕시코, 인도, 인도네시아  
 6개국 20개 공장  
 매 출 액 : 4,000억원(해외공장 포함) 2013년 기준  
 종 업 원 : 2,000명  
 주요제품 : 자동차 및 가전용 Fluid 부품

**2005**  
 Built Seotan Plant and overseas plant(Suzhou of China)  
 서탄공장 설립  
 해외공장 준공(중국 소주)

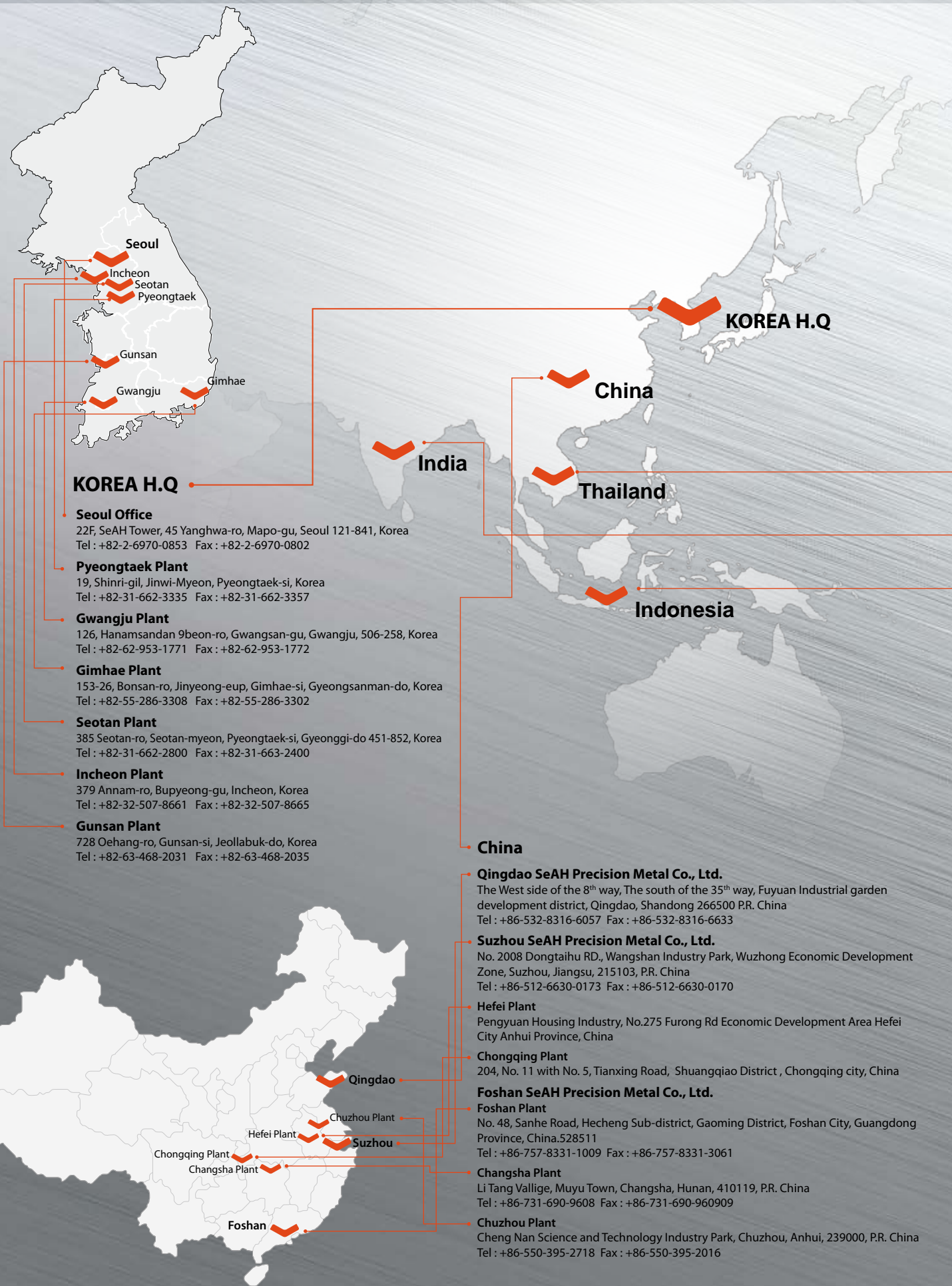
**2007**  
 Built overseas plant(Chonburi of Thailand)  
 해외공장 준공(태국 촌부리)

**2008**  
 Built Overseas plant(Qingdao of China, Queretaro of Mexico and Indonesia)  
 해외공장 준공  
 (중국 청도, 멕시코 궤레따로, 인도네시아)

**2012**  
 Built Overseas Plants (Chennai, Noida of India)  
 해외공장 준공 (인도 첸나이, 노이다)

**2014**  
 Changed Company name to SeAH FS  
 '세아FS'로 사명 변경

# GLOBAL SeAH FS



## KOREA H.Q.

### Seoul Office

22F, SeAH Tower, 45 Yanghwa-ro, Mapo-gu, Seoul 121-841, Korea  
Tel : +82-2-6970-0853 Fax : +82-2-6970-0802

