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Gore® MIL-STD-1760 Assemblies for Defense Aircraft

The only sealed hybrid solution proven over time to solve common challenges with pylon installation and critical operations at a cost you can afford. Our certified assemblies with proven high flex life are easy to install and deliver

consistent disconnect loads for mission success. They're flight-proven on many airborne platforms, making them an ideal replacement for standard umbilical assemblies.

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Easy-to-install assemblies guarantee 10

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Data Sheet: GORE® MIL-STD-1760 Assemblies for Defense Aircraft [Copy Link](#)

Data Sheets, 2.63 MB

Standard umbilicals using screw-on lanyard, quick-release connectors often have to be replaced because they're stiff, hard to handle and don't survive pylon installation or operation. Replacing them is expensive, time-consuming and can delay critical missions. Heeding the call from military customers, W. L. Gore & Associates offers the only affordable, sealed hybrid solution with a reliable connector system proven over time to solve these common pitfalls.

ALL RESOURCES FOR GORE® MIL-STD-1760 ASSEMBLIES FOR DEFENSE AIRCRAFT

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PROVEN SAFE OPERATIONS WITH HIGH FLEX LIFE

Successful missions depend on aircraft platforms that use reliable, long-lasting MIL-STD-1760 umbilicals. But, our customers have told us that they often have to replace standard umbilicals using screw-on lanyard, quick-release connectors. Why? Because they're stiff, hard to handle and don't withstand pylon installation or operation. Maintenance is time-consuming and costly because it involves removing many aircraft components to replace the damaged umbilicals with new ones.

Gore offers the only sealed hybrid solution proven over time to solve all these problems - an affordable, easy-to-install umbilical with a connector system that doesn't fail when installed or during operation.

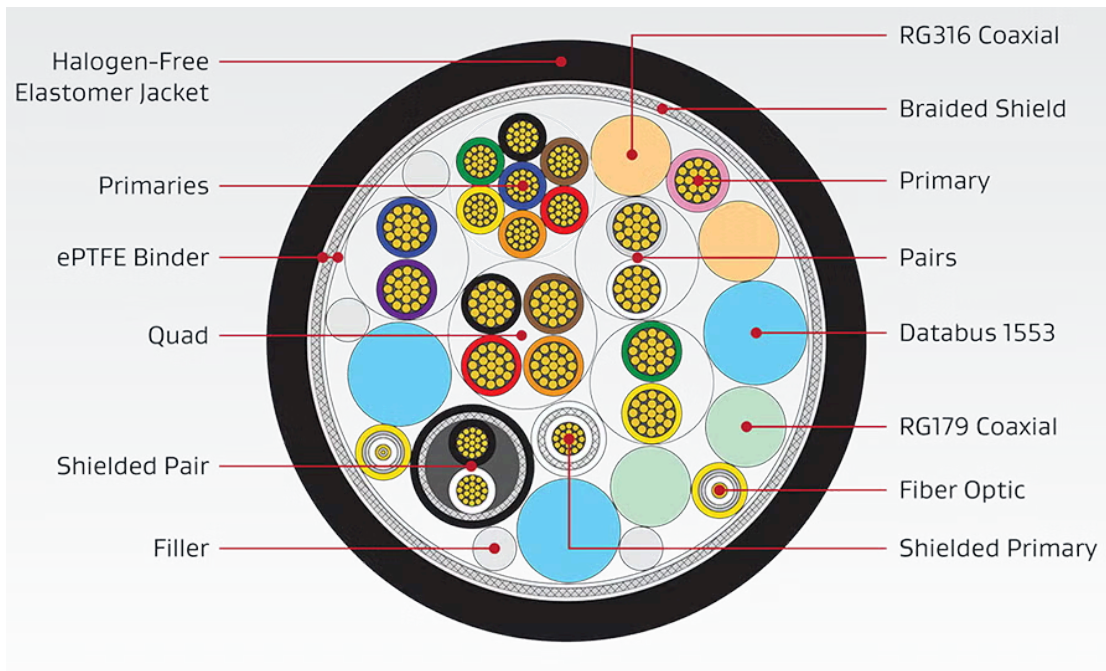
GORE MIL-STD-1760 Assemblies with the L3Harris, Field Replacement Connector System™ (FRCS™) are the only solution proven to guarantee safe operations with a low bend force over wide temperatures. They're also proven to protect against electromagnetic interference (EMI) with at least 85% optical coverage. Not only that, our MIL-STD-1760 shielding assemblies have a life beyond 100,000 flexes in harsh aerospace conditions without ever failing to do their job.

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EASY PYLON INSTALLATION

Robust and highly flexible, our assemblies can be easily installed in limited spaces of aircraft pylons. They're available in a variety of wire types with a smaller cross-sectional diameter compared to standard umbilicals. They can be easily attached and removed from ASI (Aircraft Store Interface) and MSI (Mission Store Interface) while operating in an NBC (Nuclear Biological Chemical) environment. Our assemblies reduce maintenance, downtime and product lifecycle costs because they don't have to be replaced after each use.

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Robust, highly flexible layout of GORE MIL-STD-1760 Assemblies, Class 1 (FO) Version.

GUARANTEED 100 STORE RELEASES

We worked with L3Harris to compare the performance of our MIL-STD-1760 cable assembly with their FRCS™ against standard umbilicals that use screw-on MIL-STD-38999/31 lanyard connectors. We configured a simulator on stores with racks adjusted to represent various pylon stations accurately, including retention methods. Then, we captured the data to validate umbilical connector loads and store velocity during ejected pit releases.

