Glenair MIL-PRF-24758A Conduit Component Selection Guide

This selection guide is designed to assist you with the selection of components and planning for installation of MIL-PRF-24758A(SH) conduit and fittings. Per current U.S. Navy policy, only MIL-PRF-24758A qualified systems are now approved for topside use. To cross over part numbers from other manufacturers or the original MIL-C-24758 specification, please contact the factory at (818) 247-6000.

Each point-to-point conduit assembly will require a length of bulk conduit, 2 conduit fittings (M24758-2, -3, or -4) and 2 adapters (M24758-9 through M24758-25). You have three basic options for putting all these parts together:

(1) Specify user installable components (bulk lengths of conduit, fittings and adapters designed for field assembly),

(2) Select made-to-order conduit assemblies built at the factory according to your exact size, length and routing requirements, or

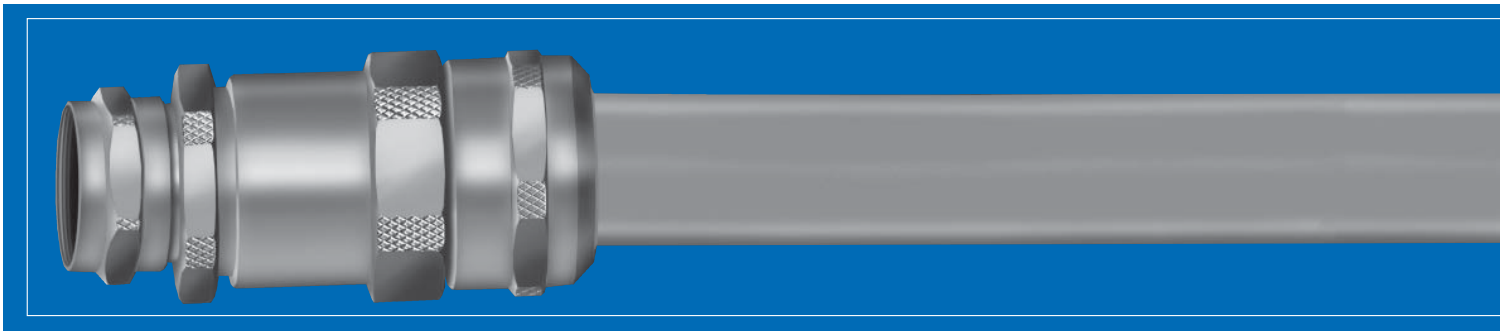
(3) Use a combination approach in which one end of the conduit is terminated at the factory with lightweight solder fittings, while the other end is terminated in the field with user installable fittings and adapters.

Step 1: Select Correct Conduit Size

Conduit size is identified by its inside diameter (ID). The ID is referenced with a size code. The range of available sizes includes .25 inch (M24758-A) through 3.0 inch (M24758-L).

Conduit is normally filled at up to 90% of it's inside diameter. Verify the cable diameter used before selecting the conduit diameter. Low smoke shipboard cable (MIL-C-24643) may have a thicker jacket material than regular (MIL-C-915 and MIL-C-24640) cables and require larger diameter conduit and fittings, so be sure to take this into account.

The shipboard interface, i.e. the diameter of the stuffing tube on the ship the conduit assembly will attach to, is the other key data point for conduit size selection. In a well-designed system, the diameter of the conduit, fitting, adapter and stuffing tube all need to be the same. For example, a size code "D" (1 inch) conduit would be selected when the stuffing tube on the ship is also 1 inch in diameter.



Stainless steel M24758 fittings for field termination and assembly are supplied in straight, 45° and 90° designs. Glenair MIL-PRF-24758A qualified fittings feature unique metal-to-metal shield termination, robust environmental sealing, and a rotatable coupling for easy attachment of M24758 series adapters. Both the environmental sealing and EMI shielding functions incorporate design ideas adapted from military standard backshells, including environmental o-rings, cable-sealing glands and cone-and-ring style shield terminations.

CAGE Codes 06324 Printed in U.S.A.

NOTE 1: The color of Mil-PRF-24758A conduit is standard US Navy haze gray in accordance with Fed Std 595B #26270. If other colors are desired, contact the factory at (818) 247-6000.

NOTE 2: Conduit internal dimensions 3/8", 5/8", and 3" have been omitted from the MIL-PRF-24758A specification. Products using these dimensions, built to the same standards, are still available from Glenair.

NOTE 3: The operating temperature variant of the M24758A jacket material used on the conduit is -70°C to + 200°C. For higher temperature materials, contact the factory.

Step 2: Select Conduit Fittings

The function of the M24758 conduit fitting is to terminate M24758 flexible shielding conduit and to provide a standard thread for attaching M24758-9 through M24758-24 adapters. Fittings are supplied in straight, 45° and 90° configurations to facilitate the routing of the conduit into and out of kick-pipes and other interfaces to the ship. Selection is a simple matter of matching the size code in the part number with the size code of the selected conduit. Your selection of a straight, 45° or 90° angled part will depend on the routing requirements of your system.