### Pyeongtaek Plant

19, Shinri-gil, Jinwi-Myeon, Pyeongtaek-si, Korea  
Tel : +82-31-662-3335 Fax : +82-31-662-3357

### Gwangju Plant

126, Hanamsandan 9beon-ro, Gwangsan-gu, Gwangju, 506-258, Korea  
Tel : +82-62-953-1771 Fax : +82-62-953-1772

### Gimhae Plant

153-26, Bonsan-ro, Jinyeong-eup, Gimhae-si, Gyeongsanman-do, Korea  
Tel : +82-55-286-3308 Fax : +82-55-286-3302

### Seotan Plant

385 Seotan-ro, Seotan-myeon, Pyeongtaek-si, Gyeonggi-do 451-852, Korea  
Tel : +82-31-662-2800 Fax : +82-31-663-2400

### Incheon Plant

379 Annam-ro, Bupyeong-gu, Incheon, Korea  
Tel : +82-32-507-8661 Fax : +82-32-507-8665

### Gunsan Plant

728 Oehang-ro, Gunsan-si, Jeollabuk-do, Korea  
Tel : +82-63-468-2031 Fax : +82-63-468-2035

## KOREA H.Q.

## China

## India

## Thailand

## Indonesia

## China

### Qingdao SeAH Precision Metal Co., Ltd.

The West side of the 8<sup>th</sup> way, The south of the 35<sup>th</sup> way, Fuyuan Industrial garden development district, Qingdao, Shandong 266500 P.R. China  
Tel : +86-532-8316-6057 Fax : +86-532-8316-6633

### Suzhou SeAH Precision Metal Co., Ltd.

No. 2008 Dongtaihu RD., Wangshan Industry Park, Wuzhong Economic Development Zone, Suzhou, Jiangsu, 215103, P.R. China  
Tel : +86-512-6630-0173 Fax : +86-512-6630-0170

### Hefei Plant

Pengyuan Housing Industry, No.275 Furong Rd Economic Development Area Hefei City Anhui Province, China

### Chongqing Plant

204, No. 11 with No. 5, Tianxing Road, Shuangqiao District, Chongqing city, China

### Foshan SeAH Precision Metal Co., Ltd.

#### Foshan Plant

No. 48, Sanhe Road, Hecheng Sub-district, Gaoming District, Foshan City, Guangdong Province, China.528511  
Tel : +86-757-8331-1009 Fax : +86-757-8331-3061

#### Changsha Plant

Li Tang Vallige, Muyu Town, Changsha, Hunan, 410119, P.R. China  
Tel : +86-731-690-9608 Fax : +86-731-690-960909

#### Chuzhou Plant

Cheng Nan Science and Technology Industry Park, Chuzhou, Anhui, 239000, P.R. China  
Tel : +86-550-395-2718 Fax : +86-550-395-2016

# GLOBAL LEADING SOLUTION PROVIDER FOR FLUID SYSTEMS

● **TUBE MILL**

**Korea** Pyeong-taek, Gwang-ju | **China** Suzhou, Qingdao, Foshan | **Thailand** Chonburi

● **FABRICATION**

**Korea** Pyeong-taek, Gwang-ju, Seo-tan, Kim-hae, Incheon, Gun-san | **China** Suzhou, Qingdao, Foshan, Changsha, Chuzhou, Chongqing, Hefei | **Thailand** Chonburi | **Mexico** Queretaro | **India** Noida, Chennai | **Indonesia** Bekasi-Jawa Barat

● **SALES HQ OFFICE**

**Korea** Seoul

● **RESEARCH & DEVELOPMENT**

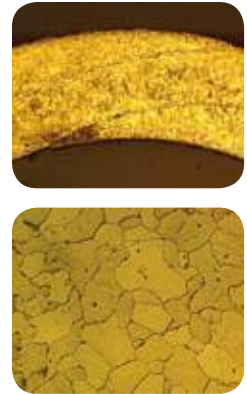
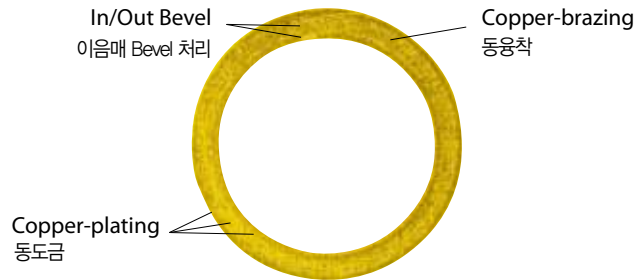
**Korea** Pyeong-taek, Gwang-ju



## COPPER BRAZED DOUBLE WALL STEEL TUBING

### 이중권 강관

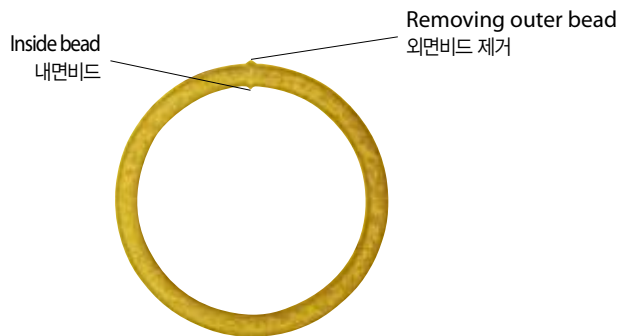
#### ● CROSS-SECTION OF DOUBLE WALL STEEL TUBING 이중권 강관 단면 구조



