

Panoramic view of rebuilding Fukagawa plant(1929)

FUJIKURA HISTORY

Prompt recovery: After the Great Kanto Earthquake, Fujikura took quick steps to rebuild the business. Each factory resumed operations successively through maximizing the use of Sendagaya facilities that survived the disaster and fixing and rebuilding Fukagawa facilities nonstop. In addition, reconstruction demands in telegraph and telephone and the electrification of railroads started to grow.

Shaping the future with "Tsunagu" Technology.

FUJIKURA NEWS 2018 No.440 3

Power and Telecommunication

Release of SM Optical Fiber WBZ Cables with 400 cores and 1000 cores for NTT

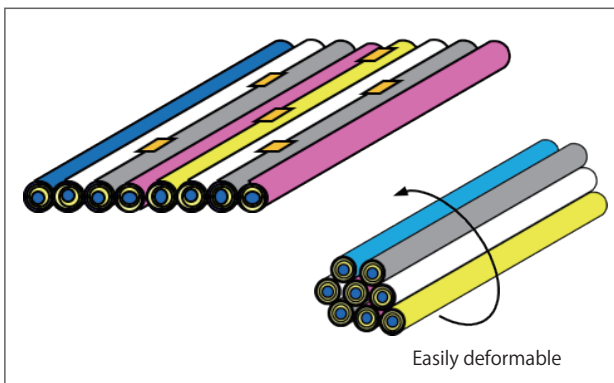
Fujikura has started supplying SM optical fiber WBZ cables with 400 cores and 1000 cores for Nippon Telegraph and Telephone East Corporation and Nippon Telegraph and Telephone West Corporation. These products consist of coated fibers bonded together in places, called Spider Web Ribbon (SWR). Conventional optical fibers generally have a structure where tape fibers are stacked in layers and put into a slot rod. The new cable has a slot-less structure packed with an SWR. An SWR is changeable in form and offers more flexibility in bending direction. Consequently, this can avoid an increase in optical loss and deformation of the fibers even if these fibers are tightly aligned in a cable, compared to existing tape fibers.

SWRs can surely be spliced at one time using a common fusion splicer and maintain the same level of working time and workability as those of existing fiber tapes.

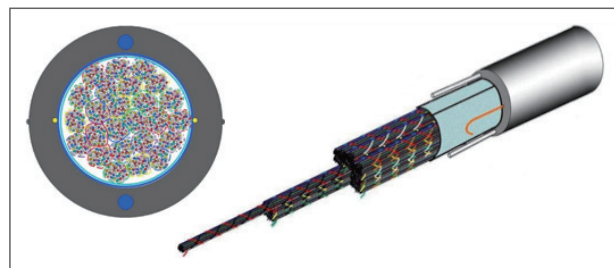
Until now, thinner and denser cables have been developed in consideration of building networks more efficiently including the construction work of optical fiber cables and using existing facilities effectively. Finally, very thin, densely-aligned optical fiber cables have been developed by using an SWR in a cable.

The cables containing SWRs were first used as aerial cables and this time as underground cables by NTT (Nippon Telegraph and Telephone Co.). We will develop similar types of cables from now on to contribute to the progress of society of highly advanced information technology.

Spider Web Ribbon



Example of cable structure



Power
and
Telecommu-
nication

Highly-Foamed-Polyethylene-Insulated 43D Leaky Coaxial Cable for Train Radio System

Fujikura Dia Cable Ltd. started to supply highly-foamed-polyethylene-insulated 43D leaky coaxial cables according to the introduction of digital train radio systems for underground railways. Conventional cables contain a copper inner conductor pipe, on which polyethylene insulation tape is wound spirally and covered with a polyethylene pipe. On the other hand, the new cable uses a corrugated copper inner conductor pipe and highly-foamed polyethylene that serves as an insulator. Consequently, the cable has an about 20% lighter weight and a 30% reduced bending rigidity and improved workability at the time of cable installation.

