

Autosport ASDD Connectors Complete Guide for Racing

Every racing team eventually learns the same lesson: cars rarely stop because of a spectacular failure. They stop because of a small one. A pin backs out of a housing, moisture creeps into a sensor plug, or a vibrating loom slowly fatigues a contact until a signal drops out at the worst possible moment. In a modern race car, where the ECU, data logger, dash, power distribution and dozens of sensors all depend on clean electrical signals, the connector is not an accessory. It is a structural part of the electrical system.

This is the reason Autosport ASDD connectors have become a familiar sight in professional wiring looms. Developed within the Deutsch Autosport family, now part of TE Connectivity, the ASDD range was designed for people who build harnesses for demanding usable cars, circuit racers, hillclimb specials, drag cars, rallycross machines and high end track builds. In this guide we look at what the series is, how it is organised, where it fits in a wiring architecture and how to choose the right parts for your project. If you want to browse the range while you read, the full [Autosport ASDD](#) connector collection at Arctic Performance Parts lists the plugs, sockets and flange parts discussed below.



What Are Autosport ASDD Connectors?

The Deutsch Autosport ASDD series is a family of compact, environmentally sealed, multiway circular style connectors built around crimped contacts. The idea is simple: give harness builders a connector that is light, rugged and sealed against the water, dust, oil and cleaning fluids that every race car meets, while still offering enough contact positions to take a whole subsystem through one interface.

The key words in that description are worth unpacking:

- CompactPackaging space in a race car is always scarce. ASDD shells are designed to carry many circuits in a small footprint.
- SealedContacts are protected by wire seals and interfacial seals, so the mated connector resists moisture and contamination.
- Crimped contactsPins and sockets are crimped to the wire rather than soldered, producing a gastight, vibrationtolerant joint when done correctly.
- KeyedEach shell carries a keying arrangement so that different connectors in the same loom cannot be crossmated by mistake.

The result is a Deutsch ASDD electrical connector that behaves like a quick release bulkhead between two parts of the car, such as the engine loom and the chassis loom, while behaving like a permanent, reliable joint once locked.

Where the ASDD Series Sits in the Deutsch Autosport Range

The Deutsch Autosport connector system is a broad family. Different series serve different jobs, some are optimised for very small sensor circuits, some for high density layouts and some for power. ASDD is typically chosen when a team wants a motorsport electrical connector with a good balance of contact count, weight and sealing, and when they want a proven brand that other professionals and scrutineers recognise.

In practical terms, you will find ASDD used for:

- Main loom breakouts between engine bay and cabin
- ECU and engine management interfaces
- Dash and data logger connections
- Sensor clusters such as pressure, temperature and position sensors
- Gearbox and differential harness interfaces
- Pitlane umbilical or diagnostic ports

The wide use of the family also brings a practical benefit: documentation, tooling and compatible accessories are easier to source than for niche connectors, which matters when a race weekend is on the line.

Understanding the Part Number Logic

One of the most useful skills when ordering ASDD automotive connectors is learning to read the part numbers. Take a few examples from the catalogue and you can see the structure at work:

- ASDD9WAYPLGSKTNKEYRED describes a 9way plug carrying socket contacts with the N keying, shown in red.
- ASDD23WAYPLGSKTBKEYBLUE is a 23way plug with socket contacts and B keying in blue.
- ASDD41WAYPLGPINBKEYBLUE is a 41way plug with pin contacts and B keying in blue.

- ASDD41WAYPLGPINAKEYYELLOW is a 41way plug with pin contacts and A keying in yellow.
- ASDD41WAYFLGSKTNKEYRED is a 41way flange (panelmount) connector with socket contacts and N keying in red.

Once you see the pattern, the code becomes a short specification the number of ways, the body style (plug or flange), the contact gender (pin or socket) and the keying and colour. Always double check the manufacturer datasheet for the exact layout, because the count alone does not tell you which contact sizes sit in which positions.

Plugs, Flanges, Pins and SocketsHow the Pieces Fit Together

A complete ASDD connector interface is made of two mating halves. One half is usually a plug on a cable, the other a flange or another plug attached to a device or to the other end of a harness. Contacts inside are either pins or sockets, and the usual convention is to place the socket contacts in the half that is exposed when unmated, so there is less risk of bent pins and accidental shorting. For example, a 41way flange connector with socket contacts and red N keying is typically used where a loom needs to pass through a bulkhead or mount rigidly to a box, while a [41way plug with pin contacts and yellow A keying](#) provides the matching freehanging half on the other side.

