ISO 8434-1 Bite Type Ferrule Fittings Introduction

The **ISO 8434-1** series, commonly referred to as **"24° Cone"** or **"Bite Type Ferrule"** fittings, is also known as **Cutting Ring Fittings** in English. Its core design relies on the cutting effect of the ferrule on the pipe to achieve sealing. This design makes it exceptionally effective for high-pressure, high-vibration applications in rigid pipe connections.

A **Bite Type Ferrule Fitting** consists of **three main components**:

Fitting Body
Nut
Ferrule (Cutting Ring)

Source：Parker Catalog 4300

Some may also consider the **pipe itself** as a fourth component.

PART 1: Fitting Body

This is the main part of the fitting, typically featuring **external (parallel) or internal threads** for connection to ports, valves, pumps, or other fittings. Inside the fitting body, there is a precise **24° cone**—a key feature of the **ISO 8434-1 standard**. When tightened, this **24° cone** forces the cutting ferrule to contract inward and **"bite"** into the pipe's outer wall, forming the primary **seal and grip**.

PART 2: Nut

A **hex nut with internal threads**. When tightened onto the fitting body's external threads, it pushes the ferrule forward, pressing it against the **24° cone surface**.

PART 3: Ferrule (Cutting Ring)

This is the **most critical component**, giving the fitting its name. It is a **hard metal ring** (e.g., **304/316L stainless steel, carbon steel**) with a **sharp leading edge**. The ferrule also has a **24° cone surface** that matches the fitting body's cone. When the nut is tightened, the ferrule is

forced into the **24° cone**, causing **radial contraction**. The ferrule's sharp edge **bites into** the pipe's outer surface, creating a **metal-to-metal seal** while providing strong **pull-out resistance**.

Dual Sealing Mechanism (Bite + Cone Contact)

The Bite Type Ferrule Fitting employs a dual-sealing structure:

- **Cutting action** (ferrule biting into the pipe).
- **Cone surface contact** (ferrule and fitting body).

Key Performance Features:

✔ **Extremely high pressure resistance**
✔ **Excellent vibration resistance**
✔ **Re-usability (with ferrule replacement)**

Applications:

High-pressure, high-vibration environments such as:

- **Chemical equipment**
- **Marine & railway hydraulic systems**

For more information, please consult www.srt-schneidringe.com
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