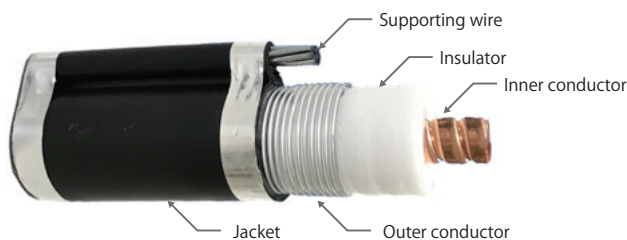
In addition, the connector of this cable has been reduced in size and weight compared to conventional connectors. A substantial reduction in the number of the parts decreased the connector assembly time and also the weight by about 40%, which led to improved workability in mounting connectors.

Digital train radio system that uses 150 MHz frequency band draws attention in ensuring the safety of train operations in consideration with railways' tightly woven schedules. To drive the digitalization of the system, railway companies are working on swift conversion from the analog inductive radio system to the digital leaky coaxial system.

Structure and standard property

Items	Structure, characteristic value			
	Model: EM-L-LCX-43D-F			
	155	156	157	158
Inner conductor	Corrugated copper pipe ϕ 17.3 mm			
Insulation	Highly foamed polyethylene ϕ 43 mm			
Outer conductor	Corrugated laminated aluminum tape(with slot)			
Supporting wire	Zinc-plated stranded wire, 7 wires/2.6 mm			
Insulation	Flame-retardant non-halogen polyolefin Main body 51 mm Supporting wire 13 mm Cable height 67 mm			
Estimated weight	1.5kg/m			
Characteristic impedance	50 Ω			
Voltage standing wave ratio	1.5 or less			
Coupling loss at 150MHz	55dB	60dB	70dB	80dB
Transmission loss at 150MHz	13dB/km	12dB/km	11dB/km	11dB/km
DC resistance	Inner conductor	1.3 Ω /km or less		
	Outer conductor	1.5 Ω /km or less		

Cable structure



Connector structure



Electronics

High-performance Horizontal Port Pressure Sensor Contributing to Miniaturization of Electronics

Fujikura has developed new models of analog semiconductor pressure sensors (temperature-compensated), the AH3 series. Compared to existing sensor models with vertically aligned pressure introducing ports, the new products have a unique outlook with vertically incorporated introducing ports. This structure helps customers to package smaller electronics or to mount parts to a substrate at a thinner seated height because the pressure-introducing connecting tube can be horizontally led out of the device. In addition, this device is of the lead insertion type, which enables firm mounting to a substrate, and uses technology for stabilized operation to minimize fluctuations of sensor output against various external forces. Furthermore, this pressure sensor achieved high accuracy, low power consumption by combining pressure chip and digital signal processing technologies and utilizing our own MEMS, packaging, and IC assembling technologies. These products will

find wide application in medical products, industrial machines and consumer goods since the products are designed to reduce noise in output and have a pressure switch function that has a threshold set at an input voltage.

● Conventional model (AG3 series)



● New model (AH3 series)



✉ Sensor Business Unit

sensor@jp.fujikura.com

Exhibition

18th Fiber Optics Expo (FOE 2018)

Dates

Apr. 4 (Wed) - 6 (Fri), 2018
10:00~18:00 (last day until 17:00)

Venue

Fujikura booth W11-1, Hall 2, West, Tokyo Big Sight

We will be exhibiting at 18th Fiber Optics Expo (FOE 2018). Again this year, we jointly work with Fujikura Automotive Asia Ltd.

Our main products to be on display include products related to datacenters, wiring solutions, industrial optical fibers and optical fiber fusion splicers. Each display area is equipped with a liquid crystal display to show video and animation and help visitors' understanding.

In our demo area, fusion splicing is demonstrated using our new models, which went on sale last year one after another, including a new fusion splicer, multi-core optical fiber stripper and optical fiber cutter.

We look forward to meeting you at our booth.