Smaller Layouts9Way and 23Way Options

Not every circuit needs 41 contacts. For smaller subsystems, a compact plug is easier to route and lighter to carry. The [ASDD9 9way](#) plug with socket contacts and red keying is a typical choice for a handful of sensor or actuator circuits, while the ASDD23 23way plug with socket contacts and blue B keying sits comfortably between the two, giving enough room for a midsize subloom such as a gearbox or a dash interface.

A good rule of thumb is to group circuits by function and location, not by whatever fits. When all engine sensors share one connector, a single plug change in the service area handles the whole group. When sensors from different areas are mixed in one connector, a single damaged wire can disable several unrelated functions.

Sealing and Environmental Protection

Water is the silent enemy of racing electronics. High pressure washing, rain, spray from the tyres, condensation from heat cycling, brake dust, oil mist and fuel vapour all attack unprotected connectors. Sealed motorsport connectors exist to stop that attack at the interface.

The typical sealing arrangement inside an ASDD connector includes:

- Wire seals that grip the insulation of each conductor as it enters the rear of the housing
- Interfacial sealing between the two mating halves

- Sealing plugs to close any unused cavities, which is important because an empty cavity is an open path for water

A frequent beginner mistake is to leave unused cavities empty. Fit the correct sealing plug, or the sealing is compromised no matter how good the remaining parts are. Another is to use wire whose outer diameter falls outside the range the wire seal is designed for. Always match the cable you intend to use to the seal and contact specification.

Vibration, Heat and Mechanical Reliability

A race car is a brutal place for electrical hardware. Engine vibration, kerb strikes, heat soak after a stop and repeated thermal cycling all act together. High performance wiring connectors must therefore do three things well:

1. Retain the contacts. Contacts are held by retention clips inside the housing, and a properly crimped and fully seated contact will not back out under vibration.
2. Maintain contact pressure. The spring design in the socket maintains a stable low resistance joint over many mating cycles.
3. Withstanding temperature. Housings and seals are rated for a temperature range appropriate for automotive and motorsport use. Check the datasheet for the exact range when a connector will sit near a turbo, exhaust or brake.

The weakest point in many looms is not the connector itself but the wire a few centimetres behind it. Wire that is allowed to flex right at the rear of the connector will fatigue at that point. Strain relief, backshells and proper loom support are essential, and we cover them in more detail in our other guides on installation and accessories. Because the keys are different colours and arrangements, a blue keyed plug such as the [ASDD41 plug with pins and blue keying](#) cannot be forced onto an A or N mating half by mistake.

ContactsThe Heart of Every Connection

The housing gets the attention, but the connector pin and socket contacts do the actual work. A poor crimp, a wrong contact size or a damaged spring will cost you reliability even if the housing is perfect. Keep these principles in mind:

- Use the contact type specified for the connector series; do not mix generic contacts.
- Match the wire gauge to the contact barrel.
- Use the proper crimping tool and positioner for the contact size, not pliers.
- Perform a pull test on sample crimps before building the real harness.
- Fully seat each contact until the retention clip clicks, then give a gentle tug to confirm.

If you are new to this type of connector, a few hours spent making practice crimps on scrap wire will save you from a lot of trouble later.

ASDD Compared With General Purpose Automotive Connectors

Many road cars use perfectly good sealed connectors. So why do racing teams pick the Autosport range? The answer comes down to priorities. Roadcar connectors are designed for cost effective mass production, long service lives and moderate loads. Racing connectors are designed for professional racing electrical systems where the weight of every gram, the density of the interface and the ability to be repaired quickly are more important than unit cost.



Autosport ASDD	General-Purpose Automotive
✓ Purpose-Built for Motorsport Designed for high-performance and extreme conditions. ✓ Advanced Data Distribution Handles multiple sensors and devices with precision. ✓ Rugged & Durable Withstands heat, vibration and harsh environments. ✓ Plug & Play Connectivity Simplifies installation and reduces wiring time. ✓ Reliable & Consistent Performance Engineered for race-ready dependability.	✗ Designed for Everyday Vehicles Not optimized for high-performance use. ✗ Limited Sensor Support May not handle advanced data requirements. ✗ Standard Build Quality Less resistant to extreme conditions. ✗ Complex Wiring Often requires extra modifications and time. ✗ Can Cause Inconsistent Results Not built for demanding motorsport environments.