NOTE 1: All conduit fittings and adapters feature a combination of hex wrench flats and knurls to minimize the need for special installation tools.

NOTE 2: Glenair recommends the use of torque wrenches to ensure conduit fittings and adapters are mated with the optimal amount of torque. Torque wrenches required for installation are available from Glenair. Please see page 55 for tool order information.

All conduit fittings and adapters are matte finished, nickel plated, 316L stainless steel. If other materials are desired, contact the factory.

Step 3: Select Appropriate Adapters

As noted, the conduit fittings selected in step 2 provide a standard thread for the attachment of various adapters. The adapters are used to mate the conduit assembly to the many interfaces found on the ship, such as stuffing tubes or kick-pipes with tapered NPT threads. Adapters are also available to facilitate mating of the conduit assembly to various military standard cylindrical connectors. The following are a

Flexible bulk conduit is supplied with a brass metal core, phosphorus bronze metal overbraiding and Glenair "BlueJacket" outer jacketing material which has been optimized for shipboad and other harsh application environments.

Factory terminated conduit fittings provide the ultimate flexibility in system specification. The lightweight solder fittings mate to all M24758 adapters and offer a maintenance-free alternative to user installed fittings.

selection of the standard adapters covered by MIL-PRF-24758A and supplied by Glenair:

1. Stuffing tube adapter (AKA swage tube or kick pipe adapter): These adapters are identified by the stuffing tube size and conduit diameter. See the M24758-15 drawing.

2. Panel adapter (AKA junction box adapter or interconnecting box adapter): These adapters are identified by the conduit size. The required mounting hole size is shown on M24758-19 and 25 adapters.

3. NPT adapter (AKA tapered pipe thread adapter): These adapters are identified by the NPT thread size and conduit size. See the M24758-17 drawing.

4. NPSM adapter (AKA National Pipe Thread Standard adapter): These adapters are identified by the NPSM thread and conduit size. See the M24758-18 drawing.

5. Splice (AKA conduit union adapter): These adapters are used, in conjunction with M24758-2 fittings, to join two sections of conduit together. See the M24758-23 drawing.

6. MS3100 Series MIL-C-5015 Connector adapter: These adapters are used with the obsolete MS3100 series solder style connectors. See the M24758-9 drawing.

NOTE 1: Do not use the M24758-9 series adapters for MS3400 and MS3450 crimp contact connectors. See item 10 below.

NOTE 2: Glenair recommends replacing MS3100 series connectors (and M24758-19 adapters) with the MS3400 series connectors and M24758-13 series adapters.

7. Triaxial connector adapter: These adapters connect the conduit fitting to triaxial connectors. Contact the factory for the order information.

8. Coaxial connector adapter: These adapters connect the conduit fitting to coaxial RF connectors. See the M24758-11 drawing.

9. MIL-C-26482 connector adapter: These adapters connect the conduit fitting to the obsolete MIL-C-26482, series 1 connectors. See the M24758-12 drawing.

NOTE 1: Glenair recommends replacing MS312X series connectors (and M24758-12 adapters) with the MIL-C-26482 series 2, MS347X connectors (and M24758-13 series adapters).

10. MIL-C-5015, MIL-C-26482, MIL-C-81703 and MIL-C-83723 series crimp contact connector adapter: These adapters connect the conduit fitting to MS3400, MS3450 and other MIL-C-5015 crimp style connectors, and MS347X, MIL-C-26482 series connectors. See the M24758-13 drawing.

11. MIL-C-28840 connector adapter: These adapters connect the conduit fitting to MIL-C-28840 series connectors. See the M24758-14 drawing.

12. MIL-D-38999 series connector adapters: These adapters connect the conduit fitting to MS 27XXX, series 1 and 2, and D38999 series III and IV connectors. See the M24758-20 drawing.

13. MIL-C-22992 series connector adapters: These adapters connect the conduit fitting to M1734X connectors. See the M24758-21 drawing. Contact factory for MIL-C-22992 Class L connector adapters.

14. Glenair Series 22 adapter: These adapters connect the conduit fitting to Glenair Series 22 connectors. See the M24758-22 drawing.

15. Multiple shield termination adapters: These adapters provide a shield termination mechanism for individual wire shields. See the M24758-24 drawing.

BLUEJACKET

A Seaman in the United States Navy, and the brand name of the Glenair MIL-24758A(SH) Weatherproof EMI Shielded Flexible Conduit System. Although haze gray in color, the product is named *"BlueJacket"* in honor of the dedicated Navy personnel who work with these products under arduous topside conditions.