✉ Precision Equipment Division

optfsm@jp.fujikura.com

🌐 Website dedicated for fusion splicer

<https://www.fusionsplicer.fujikura.com/jp>

FUJIKURA NEWS Apr.2017 - Mar.2018

Power and Telecommunication	Apr.	First Delivery of Single-mode Optical/Electrical High-voltage Flat Cabtire Cable Optical Fiber Coupler for C+L-band and L-band
	May.	Sales Start of Optical Fiber Tape Core Stripper Development of Live Wire Insulation and Shield Resistance Measuring Device Development of USB3 Vision AOC
	Jun.	Fujikura Exhibits at FTTH APAC Conference 2017 (India) Introduction to Mini Branch, Cable with Prefabricated Branches
	Aug.	Fujikura Employee Receives Award from IEC-APC CCS Type 2 Fast Charger Connector for Electric Vehicles in Europe
	Oct.	Release of Improved Optical Fiber Splicer Small-diameter Colored PANDA Fiber Bendable to 5 mm Radius Umbilical Cable
	Nov.	Released High Fiber Count Optical Fiber Cable 3456 Fiber Wrapping Tube Cable™
	Jan.	Multi-hop Wireless Energy Harvesting Sensor System New Model of 8 kW High-power Fiber Laser Goes on Sale
	Feb.	Launch of Sales of New-type Single-core Optical Fiber Cleaver Fujikura Receives Testimonial from BICSI Japan
	Mar.	Release of SM Optical Fiber WBZ Cables with 400 cores and 1000 cores for NTT Highly-Foamed-Polyethylene-Insulated 43D Leaky Coaxial Cable for Train Radio System
	Electronics	May.
Jun.		Fujikura Develops USB 3.1 Type-C Connector and Receives USB Certification 4K Image Transmission Coaxial Connector BNC 75 Series Ultra-thin 0.3 mm Heat Pipe
Jul.		Lineup of Industry's Smallest-class FPC Connector FF57 series
Aug.		Development of Stretchable Membrane Excellent in Flexibility
Oct.		Cable Assembly for USB3.1 Type-C 10 Gbps Lineup of the FF36 Series, 120-conductor Connector to Connect to FPC
Nov.		Highly Heat-dissipative FPC Small Lightweight Waterproof Round Connector CM09Y Series
Jan.		Cold Plate for Cooling Supercomputer
Mar.		High-performance Horizontal Port Pressure Sensor Contributing to Miniaturization of Electronics
Automotive Products	May.	Addition of CE-certified Fast Charger Connector for Electric Vehicles to Our Product Line
	Feb.	Fujikura to Establish Joint Venture of High-voltage Wire Harness Design and Development with Hengtong Group
R & D	Jul.	Application of Sensor System:IoT Meeting Room Management Development of AOC for Camera Link HS
	Aug.	Fujikura Receives Achievement Award (Progress Award) from The Laser Society of Japan
	Nov.	Development of Multicore Fiber Extending Technology
	Jan.	Optical Fiber for Low-loss Coupling to Silicon Photonics Device
	Feb.	60 GHz Millimeter-wave RF Module with High-gain Phased Array GTC Japan 2017 Fujikura Presents Current Status of Research in AI (Deep Learning)
Information Exhibition	Apr.	9th DATA CENTER EXPO (DATA CENTER Spring)
	May.	JECA FAIR 2017(65th Electrical Construction Equipment and Materials Fair)
	Jul.	Fujikura to Exhibit at INNOPROM 2017 Cable Tech Show 2017 Distribution of Fujikura Gakuen Products to Our Shareholders
	Aug.	Open-type Healthcare Data for Multi-devices Construction of Integrated Platform Health and Productivity Management Version CEATEC JAPAN 2017
	Sep.	Introduction to Exhibits at CEATEC JAPAN 2017
	Nov.	Fujikura's Study Selected as IEICE Milestone Bio Garden "Fujikura-Kiba Millennium Woods" Registered on Edo Greenery List for First Time
	Dec.	Introduction to Medical and Healthcare Products
	Jan.	President's 2018 New Year's Message The 55th National Skills Competition
	Feb.	Fujikura Volunteers in Disaster Relief in Fukushima Again This year
	Mar.	18th Fiber Optics Expo (FOE 2018)