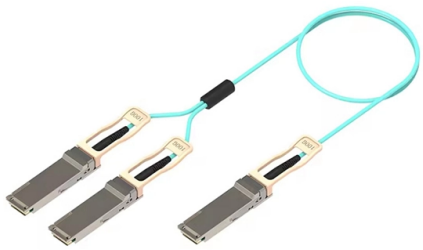
Fabrication process of pigtail



Overview

This chapter discusses the fabrication of pigtail assemblies. A primary reforming furnace tube increases in length by about 4 and 3/4 in. as the plant comes up to working temperature from cold.

Key Takeaways

Pigtail fabrication involves precise preparation, shaping, and termination, whether for piping systems or fiber optics, to ensure functionality, durability, and low-loss performance.

Piping Pigtails

In piping and instrumentation systems, a pigtail is a coiled or looped section of tubing designed to absorb vibration, manage thermal expansion, and protect pressure instruments from direct exposure to process media. The fabrication process typically includes: Material Selection: Tubing is chosen based on process requirements, often stainless steel or other corrosion-resistant alloys. Coiling: Tubing is bent into a loop or coil using rollers or mandrels to achieve the desired diameter and pitch.

End Preparation: Tube ends are cut and flared or threaded to connect to instruments. Inspection: The coil is checked for uniformity, stress points, and proper alignment. Installation Considerations: Proper orientation ensures condensate collection and vibration isolation, enhancing instrument longevity.

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Fiber Optic Pigtails

A fiber optic pigtail is a short optical fiber with a factory-terminated connector on one end and a bare fiber on the other, designed for splicing to incoming fiber cables. The fabrication process involves two main steps: Fiber Preparation: Dispense a specific length of fiber onto a work tray. Strip the protective buffer using controlled heating and automated blades.

Clean the fiber ultrasonically with a non-alcoholic, non-combustible fluid to remove contaminants. Fiber Termination: Cleave the fiber to a precise length. Insert the fiber into a ferrule, aligning it accurately.

Apply and cure epoxy to secure the fiber. Polish the connector end to achieve low-loss optical performance. Automation in fiber pigtail fabrication improves consistency, reduces human error, and increases throughput, with modern systems capable of processing over 100 fibers per hour.

Proper fabrication ensures minimal signal loss, reliable splicing, and long-term network performance.

Summary

Whether for instrumentation tubing or fiber optics, pigtail fabrication emphasizes precision, material integrity, and proper shaping. In piping, the focus is on mechanical flexibility and protection, while in fiber optics, the emphasis is on optical alignment, low-loss termination, and repeatable quality. Automated systems are increasingly used in fiber optics to enhance efficiency and consistency.

Article Content

FABRICATION OF PIGTAIL ASSEMBLIES

This chapter discusses the fabrication of pigtail assemblies. A primary reforming furnace tube increases in length by about 4 and 3/4 in. as the plant comes up to working temperature from cold.

What are Pigtails | Piping Glossary

The design of a pigtail typically features a helical or U-shaped coil made from materials such as stainless steel, carbon steel, or copper. Its geometry depends

Pigtail Failure Mechanisms and Inspection

Pigtails are used to transfer syn-gas from reformer tubes to manifolds and experience high stresses from temperature and pressure. Common failure

Estimating Remaining Creep Life of Outlet Pigtails in a Steam Reformer

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After the July 2021 shutdown, a procurement process to replace all pigtails was initiated for the next planned turnaround in October 2023. In parallel, a detailed analysis was performed on

WO2011065625A1

The present invention relates to an apparatus for manufacturing a pigtail for a coil spring, which is capable of very quickly and easily manufacturing the pigtail portions of all types of...

Process and metallurgical evaluation of outlet pigtails damage in the ...

In spite of improvements in reformer tube metallurgy and manufacture, outlet pigtail tubes are now seen as a critical and weak link component of primary steam reformer in ammonia plants

Extending the life of steam methane reforming pigtails

At the heart of the SMR process lies the reformer, which is a complex, energy-intensive and expensive piece of equipment. However, within the reformer unit, one of the most frequently

API TR 942-A

The American Petroleum Institute (API) Committee on Refinery Equipment, Subcommittee on Corrosion and Materials undertook a project to develop this technical report on materials,

Materials, Fabrication, and Repair Considerations for Hydrogen

The American Petroleum Institute (API) Committee on Refinery Equipment, Subcommittee on Corrosion and Materials undertook a project to develop this technical report on materials, fabrication, and repair

Enhancing Reformer Pigtail Reliability

Previously, pigtails had a nominal lifespan of 100,000 hours but improvements in materials have increased their reliability. Proper design, material selection, manufacturing processes, and quality

Automated Pigtail Fabrication Needed for Future Networks

Automating the fiber pigtail fabrication process improves the assembly of fiber optic components by eliminating the problems associated with human intervention.

Custom Pigtail Trachea Mandrels

Our vertically integrated approach ensures a seamless process, allowing us to deliver high-quality pigtail and trachea mandrels efficiently and effectively. For tailored solutions and expert

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Pigtail bolt

Pigtail Formation: After threading, the rod is processed to form the pigtail loop. This is usually done through a hot-working process where the end of the bolt is heated and then bent into a loop shape.

Exploring The Pigtail Connector And Its Applications

Discover the versatility of pigtail connectors and their wide-ranging applications in various industries. Learn how these connectors can enhance your technological solutions.

Process and metallurgical evaluation of outlet pigtails damage in the ...

Request PDF | Process and metallurgical evaluation of outlet pigtails damage in the primary steam reformer of an industrial ammonia plant | In spite of improvements in reformer tube

Complete Pigtail Bolt Guide: Essential Knowledge for

This guide will deeply explore all key aspects of pigtail bolts, including design characteristics, technical specifications, material selection, manufacturing

942-A e1 covers

Materials, Fabrication, and Repair Considerations for Hydrogen Reformer Furnace Outlet Pigtails and Manifolds

What Is a Pigtail Connector: Types, Uses & Guide

Learn what a pigtail connector is, its types, uses, and benefits. Explore industries, installation tips, and how to choose the right solution.

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