



TYPE APPROVAL CERTIFICATE

Certificate No. : GCH32126-PE001 **Initial Approval** : 22nd January, 2014
Product : Tube Fittings
Manufacturer : HANSUN ENGINEERING CO., LTD
27, Noksansandan 361-ro, gangseo-Gu, Busan, Korea
Product Description : S-LOK Type Tube Fittings
" See Appendix 1 "

Approval Condition : " See Appendix 1 "

THIS IS TO CERTIFY that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows and entered in the "List of Approved Manufacturers and Type Approved Equipment".

Pt. 5, Ch. 6, Sec. 1 of the Rules for Classification of Steel Ships.

This Certificate is valid until 21st January, 2024

Issued at Gamcheon, Korea on 19th February, 2019



This certificate is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication of the certificate can be confirmed from "<http://e-cert.krs.co.kr>" by using the tracking No (ME19008885481) and certificate No.(GCH32126-PE001).



KOREAN REGISTER OF SHIPPING

General Manager of
Gamcheon Branch Office

- Note* : 1. This certificate will be valid subject to complying with the approval conditions described on the certificate and/or on the Rules of this Society.
2. This certificate will be invalid from the expiry date aforementioned unless the extension or renewal has been granted to the applicant or the manufacturer.
3. Any significant modifications or changes in design or construction to the above product without approval from this Society will render this certificate invalid.
4. Should the specified rules, regulations or standards be amended during the validity of this certificate, the product is to be re-approved by this Society in accordance with the requirements as amended.

Appendix 1

Product Description and/or Approval Condition

Certificate No : GCH32126-PE001

Date of Issue : 19th February, 2019

© Product Description ;

S-LOK Type Tube Fittings

- Material : Stainless Steel, Carbon Steel, Brass
- Pipe O.D. : 1/8 inches to 1-1/2 inches
- Max. Working Pressure : Stainless Steel : 4,900 psi (33.78MPa) to 10,900 psi (75.15MPa)
(depending on sizes) Carbon Steel : 4,900 psi (33.78MPa) to 10,900 psi (75.15MPa)
Brass : 1,500 psi (10.34MPa) to 3,600 psi (24.82MPa)
- Temperature range : Stainless Steel : -196 °C to 649 °C
Carbon Steel : -53 °C to 426 °C
Brass : -40 °C to 205 °C
- Approved Document No. : KR/S-LOK/121213 approved on 12 Dec, 2013
- Designation : Union(SU), Union Elbow(SL), Reducing Union(SUR), Union Tee(ST),
Union Cross(SX), Bulkhead Union(SUB), Male Connector(SMC-N/R/G),
Thermocouple Connector(SMCT), Metal Gasket Connector(SOM),
Bulkhead Male Connector(SMCB), 45° Male Connector(SLBM), Male Elbow(SLM),
Male Run Tee(STRM), Male Branch Tee(STBM), Female Connector(SCF),
Gauge Connector(SCG), Bulkhead Female Connector(SCBF), Female Elbow(SLF),
Female Run Tee(STRF), Female Branch Tee(STBF), Reducer(SR),
Bulkhead Adapter(SAB), Male Adapter(SAM), Female Adapter(SAF/SAG),
Port Connector(SCP), Reducing Port Connector(SCRP), AN Union(SUA),
AN Bulkhead Union(SUBA), AN Adapter(SAA), SAE Male Connector(SMCS),
Positionable SAE Male Elbow(SLS), Positionable 45° SAE Male Elbow(SLBS),
Positionable SAE Male Run Tee(STRS), O-Seal Pipe Thread Connector(SCOP),
Positionable SAE Male Branch Tee(STBS), Male Pipe Weld Connector(SCW),
O-Seal Straight Thread Connector(SCOS), Male Pipe Weld Elbow(SLW),
Tube Socket Weld Connector(SCSW), Tube Socket Weld Elbow(SLSW),
Welding Bulkhead Union(SBUW), Plug(SP), Cap(SC), Tube Insert(SI),
Nut(SN), Front Ferrule(SFF), Back Ferrule(SFB), Ferrule Set(SFS)

© Approval Condition ;

1. This approval is granted on the basis of document assessment and the test reports which were carried out as follows.
 - Tightness Test on 17 Apr, 2013 & 9 May, 2013 & 28 May, 2013
 - Repeated Assembly Test on 17 Apr, 2013 & 9 May, 2013 & 28 May, 2013
 - Bursting Pressure Test on 26 Apr, 2013 & 13 May, 2013 & 30 May, 2013
 - Pull-out Test on 4 Jul, 2013 & 9 Jul, 2013 & 17 Jul, 2013
 - Vibration and Pressure Pulsation Test on 27 Jun, 2013 & 15 Jul, 2013 & 21 Aug, 2013
2. Individual Product Certification is required in case of Tube Fittings belonging to Class I or II.
3. The materials used for Tube Fittings are to be certified by this Society or be satisfactory to the Surveyor.
4. Products are to be marked as follows for traceability of this approval.
 - Manufacturer's name or trade mark.
 - Product style and size.
 - Any additional marking, if required.

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