

SWAGELOK COMPANY  
29500 SOLON ROAD, SOLON,  
OHIO 44139, U.S.A.

Date: 3 February 2020  
Our Ref.: 619200423

Subject: Type approval of Double Ferrule Type Tube Fittings (Renewal)

Dear Mr. Jonathan Seewald,

With reference to your application for the captioned type approval (3 July 2019), we have examined the submitted documents with satisfactory result and type approval has been renewed.

Please find the enclosed type approval certificate(s) and the documents.

For your information, the invoice will be sent to you separately.

|                     |   |                                   |
|---------------------|---|-----------------------------------|
| Product description | : | Double Ferrule Type Tube Fittings |
| Approval No.        | : | 95FV101B                          |
| Type designation(s) | : | Swagelok Tube Fittings            |
| Certificate No.     | : | TA20059M                          |

Your kind attention to the above would be much appreciated.

Best Regards,



T. Shimada  
General Manager  
Machinery Department

Encl.: Type Approval Certificate(s)

Cc: ClassNK New York Office



# NIPPON KAIJI KYOKAI

## TYPE APPROVAL CERTIFICATE

Certificate No. TA20059M

**This is to certify** that the undernoted products have been approved in accordance with the requirements 12.3.3, Part D of the “Rules for the Survey and Construction of Steel Ships” and Chapter 9, Part 6 of the “Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use”.

This certificate is issued to

|                      |  |
|----------------------|--|
| Manufacturer:        | <b>SWAGELOK COMPANY, U.S.A.</b>          |
| Product description: | <b>DOUBLE FERRULE TYPE TUBE FITTINGS</b> |
| Type designation(s): | <b>SWAGELOK TUBE FITTINGS</b>            |
| Test standards:      | <b>IACS UR P2</b>                        |
| Approval No.:        | <b>95FV101B</b>                          |
| Valid until:         | <b>31 January 2025</b>                   |

This certificate is subject to the conditions specified in the attached sheet.

Issued at Tokyo on 3 February 2020

T. Shimada  
General Manager  
Machinery Department

## • Particulars and Conditions

| Series     | Tube Size | Design Pressure (MPa) | Design Temperature (°C) | Material                        |
|------------|-----------|-----------------------|-------------------------|---------------------------------|
| 100 ~ 3200 | 1/16 ~ 2B | 22.57 ~ 77.50         | -196 ~ 93               | SUS316<br>(316 Stainless Steel) |
|            |           | 20.61 ~ 73.58         | -196 ~ 204              |                                 |
|            |           | 17.66 ~ 65.73         | -196 ~ 300              |                                 |
| 200 ~ 3200 | 1/8 ~ 2B  | 18.64 ~ 52.00         | -29 ~ 40                | SCPH<br>(Carbon Steel)          |
|            |           | 15.70 ~ 44.15         | -29 ~ 191               |                                 |
| 200 ~ 1610 | 1/8 ~ 1B  | 29.43 ~ 69.66         | -40 ~ 40                | NCuP<br>(Alloy 400)             |
|            |           | 25.51 ~ 60.83         | -40 ~ 93                |                                 |
|            |           | 22.57 ~ 54.94         | -40 ~ 300               |                                 |
| 200 ~ 1610 | 1/8 ~ 1B  | 9.81 ~ 24.53          | -29 ~ 40                | C3610B<br>(Brass)               |
|            |           | 7.85 ~ 19.62          | -29 ~ 93                |                                 |
|            |           | 4.91 ~ 11.78          | -29 ~ 204               |                                 |
| 3 ~ 38MO   | 3 ~ 38A   | 29.43 ~ 62.79         | -196 ~ 93               | SUS316<br>(316 Stainless Steel) |
|            |           | 26.49 ~ 59.85         | -196 ~ 204              |                                 |
|            |           | 23.55 ~ 52.98         | -196 ~ 300              |                                 |
| 3 ~ 38MO   | 3 ~ 38A   | 18.64 ~ 52.00         | -29 ~ 40                | SCPH<br>(Carbon Steel)          |
|            |           | 15.70 ~ 44.15         | -29 ~ 191               |                                 |
| 6 ~ 25MO   | 6 ~ 25A   | 20.61 ~ 56.90         | -40 ~ 40                | NCuP<br>(Alloy 400)             |
|            |           | 17.66 ~ 50.04         | -40 ~ 93                |                                 |
|            |           | 15.70 ~ 44.15         | -40 ~ 300               |                                 |
| 3 ~ 25MO   | 3 ~ 25A   | 7.85 ~ 22.57          | -29 ~ 40                | C3610B<br>(Brass)               |
|            |           | 5.89 ~ 17.66          | -29 ~ 93                |                                 |
|            |           | 3.93 ~ 10.80          | -29 ~ 204               |                                 |

Note: Design pressure, design temperature and materials are specified in accordance with the manufacturer's catalogs. (No. MS-01-140 "Gaugeable Tube Fittings and Adapter Fittings" and No. MS-01-107 "TUBING DATA")

| Part Material                   | Kind of Fluid   |
|---------------------------------|---|
| SUS316<br>(316 Stainless Steel) | Air, Hydraulic oil, Lubricating oil, Fuel oil, Steam, Fresh water, Natural gas* |
| SCPH (Carbon Steel)             | Air, Hydraulic oil, Lubricating oil, Fuel oil, Steam                            |
| NCuP (Alloy 400)                | Air, Hydraulic oil, Lubricating oil, Fuel oil, Fresh water, Sea water           |
| C3610B (Brass)                  | Air, Hydraulic oil, Lubricating oil, Fuel oil, Steam, Fresh water, Sea water    |

\*Minimum operating temperature to be 0 °C or above when the fluid is natural gas.

• **Type Approval Test**

Tightness test, Vibration test, Pressure pulsation test, Burst pressure test, Pull-out test,  
Repeated assembly test

• **Limitations**

1. The installation of mechanical joints to be in accordance with the manufacturer's assembly instructions and 12.3.3, Part D of the Rules for the Survey and Construction of Steel Ships (hereinafter referred to as "the Rules").
2. The pipe fittings not to be used for suction lines.

• **Production Test**

1. The pipe fittings used for piping belonging to Group I & II defined by 12.1.3, Part D of the Rules to be subjected to hydraulic test in the presence of the Society's surveyor in accordance with 12.6.1, Part D of the Rules.
2. The pipe fittings used for piping of natural gas services to be subjected to hydraulic test in the presence of the Society's surveyor in accordance with 5.13.2, Part N of the Rules.

• **Notice**

Any significant changes in design or construction of the above items may render this certificate invalid.

- The End -