## ELECTRIC WELDED SINGLE WALL STEEL TUBING

### 일중권 강관

#### ● CROSS-SECTION OF SINGLE WALL STEEL TUBING 일중권 강관 단면 구조



#### ● THICKNESS PER INNER TREATMENT

| TYPE                   | SURFACE TREATMENT | THICKNESS(μm) | REMARKS                      |
|------------------------|-------------------|---------------|------------------------------|
| Double-Wall Steel Tube | Copper-plating    | 3             | Essential Copper-plating     |
|                        | Non plating       | 0             |                              |
| Single-Wall Steel Tube | Copper-plating    | 3             | According to customer's spec |
|                        | Nickel-plating    | 3             |                              |

#### ● SPECIFICATIONS

| MECHANICAL PROPERTIES |                                |
|-----------------------|--------------------------------|
| Tensile Strength      | MIN. 294Mpa                    |
| Yield Strength        | MIN. 177Mpa                    |
| Elongation Rate       | MIN. 25%(distance 50mm)        |
| Hardness              | HYUNDAI & KIA Motors Standards |

| CHEMICAL COMPOSITION |            |
|----------------------|------------|
| C                    | MAX 0.15%  |
| Si                   | Tr         |
| Mn                   | MAX 0.60%  |
| P                    | MAX 0.050% |
| S                    | MAX 0.050% |

| TOLERANCES     |         |
|----------------|---------|
| Outer diameter | ±0.08mm |
| Thickness      | ±0.08mm |

# GLOBAL LEADING SOLUTION PROVIDER FOR FLUID SYSTEMS

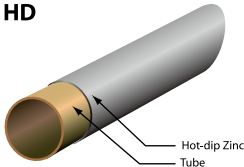
## COATED TUBINGS

### 코팅튜브

#### ● 용융코팅 튜브

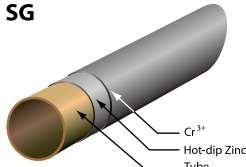
Hot-dip Coated Steel Tubings

**HD**



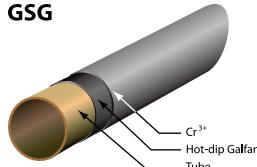
**Hot-dip Zinc**  
Thickness : Min. 5 $\mu$ m  
SST(Red rust) : Min. 72hr

**SG**



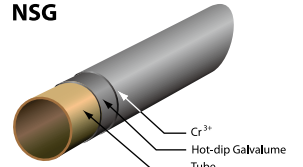
**Hot-dip Zinc + Cr<sup>3+</sup>**  
Thickness : Min. 3 $\mu$ m  
SST(Red rust) : Min. 240hr

**GSG**



**Hot-dip Galvan + Cr<sup>3+</sup>**  
Thickness : Min. 5 $\mu$ m  
SST(Red rust) : Min. 360hr

**NSG**

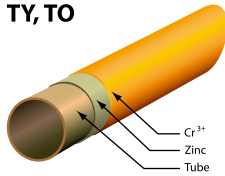


**Hot-dip Galvalume + Cr<sup>3+</sup>**  
Thickness : Min. 5 $\mu$ m  
SST(Red rust) : Min. 720hr

#### ● 전기아연도금 및 불소수지코팅 튜브

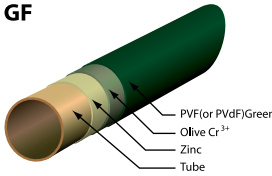
Electro.Zinc Plating and Fluoro Resin Coated Steel Tubings

**TY, TO**



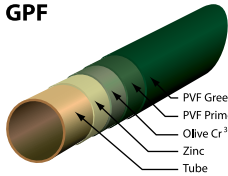
**Zinc + Cr<sup>3+</sup>**  
Thickness : Zinc Min. 8, 13, 25 $\mu$ m  
SST(Red rust) : Min. 192, 288, 480hr

**GF**



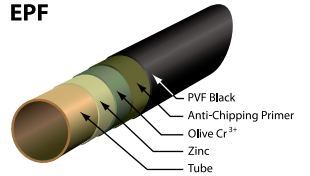
**Zinc + Olive Cr<sup>3+</sup> + PVF(or PVdF)Green**  
Thickness : Zinc Min. 13 or 25 $\mu$ m  
PVF(or PVdF) Min. 10 $\mu$ m, Avg. 20 $\mu$ m  
SST(Red rust) : Min. 3,000hr

**GPF**



**Zinc + Olive Cr<sup>3+</sup> + PVF-Primer + PVF Green**  
Thickness : Zinc 13 or 25 $\mu$ m  
PVF Min. 15 $\mu$ m, Avg. 25 $\mu$ m  
SST(Red rust) : Min. 6,000hr