Our results showed that 1 out of 10 new standard umbilicals separated within the specification limit after 100 drops. Also, 50% of the umbilicals were unserviceable after only 3 drops, and 25% failed to disconnect at all and ended up in the pit. But, our assemblies with the MIL-STD-1760 connector pinout from L3Harris delivered consistent disconnect loads and can guarantee 100 fully high-speed instrumental drops.

Program Heritage

We thoroughly test and qualify our assemblies according to the MIL-STD-1760 specification, MIL-STD-810 and other standards. They're certified for more than 100 ejected releases and 400 manual disconnects.

GORE MIL-STD-1760 Assemblies were introduced to the North Atlantic Treaty Organization (NATO) in the 1990s. Since then, they have delivered 100% successful store release and support for our marketing efforts. By accepting cookies, you are allowing them to be stored on your device.

- A-10 Warthog
- B-1B, B-2
- F-15E, F-16, F-35
- Gripen, GR9
- S-3B Viking
- Super Lynx, Wildcat

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- Tornado GR4
- Typhoon

Features & Benefits

Compared to standard umbilicals, GORE MIL-STD-1760 Assemblies are manufactured with distinct features that make them more robust in challenging aircraft pylon conditions, including:

- sealed hybrid assembly in a highly flexible design
- chemically inert, temperature-resistant, EMI shielding materials
- a variety of wire types with smaller cross-sectional diameters
- Class I & II standard versions or customized options

Our aircraft umbilical cable assembly offers system architects and engineers a host of benefits that improve their overall performance in the harshest flight conditions, like:

- guaranteed 100 ejected releases
- superior EMI protection with at least 85% optical coverage
- excellent electrical and mechanical performance in extreme conditions
- easy installation and extended operation from proven high flex life >100,000
- fully tested, qualified and certified for 500 manual disconnects
- less maintenance, downtime and replacement costs
- a variety of connectors (standard shell size 25, 17, 15 stores with relevant inserts)
- flight-proven on many airborne platforms with 100% successful store releases

Technical Specs

These values demonstrate the mechanical and environmental performance of GORE MIL-STD-1760 Assemblies for defense aircraft.

Mechanical / Environmental Property	GSC-01-86039-00 Class I (FO)	GSC-01-86038-00 Class I	GSC-01-85806-00 Class II
Outer Jacket Material	Halogen-Free Elastomer	Halogen-Free Elastomer	Halogen-Free Elastomer
Outer Jacket Color ¹	Black	Black	Black
Conductor Plating ²	Silver-Plated Copper	Silver-Plated Copper	Silver-Plated Copper
Conductor Color-Coding	Individually Coded	Individually Coded	Individually Coded
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Dielectric Material	PTFE/Expanded PTFE	PTFE/Expanded PTFE	PTFE/Expanded PTFE
Braid Shielding ²	Silver-Plated Copper	Silver-Plated Copper	Silver-Plated Copper
Braid Optical Coverage ³ %	> 85	> 85	> 85

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Mechanical / Environmental Property	GSC-01-86039-00 Class I (FO)	GSC-01-86038-00 Class I	GSC-01-85806-00 Class II
Outer Diameter mm (in)	18.7 (0.74)	18.7 (0.74)	18.3 (0.72)
Fiber Optic Core Type ²	OM3 (Multi-Mode, Graded Index)	—	—
Fiber Optic Core/Cladding/Coating	50/125/245	—	—
Fiber Optic Buffering System	Expanded PTFE 900 micron	—	—
Minimum Bend Radius mm (in)			
Static	46.8 (1.8)	46.8 (1.8)	45.8 (1.8)
Dynamic	93.5 (3.7)	93.5 (3.7)	91.5 (3.6)
Flex Life Cycles	> 100,000	> 100,000	> 100,000
Temperature Range °C	-60 to +150	-60 to +150	-60 to +150

¹ Other colors available upon request.

² Other options available upon request.

³ Other optical coverages available upon request.

How to Buy

Flight-proven on many airborne platforms with 100% successful store releases since the 1990s, we offer Class I & II standard MIL-STD-1760 breakout cable assembly versions in a variety of wire types. To meet your specific aircraft integration requirements, we also offer bespoke and custom assembly options with MIL-STD backshells, custom backshells and molding designs.

For more information or to discuss your specific application needs and place an order, contact a Gore representative today.

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Resources

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[White Paper: Improving Cable Performance in Harsh Environments](#)

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EVENT

Visit Gore at AAAA to enhance mission success, survivability & safety [Copy Link](#)*May 14, 2025 - May 16, 2025*

Visit us at Booth 900 to experience our live demonstrations and discover how GORE® Cables and Materials enhance Army airframe and aviation systems. Reserve time now with a Gore specialist to discuss how we can help deliver solutions that support mission success, survivability and safety.

PRESS RELEASE

W. L. Gore & Associates Recognized by Northrop Grumman with Supplier Excellence Award [Copy Link](#)*Posted April 14, 2025*

NEWARK, Del./USA — Northrop Grumman Corporation (NYSE:NOC) has recognized W. L. Gore & Associates as one of its top supplier partners during the company's Supplier Excellence Awards.

EVENT

Gore awaits you at FEINDEF 25 [Copy Link](#)*May 12, 2025 - May 14, 2025*

Gore will be at the International Defense and Security Fair (FEINDEF) in May to show you first-hand the future of high-speed data cables and how you could benefit from our field-proven technologies in the most demanding defense environments.

PRESS RELEASE

W. L. Gore & Associates Wins Prestigious Frost & Sullivan Award [Copy Link](#)*Posted December 3, 2024*

W. L. Gore & Associates (Gore) announced today the company won the 2024 Frost & Sullivan Enabling Technology Leadership Award for their portfolio of aerospace and defense power enablers. The award recognizes the company that applies its technology in new ways to improve existing products and services and elevate the customer experience. Gore was honored for its achievements in the North American electrical wiring industry.

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