

# SWAGELOK TUBE FITTING ADVANTAGE

Swagelok is your best option for repeatable, leak-tight connections



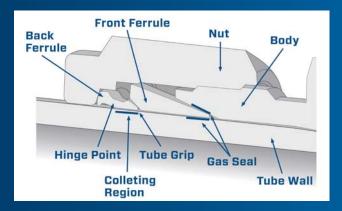
Swagelok developed the original two-ferrule tube fitting in 1947, and with 200 active patents worldwide, we continue to improve our proprietary design for use in thousands of diverse applications.

Swagelok tube fittings have a **grip-type design** that uses a unique **"hinging and colleting" action** to achieve optimal performance in three key areas:

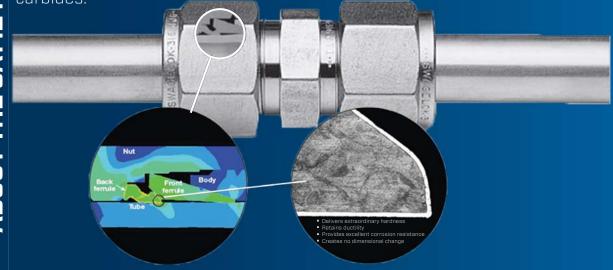
TUBE GRIP Hinging and colleting action provides more direct tube contact/gripping support

GAS SEAL Burnishing/polishing action of the front ferrule creates concentrated zones of contact on the tube and on the body bevel for a stronger seal

**VIBRATION RESISTANCE** the colleting region **better isolates stress risers** at the tube grip to resist bending, deflection, and vibration



SAT12 is Swagelok's unique low-temperature carburization process. It achieves a phenomenal tool steel-like hardness and strength in the ferrule without sacrificing corrosion resistance or material ductility (is non-brittle). In use for nearly two decades, it enriches the surface of stainless and other metal alloys by diffusing carbon atoms between metal atoms without forming carbides.



#### DID YOU KNOW?

Swagelok has received numerous patents, prestigious awards, and global recognition for the SAT12 process since 1999, including the 2006 ASM Engineered Materials Achievement Award.

WE OUTPERFOR

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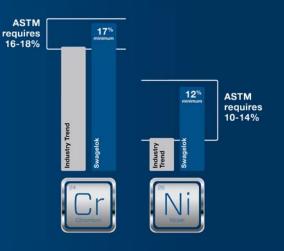


## MATERIAL AND MANUFACTURING

WHAT IS IN YOUR STAINLESS STEEL?

## YOU CAN BE CONFIDENT WE KNOW WHAT'S IN OURS.

Chromium and nickel are critical for corrosion resistance and ductility in stainless steel. Swagelok has maintained chromium content in its fittings at a minimum of 17% and nickel at a minimum of 12% for many years.



Others can try to copy our methods, but can't replicate our skilled operators, strict process control, and complete traceability.

Swagelok owns the manufacturing process from start to finish:



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We forge, machine, electropolish, weld, assemble, and test—all in our own facilities



We use optimized top-of-line tools and machining methods across 20 production facilities



Our robust Reliability Excellence program keeps equipment running at optimal efficiency



**Traceability at all phases** is an integral part of our overall quality system



Our **Limited Lifetime Warranty** is a promise as strong as our products



## **TESTED TO EXTREMES**

Swagelok performs **continuous, rigorous testing on thousands of samples** of production tube fittings to ensure only highly reliable components.

## **OUR PASSION FOR PERFECTION**

- We publish the most comprehensive book of tube fitting Product Test Reports (PTRs) in the industry.
- **Ongoing validation tests** ensure fittings consistently meet our most stringent standards.
- We conduct customized testing, Customer Test Reports (CTRs) for customers in our state-of-the-art labs, replicating specific conditions for any application.

## CONSTANTLY EVALUATING THE PERFORMANCE OF OUR PRODUCTS MEANS CUSTOMERS NEVER NEED TO RE-EVALUATE THEIR CHOICES.

### Swagelok Singapore

28, Mandai Estate Singapore 729917 (65) 63670688 info@singapore.swagelok.com singapore.swagelok.com

### Swagelok Philippines

Unit 2 Building 2 Oyster Industrial Complex NAIA Avenue corner Kabihasnan Road Paranaque City, 1700 Philippines (632) 826.9811 smvf@swagelok.com.ph

#### Swagelok Brunei

Lot 7421 Block B No. 21 Jln Jaya Negara Kpg. Pandan Bangunan Pg. Hj. Ali Bersaudara Kuala Belait KA 1189 Negara Brunei Darusalam (673) 333 6204 bvf@brunet.bn