**EPF**

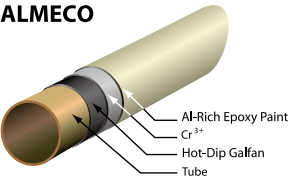


**Zinc + Olive Cr<sup>3+</sup> + Anti Chipping-Primer + PVF Black**  
Thickness : Zinc 13 or 25 $\mu$ m  
PVF Min. 15 $\mu$ m, Avg. 25 $\mu$ m  
SST(Red rust) : Min. 12,000hr

#### ● Al-Rich Epoxy Paint 튜브

Al-Rich Epoxy Painted Steel Tubing

**ALMECO**

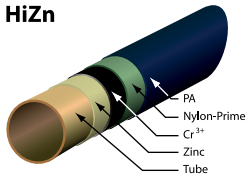


**Hot-dip Galvan + Cr<sup>3+</sup> + Al-Rich Epoxy Paint**  
Thickness : Galvan Min. 5 $\mu$ m  
Al-Rich Epoxy Paint 3 $\mu$ m  
SST(Red rust) : Min. 2,000hr

#### ● PA 코팅 튜브

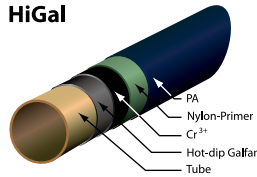
PA Coated Steel Tubings

**HiZn**



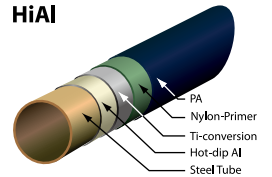
**Zinc + Cr<sup>3+</sup> + Nylon Primer + PA**  
Thickness : Zinc Min. 13 or 25 $\mu$ m  
PA Min. 100 $\mu$ m or Min. 120 $\mu$ m  
Avg. 150 $\mu$ m  
SST(Red rust) : Min. 12,000hr

**HiGal**



**Hot-dip Galvan + Cr<sup>3+</sup> + Nylon Primer + PA**  
Thickness : Galvan Min. 5 $\mu$ m  
PA Min. 150 $\mu$ m, Avg. 170 $\mu$ m  
SST(Red rust) : Min. 12,000hr

**HiAl**

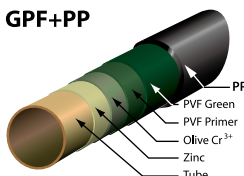


**Hot-dip Al + Ti-conversion + Nylon Primer + PA**  
Thickness : Hot-dip Al Min. 80 $\mu$ m Avg. 100 $\mu$ m  
PA Min. 100 $\mu$ m  
SST(Red rust) : Min. 12,000hr

#### ● PP 튜브

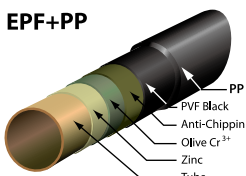
PP Jacket Tubings

**GPF+PP**



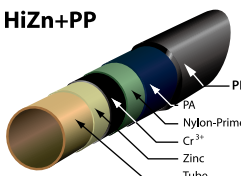
**Zinc + Olive Cr<sup>3+</sup> + PVF-Primer + PVF Green + PP**  
Thickness : Zinc 13 or 25 $\mu$ m  
PVF Min. 15 $\mu$ m,  
Avg. 25 $\mu$ m  
PP Avg. 1,000 $\mu$ m

**EPF+PP**



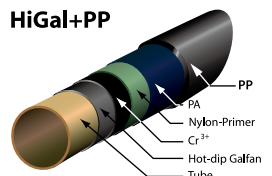
**Zinc + Olive Cr<sup>3+</sup> + Anti Chipping-Primer + PVF Black + PP**  
Thickness : Zinc 13 or 25 $\mu$ m  
PVF Min. 15 $\mu$ m,  
Avg. 25 $\mu$ m  
PP Avg. 1,000 $\mu$ m

**HiZn+PP**



**Zinc + Cr<sup>3+</sup> + Nylon Primer + PA + PP**  
Thickness : Zinc Min. 13 or 25 $\mu$ m  
PA Min. 100 $\mu$ m or Min. 120 $\mu$ m  
Avg. 150 $\mu$ m  
PP Avg. 1,000 $\mu$ m

**HiGal+PP**



**Hot-dip Galvan + Cr<sup>3+</sup> + Nylon Primer + PA + PP**  
Thickness : Galvan Min. 5 $\mu$ m,  
PA Min. 150 $\mu$ m,  
Avg. 170 $\mu$ m  
PP Avg. 1,000 $\mu$ m

# SeAH FS AUTOMOTIVE PARTS

**FLUID CARRYING SYSTEM FOR AUTOMOBILE**  
(PASSENGER VEHICLES & COMMERCIAL VEHICLES)

SeAH FS produces automotive tubes enabling customers to extend assurance life of automobiles while staying ahead of ever-changing environmental regulations. These tubes have been developed to be highly corrosion-resistant and environment-friendly. As a key player in production technology frontier, SeAH FS has been producing tubes for brake and fuel systems over the past 35 years. These tubes possess outstanding pressure resistance and mechanical functionality, while offering low inner-fluid resistance and high thermal transmission along with exceptional anti-corrosion benefits.

