

Air-blown fiber optic cable head modification



Overview

Blowing Head Equipment & Accessories Sumitomo Electric Lightwave's cable blowing head is used to blow the compact fiber optic bundles through the tube cabl.

Key Takeaways

Modifying or optimizing the cable head (“bullet”) in air-blown fiber installations improves airflow, reduces friction, and prevents cable damage during installation. Purpose of the Cable Head

In air-blown fiber systems, a cable head or bullet is attached to the leading end of the fiber optic cable to streamline airflow and minimize friction inside the duct or microduct . The head ensures the cable “floats” on a cushion of compressed air, allowing longer installation distances and smoother navigation through bends and undulations . Properly designed heads reduce sidewall pressure and prevent buckling or damage to the cable jacket.

Key Considerations for Modification

- **Diameter Matching:** The cable head should match the cable diameter closely. Corning recommends using a bullet with the same diameter as the cable to maintain uniform airflow and avoid excessive drag .
- **Shape Optimization:** A tapered or streamlined head reduces turbulence and friction at bends. Modifications may include adjusting the nose cone angle or smoothing edges to improve airflow efficiency .

- **Material Selection:** Durable, low-friction materials (e.g., PTFE or high-density plastics) are preferred to prevent wear on the cable jacket and withstand repeated installations .
- **Pressure and Airflow Adjustment:** The head design may include ports or channels to optimize air distribution. Technicians can adjust air pressure in real time to maximize blowing distance without exceeding the cable's maximum permissible push force .
- **Bend Radius Compliance:** During installation, the cable head must respect the minimum bend radius, typically at least 40 times the microduct's external diameter, to prevent fiber stress or breakage .

Testing and Validation

Before full deployment, a crash test is recommended. This involves pushing the cable with the modified head into a sealed duct section to determine the maximum push force without damaging the cable jacket or causing buckling . Incremental adjustments to the head design can be validated through repeated tests to ensure safe and efficient installation.

Practical Tips

- Use a cable reel pay-off to maintain proper tension and prevent rubbing against drum flanges .
- Ensure the head is compatible with the duct system and cable type (metallic vs. non-metallic, central tube vs. multi-tube) as stiffness affects blowing performance .
- For long runs, consider mid-assist devices or cascading heads to extend installation distance without increasing friction . By carefully modifying the cable head, technicians can achieve longer blowing distances, reduced installation stress, and higher overall efficiency in air-blown fiber optic deployments, making it suitable for FTTH, data centers, and urban network expansions .

Article Content

Blowing Head Equipment & Accessories

Sumitomo Electric Lightwave's cable blowing head is used to blow the compact fiber optic bundles through the tube cable on a

Cable Blowing | General Machine Products Company

Designed to be safe, fast and effective, the Tornado Cable Blowing Machine installs fiber optic cable into pre-installed innerduct or

Air Blown Cable | Blolite and Microblo EMEA Fiber Cable

Leviton Air Blown Fiber Systems offer solutions for internal and external applications with their market leading BLOLITE™ and

Air-Assisted Installation Considerations

Placing optical fiber cables in duct systems using air-assisted installation techniques presents different installation requirements than

Installation of Optical Fiber Cable by Blowing/Jetting

Abstract This application note discusses fiber optic cable installation by blowing technique, the factors effecting blowing performance

Understanding Air Blown Fiber Cables | Fiber Xpress Mart

Another important benefit of air blown fiber optic cables is the minimized downtime for upgrades and modifications. Organizations

How Does Air Blown Fiber Work? Let's Break It Down!

air blown fiber (ABF) is an innovative method for installing fiber optic cables that utilizes compressed air to push small

Cable jetting

Cable jetting is the process of blowing a cable through a duct while simultaneously pushing the cable into the duct. Compressed air is

Installation Options: Air Blown Fiber

The Naval Air Systems Command in Arlington, Virginia, selected air blown fiber to enable consolidation of 39 separate organizations

eABF Fiber Optic Cable and MicroDuct Installation Manual

ay for valuable communications and fiber optic cabling . Enterprise Air Blown Fiber (eABF) cables are jetted into the MicroDucts us

Air Blown Fiber Optic Cabling Solutions | CDIS Corporation

Air-blown fiber also reduces future expansion costs and installation time by laying a foundation where additional fiber cables are

The Ultimate Guide to Air Blown Fiber Cable: Applications, Benefits ...

It can be easily routed through existing infrastructure, such as utility poles or underground pipelines, without the need for extensive

How To Blow Fiber Optic Cable

Blowing fiber optic cable, also known as air-blown fiber installation, is an efficient and effective method of installing

Whitepaper Guide to air blown cabling systems

The earliest known version of blown fiber cable (using compressed air to push fiber cabling through tubes) is credited to Willem

Air-Assisted Installation Considerations

General Considerations In typical (non air-assisted) cable pulling operations, the friction between the cable and duct wall, especially

Everything You Want to Know about Air Blown Fiber System

The air blown fiber system is to pre-lay special fiber-blown micro-tubes and accessories in the early stage of integrated

Fiber Optic Cable Blowing Equipment

The Air Compressor is designed specifically for use with our Micro Fiber Cable Blowing Machines. This reliable & efficient screw

The FOA Reference For Fiber Optics

Air-blown fiber should not be confused with "Blown Cable" where special cable is floated on air and pushed into a duct. See this FOA

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This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