Autosport THE RIGHT SOLUTION FOR HIGHER PERFORMANCE

Another difference is the support ecosystem. Because motorsport suppliers stock the range, you can buy individual contacts, seals, backshells and tools, and you can repair a loom with the same parts used to build it. That convenience is why many teams standardise on one family across the whole car.

Common Mistakes When Using ASDD Connectors

Experienced builders still make errors now and then. Here are the ones that cause the most problems:

- Undercrimping or overcrimping contacts, leading to high resistance or broken strands
- Mixing wire sizes that do not suit the wire seal
- Leaving cavities unsealed
- Poor routing, such as pulling the loom tight so the connector carries the strain
- Skipping the pinout documentation, which makes faultfinding slow
- Not labelling the loom, which means every service visit becomes a puzzle

Good documentation is an underrated part of reliability. A simple, up-to-date wiring diagram and a printed pinout for each connector save hours during a weekend.

Maintenance and Inspection Routine

A connector that works today is not guaranteed to work next season. Build a short inspection routine into your pre event checklist:

1. Inspect each connector for signs of water ingress, corrosion or heat damage.
2. Check that locking mechanisms are fully engaged.
3. Look for chafed wires or loom tape that has started to unravel behind the connector.
4. Replace any damaged seals before they fail.
5. Reapply any recommended contact protection if your workshop procedure requires it.

Ten minutes of checking is cheaper than a lost session.

Building a Loom Around ASDD Connectors

A professional harness is a system, not a collection of wires. When you design around Autosport ASDD connectors, plan the following from the start:

- ArchitectureDecide where the main connection points will be and group circuits logically.
- Wire selectionChoose a lightweight, high temperature wire suited to motorsport, and keep the outer diameter within the seal range.
- ProtectionUse sleeving, heatshrink and proper clamping to protect the loom.
- DocumentationNumber every wire and keep a pinout for every connector.
- TestingContinuity and insulation tests on the finished loom, before it goes in the car, catch most mistakes cheaply.

Conclusion

The Deutsch Autosport ASDD family earns its reputation because it solves the real problems of racing electrics, limited space, extreme vibration, water exposure and the need for quick, reliable servicing. From a 9way sensor plug to a 41way flange interface, the range gives builders the flexibility to design looms that are compact, repairable and consistent from one event to the next. Success with these connectors depends as much on technique as on the part itself. Choose the right body style and keying, use the correct contacts and tools, seal every cavity and support the wire behind the connector. Do that, and your connectors will stop being a source of worry and become one of the most dependable parts of the car. If you are sourcing parts for such a project, the main [Arctic Performance Parts](#) shop is a convenient starting point for connectors, contacts and related motorsport wiring components.

Frequently Asked Questions (FAQs)

What are Autosport ASDD connectors used for?

They are sealed, multiway connectors designed for racing and high performance vehicles. Typical uses include ECU interfaces, main loom breakouts, sensor groups, dash and datalogger connections and gearbox or chassis harness joints.

What does the key colour on an ASDD connector mean?

The colour identifies the keying arrangement, such as A (yellow), B (blue) or N (red) in the examples listed in the catalogue. Different keying prevents two connectors in the same loom from being mated by mistake. Always confirm the keying code of both halves before ordering.

Can I mix pin and socket contacts in the same housing?

Generally, a housing is supplied for either pin or socket contacts, according to its part number. The mating half carries the opposite gender. Check the datasheet for the exact configuration before ordering.

Do I need special tools for ASDD contacts?

Yes. Reliable crimping requires a crimp tool and positioner that matches the contact size, plus the extraction tool recommended for the series. Using generic pliers is a common cause of intermittent faults.

Are ASDD connectors waterproof?

They are designed as environmentally sealed connectors, provided that all cavities are filled, the correct wire size is used and the mated halves are fully locked. Sealing performance depends on correct assembly, so follow the datasheet specifications.