## 자동차용 (승용차 · 상용차)

세아FS가 생산하는 자동차용 튜브는 자동차의 보증기한 연장과 환경규제에 대응할 수 있는 제품으로써 고내식성과 친환경적 컨셉에 맞게 개발되었습니다. 최첨단의 제조기술을 확보하여 35년의 경험을 바탕으로 생산되는 제품은 주로 Brake 및 Fuel Systems의 배관라인에 사용되며, 우수한 내압력과 기계적 성질을 지녔으며, 내면 유체의 낮은 저항력과 높은 열전도율, 그리고 우수한 방청력을 제공합니다.

### Brake & Fuel Bundle Systems

- High Pressure Line (Brake & Clutch Tubes)
- Brake & Fuel Bundles
- ABS Bundles (Antilock Brake Systems)
- ESP Systems (Electronic Stability Program)

### Power Train Systems

- Power Steering (Feed, Return, Pressure, Suction)
- Transmission Oil Cooling
- Engine Oil Cooling
- Air Conditioning
- Heating

### Fuel Systems

- Oil Filler Neck Tubes
- Fuel Storage & Delivery Systems
- Fuel Jumper Tubes
- Fuel Pump Plate Ass'y Tubes

### Engine

- MPI
- GDI
- Injection
- Common Rail System
- CNG
- EGR
- EGR Cooler System

### Others

- Seat Track Lever
- Side Airbag
- Head Rest
- Sun Roof
- Wiper Linkage



Suction Tube



Power Steering Cooler Tube



Clutch Pipe



Fuel Pump Tube



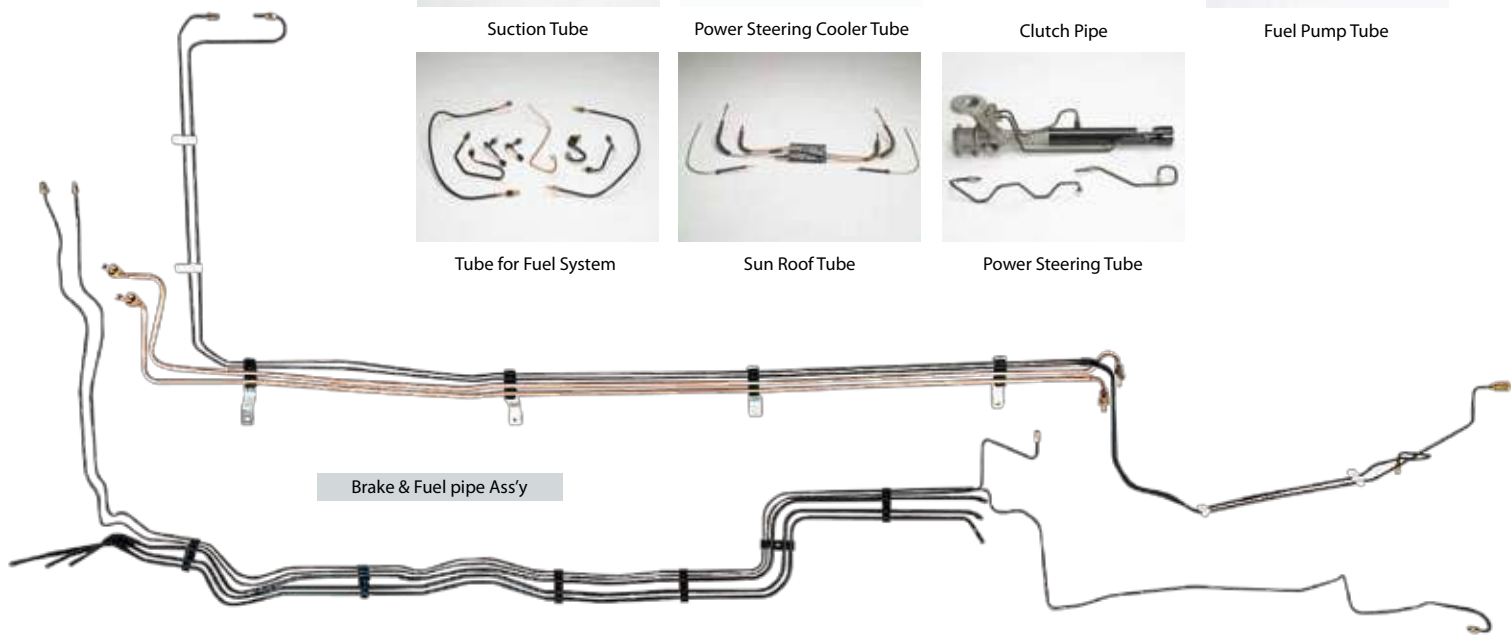
Tube for Fuel System



Sun Roof Tube



Power Steering Tube



Brake & Fuel pipe Ass'y



# GLOBAL LEADING SOLUTION PROVIDER FOR FLUID SYSTEMS

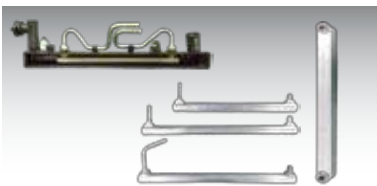
## OTHER PRODUCTS FOR AUTOMOBILE

In addition to manufacturing fluid carrying products, **SeAH FS** also produces a number of other tube products. These include headrest pipes used in seat frames, track lever pipes, EGR which re-circulates the exhaust gases, and transmission oil cooler pipes which lower the oil temperature by heat exchanging with water from the radiator. Recently, **SeAH FS** has started to drive development of plasma welded pipes that can substitute conventional seamless fuel rail used in Gasoline Direct Injection (GDI) engines.

