



Hunter Cable Assembly Ltd

a specialist manufacturer and distributor of

cable assemblies, wiring looms, cable harnesses, box builds and connectors

Custom Cable Assembly

Cable assembly is the process by which a string of cables all transmitting information via electrical currents, are clamped together.

A recent report looking at the Global Cable Assembly Market has projected a five-year compound annual growth rate of 8.0 percent and the industry value will grow to \$130,693 million by 2014.

Five industry segments are growing faster than the industry average for demand of cable assembly and these include: Computers, Telecommunications, Medical, Consumer and Business/Office.

Electrical cabling requirements in these industries can be extremely complex. This is essentially where speciality custom cable assembly is called for.

It is cable assembly that is bespoke, working to a unique design where a unique custom-made cable assembly is used, as well as other custom builds, such as non-standard connectors.

In this White Paper we will look at certain types of custom cable assembly and their specific uses, as well as outline what to look for when choosing your custom cable assembly manufacturer.

Types of Custom Cable Assembly

Flat Ribbon Cable Assembly

Flat ribbon cable assembly is the application of producing flat ribbon cable for a specific device. Ribbon cables typically have many wires running next to each other in a flat cable and are usually used for internal peripherals in computer hard drives, and CD drives.

Building ribbon cables is a similar process to simple cable assembly, where the wires are cut to the required length and placed on a workbench where they are manually tied together to form the cable.

When inserting ribbon cable into applications however, many designers tend to mark one edge of the cable with a red stripe. This is to help them distinguish which end is the polarised end, and which is the unpolarised end, as if inserted into the application using the wrong end it could potentially damage the hardware. For more complex designs many designers like to use custom ribbon cable assemblies to meet their exact requirements.



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Multicore Data Cable Assembly

Multi core cable is a compact cable which can consist of up to 56 individual cables all protected by one outer jacket. This outer jacket protects the wires from becoming damaged by outside sources, from becoming tangled, and prevents the likelihood of an electric fire from occurring. As it can hold so many individual cables in one 'core' custom multicore cable assembly is often necessary and recommended for a number of electrical manufacturing processes.

Audio Cable Assembly

Audio cable is used to shield the separate wires from external interference, and to make it easier to connect them to relevant devices. Having wires arranged in a cable makes them more flexible and easier to assemble, it also means the electrical wires do not become tangled and possibly damaged, as they are not loose. Again, due to the multitude of cable assembly options available with audio cable it is possible to create a number of different cable assemblies. As a result, complex design and builds require the use of custom cable assembly.

Triaxial Cable Assembly

Triaxial cable is essentially the same as coaxial cable; however it has a third layer of outer shielding. This third layer is earthed protecting the inner shield from outside sources. Triaxial cable offers a secure connection that cannot be disturbed by electromagnetic interference.

Triaxial cable assembly is similar to other types of cable assembly. Triaxial cable in electrical manufacturing can sometimes reach several kilometres in length and can be fairly complex, but by combining them in a cable assembly, they take up less room. Triaxial cable assembly can also mean that the cabling is better protected against moisture and is generally a lot easier to install. Manufacturers benefit from specific, custom-made designs for their triaxial cable assembly.

What to Look for in a Custom Cable Supplier

Custom cable assembly can be complex to implement – and expensive if you get them wrong, so it is vitally important that you work with a custom cable supplier that you trust to deliver a great service on time, on design and on budget.

One thing to insist upon is that your custom cable assembler is NQA certified. The NQA assesses companies and organisations in a number of industry services and these include: Aerospace, Automotive, Communications, Construction, Engineering, Manufacturing, and many more.



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Many of these sectors require cable assembly services to build the applications they use, so cable assembly in a number of these fields can be NQA certified.

An NQA certificate will be awarded to a company that produces the requirements of quality management systems under ISO 9001:2008. The certificate proves to customers that you minimise the risk of damaging existing equipment, you reduce waste through your service and can guarantee good reliable connections. Always keep a look out for this when it comes to choosing a reliable custom cable assembler.

It is common today for many companies to outsource their custom cable assembly to Asia, where costs are cheaper. However, while outsourcing certain areas of electrical manufacturing to cheaper markets overseas can make financial sense, when it comes to outsourcing complex custom cable assemblies, overseas operations are not always the best option.

Due to the complex nature of some custom cable assemblies the ability to speak English and communicate effectively with English speaking project managers can be indispensable. Another particular consideration to bear in mind are the costs involved in shipping custom cable assemblies around the world after they have been built. Something to ask yourself is can you wait for the assembly to arrive if there are delays in shipping or if adjustments need to be made to the cable after it has shipped?

Custom cable assembly is a growing industry, with demand likely to continue during the next decade. Therefore finding a reliable company to trust with complex designs should be at the top of all manufacturing procurement departments lists.

In this White Paper we have outlined the relevant types of custom cable assembly, explained where industry growth is likely to come from and also outlined things to look out for when choosing a reliable manufacturer to deliver your cable assembly.

Hunter Cable Assembly is NQA certified, and has been assessed and registered against the provisions of BS EN ISO 9001: 200.

Their certificate relates to their ability to manufacture cable assemblies, sub assemblies, instruments and box builds, to customer specification.

Hunter Cable Assembly use connectors manufactured by leading players in the market, including 3M Interconnect, Amphenol, AMP/TYCO, JST, HARTING, ITT Canon, SOURIOU, MOLEX.

Hunter Cable Assembly, based in Berkshire, UK, has been manufacturing cable assemblies for over 30 years and with production facilities in the UK and is able to provide a complete service from design, drawing, prototyping through to full production volume. For more information visit: www.hcal.co.uk