## 자동차 기타제품

자동차용으로 배관라인에 사용되는 제품 이외에 자동차 내부의 기타 여러가지 제품을 생산하고 있습니다. 시트프레임에 사용되는 headrest pipe, track lever pipe와 자동차 라디에이터 내에 물과 열교환을 하여 오일의 온도를 낮춰주는 transmission oil cooler pipe제품, 그리고 배기가스 재순환 장치로 사용되는 EGR pipe를 생산하고 있습니다. 최근에는 가솔린차량의 연료분사방식을 개선한 GDI 엔진에 사용되는 연료레일을 Seamless가 아닌 직조관 형태로 개발을 추진 중입니다.

### ● OIL COOLER



ATF Oil Cooler



Engine Oil Cooler



Heat Exchanger

### ● SEAT FRAME



Headrest Pipe



Seat Track Lever Pipe

### ● ENGINE PARTS



Exhaust Pipe



EGR



Fuel Rail Pipe

### ● OTHERS



High Pressure Tube



Water Pipe



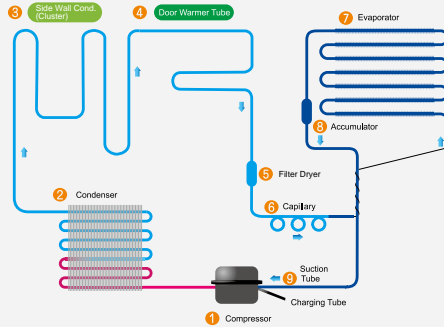
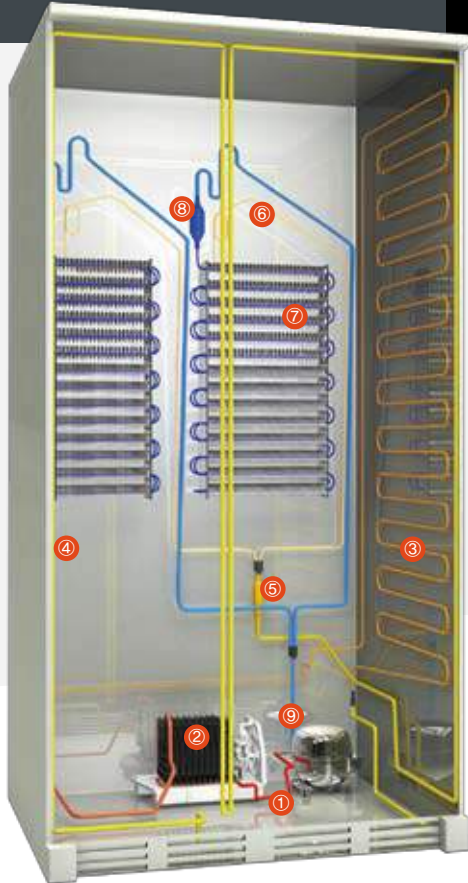
Fuel Filler Neck

# SeAH FS HOME APPLIANCES PARTS

## FLUID CARRYING SYSTEM FOR REFRIGERATOR

### 냉장고용

Our products are also used in a variety of refrigerator core circuit components such as condensers, hot pipes, suctions, dryers, and capillaries. We can customize products to a range of specifications and diverse surface treatments according to our customers' requests. Outstanding technology and the quality assurance enables SeAH FS to offer high quality products to our customers. In particular, according to the demands of new refrigerants, SeAH FS is able to meet our customers' demands through high tech production facilities, moisture and oil control processes, and thorough quality inspection of inner particles. We have independently developed high quality SG, GSG and NSG tubes for the first time in the world. These tubes have achieved great popularity as a substitute for copper pipe in the cooling cycle component of refrigerators, while meeting global RoHS directives.



- ➔ 1 Comp.Tube   ➔ 2 Cond.(WOT,TF,..)   ➔ 3 Skin Cond. (Cluster)
- ➔ 4 Door Warmer   ➔ 5 Filter Dryer   ➔ 6 Capillary
- ➔ 7 Evaporator   ➔ 8 Accumulator   ➔ 9 Suction Pipe

우리의 제품은 또한 냉장고의 Cycle 핵심부품인 Condenser, Compressor, Hot tube, Suction, Dryer, Capillary 등에도 사용되고 있습니다. 제품규격 및 표면처리는 고객 요구에 의하여 생산되며 세아FS의 우수한 기술력과 품질관리 시스템에 의하여 고품질의 제품을 공급하고 있습니다. 특히 냉장고의 신냉매 사용에 따라 Tube 내부의 이물질, 수분관리, 유분관리는 최신설비와 철저한 품질검사로 고객의 요구에 부응하고 있습니다. 당사가 세계 최초로 독자 개발한 고품질의 SG, GSG, NSG 튜브는 RoHS를 만족시킴과 동시에 냉기 사이클 부품의 동파이프 대체재로 각광 받고 있습니다.



L-Fin Cond.



Turn Fin Cond. Modular



Wire Cond. Modular



Wire Cond.(Vertical type)



Al Fin Cond.



Cu Suction



ALFOS(Al Suction)



Door Warmer



Al Evaporator



Compressor Tube

# GLOBAL LEADING SOLUTION PROVIDER FOR FLUID SYSTEMS

## FLUID CARRYING SYSTEM FOR HOUSEHOLD USE

We also provide a variety of cycle parts, such as condensers, skin evaporators, shelf evaporators, suction, capillaries, dryers and hot gas loops, which are equipped in water purifiers, chillers, showcases, and commercial refrigerators.

## 기타 가전용

당사는 각종 정수기, 냉온수기, Show Case, 업소용 냉장고 등의 냉장 냉동 제품에 필요한 Condenser류, Skin evap., Shelf evap., Suction, Capillary, Dryer, Hot pipe 등 다양한 Cycle 부품을 공급하고 있습니다.



## COPPER PRODUCTS

SeAH FS' copper products are utilized across essential refrigerant circuit components such as refrigerators, air conditioners, and compressors. These products can be arranged in various shipping packages such as level wound coils, bunch coils, pancake coils, and straight tubes in accordance with our customers' diverse demands.

## 동제품

당사에서 가공 생산하는 동가공 제품은 냉장고, 에어컨, 컴프레서 등 냉매관련 핵심부품으로 사용되고 있으며, Level wound, Bunch coil, Pan cake, 직관 등 다양한 형태로 가공하여 고객의 요구를 충족시키고 있습니다.



## FACILITIES

In order to meet customers' needs, we are enhancing our competitiveness with the latest equipment, facilities, and in-house fabrication manufacturing processes exceeding those of competitors.

### 설비현황

고객의 요구사항에 부응하기 위해 최신의 설비를 갖추고 직접 가공함으로써 경쟁업체가 따라오지 못할 뛰어난 경쟁력을 이미 확보하고 있습니다.



Auto Forming M/C



Hydro Forming MC



Air Forming M/C



B&F Ass'y & Leak Test M/C



Piercing M/C



Plastic Steam Molding



Deburring M/C



Auto Deburring M/C



Peeling M/C



Laser Peeling M/C



Heat Shrink Oven



Double Face Auto Deburring M/C

## RESEARCH & DEVELOPMENT

SeAH FS has obtained a variety of patent rights, utility models, and registered trademarks through continuous investment in R&D.

### 연구개발

세아FS는 끊임없는 연구개발의 결과로 각종 특허권과 실용신안 및 상표를 등록하였습니다.



# GLOBAL LEADING SOLUTION PROVIDER FOR FLUID SYSTEMS

## QUALITY ASSURANCE SYSTEM

With a firm belief that only high quality based on humanism, can secure competitiveness, we take pride in creating the perfect products that can withstand any challenge. That is our promise.

## 품질보증시스템

휴머니즘으로부터 스며나오는 인화의 품질만이 품질경쟁력을 확보하는 지름길이라는 신념으로 가장 완벽한 제품을 개발하는 기술, 그것이 우리의 신기술이며 자랑입니다.



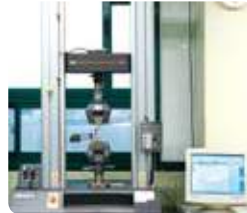
Moisture Meter



Oil Content Analysis Test



Heat cycle resistance test



U.T.M(Universal Test Machine)



Eddy Current Test(ECT)



Salt Spray Test Chamber



Surface Roughness Test



Vickers Hardness Test



X-ray fluorescence Test(XRF)



Metals Analyzer

SeAH FS continuously puts effort into localizing, alternating, and developing new products to reduce costs and improve quality to maximize our customers' satisfaction. While focusing on our customers, we continuously invest in R&D to anticipate the demands of tomorrow and stay ahead of the market.

세아FS는 고객의 요구사항을 충분히 반영한 제품 및 서비스 개발은 물론 고객의 품질향상과 원가절감을 위한 국산화 개발, 대체품 개발, 신제품 개발을 지속적으로 실시하고 있으며, 고객과의 관계강화와 고객만족을 극대화하기 위해서 연구개발에 전념하고 있습니다.



SEM-EDX



ICP-OES



High-Temp. Pressure Burst Tester



Chemical Resistance tester



Combined Corrosion Tester



Metallographic Microscope



Impulse Tester



Life Cycle Tester



3D Measuring Machine



High Temp. Drying-Oven

## AFFILIATES

## Steel Pipe and Hot Forged Steel

### SeAH Steel



Welded Carbon Steel Pipe

In addition to HFW(ERW) pipes, SeAH Steel diversified its product selection by adding SAW pipes after setting up JCOE facilities and heavy-wall SAW pipe mill. Not only it led SeAH Steel to increase its production capacity, but also to utilize QT & CNC threading machines for producing OCTG pipes

|   |   |   |   |   |
|---|---|---|---|---|
| ① | ② | ③ | ④ | ⑤ |
|   |   |   | ⑥ | ⑦ |

- ① SAW
- ② SPIRAL
- ③ GALVANIZING
- ④ CGL LINE1
- ⑤ CGL LINE2
- ⑥ CCL LINE2
- ⑦ TI-TUBE

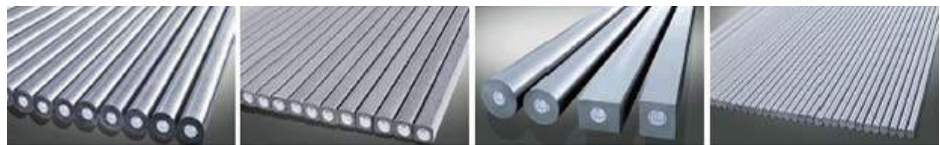


### SeAH Besteel



#### Special Steel

SeAH Besteel operates one of the largest special steel production facilities in Korea. It manufactures nearly 2 million tons of rolled and forged products. Based on its production capacity, SeAH Besteel produces special steel materials such as H-Steel, bearing steel, drill collar bar, and etc. They are applied to the automobile, oil well, wind mill gear, and rock drill products



| Classification | Steel Grade  | Classification                     | Steel Grade  |
|----------------|--|------------------------------------|--|
| Carbon Steel   | Low Carbon Steel<br>Medium Carbon Steel<br>High Carbon Steel<br>Boron-Carbon Steel     | H-Steel                            | MN Steel<br>MN-CR Steel<br>CR-MO Steel<br>NI-CR-MO Steel                             |
| Alloy Steel    | MN-CR Steel<br>CR-MO Steel<br>NI-CR-MO Steel<br>Boron-Alloy Steel<br>Micro-Alloy Steel | Special Steel for Multiple Purpose | Chain Steel<br>Spring Steel<br>Free Cutting Steel-Carbon<br>Free Cutting Steel-Alloy |
| Bearing Steel  | CR Steel<br>CR-MO Steel  | Tool Steel                         | Carbon<br>Alloy<br>Plastic Mold<br>Die Steel   |



Axle Housing



Front Driving Differential Assembly



Rear Axle Assembly

# GLOBAL LEADING SOLUTION PROVIDER FOR FLUID SYSTEMS

## AFFILIATES

## CHQ Wire & Stainless Steel Wire

### SeAH Special Steel

#### Cold Heading Quality Wire(CHQ Wire)

CHQ Wire refers to steel wire that is made by drawing or annealing special steel wire rods. It is used in making coupling parts such as bolts, nuts and small crews and in parts for machines such as cars and electrical equipment. SeAH Special Steel produces top-notch cold working products with regard to durability and precision.



#### Cold Drawn Bar(CD Bar)

CD Bar is a primary material for mechanical working. It comes in round, square, and hexagonal shapes. In order to have a proper product with uniformity. It must pass through a strict manufacturing process.



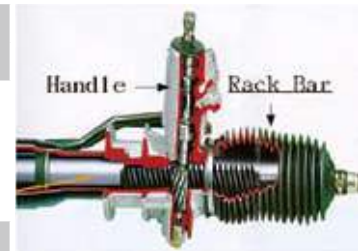
< CHQ Wire based products  
<< CD Bar based products

### SeAH Metal



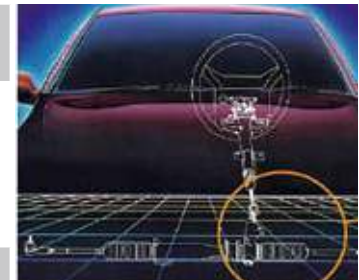
#### Manual Steering, MDPS(After Heat Treatment) : Light Vehicle

| Standard  | Length(mm) |         | Applicable Model No. |
|-----------|------------|---------|----------------------|
|           | Minimum    | Maximum |                      |
| Ø 22.00mm | 541        | 682     | 3                    |
| Ø 22.25mm | 287        | 352     | 4                    |
| Ø 24.25mm | 540        | 661     | 16                   |
| Ø 28.00mm | 632        | 732     | 4                    |
| Ø 30.30mm | 663        | 663     | 1                    |
| Total     |            |         | 28                   |



#### Power Steering(Before Heat Treatment) : Passenger Car, SUV, RV

| Standard  | Length(mm) |         | Applicable Model No. |
|-----------|------------|---------|----------------------|
|           | Minimum    | Maximum |                      |
| Ø 22.25mm | 541        | 597     | 8                    |
| Ø 24.25mm | 540        | 726     | 18                   |
| Ø 26.30mm | 572        | 605     | 8                    |
| Ø 28.00mm | 538        | 781     | 16                   |
| Ø 30.30mm | 663        | 779     | 11                   |
| Ø 32.30mm | 747        | 747     | 1                    |
| Total     |            |         | 62                   |



**SeAH** FS  
[www.seahfs.com](http://www.seahfs.com)