

United Equipment Accessories, Inc.  
Solving Challenges from the Inside Out.™



## Hydraulic Swivels with Slip Rings: Which Combination Should You Choose?

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You need a hydraulic swivel/slip ring combination unit. But with so many options, how do you know which combination is right for your application? I'm here to help you.

UEA routinely helps our customers choose between the three different types of hydraulic swivel slip ring combination units. While there's a lot to think about, the main objectives are to save you money and create an assembly that surpasses the requirements of the application.

It's important to understand the distinction between surpassing requirements and mindlessly over-engineering a product. We're not in the business of selling a one-size-fits-all solution. Our main advantage is our ability to create custom designs for our customers without needless additional costs.

There are three main styles of slip ring and hydraulic swivel combination units available: fully integrated, semi-integrated, and separated design.

## Fully Integrated

Fully integrated combo units integrate the slip ring directly into the end of the hydraulic swivel. Externally, the unit appears to be just a hydraulic swivel with the telltale signs of an electrical harness coming out of both ends. This style is best used with minimal slip ring circuits and a very critical requirement for sealing and protecting the slip ring components. This style is commonly used in the forestry industry.



### Pros:

- It's the most robust, by a large margin; it's literally bulletproof.
- It employs the least amount of parts.

### Cons:

- Due to its nature, only low amounts of slip ring circuits are cost effective.
- Removal of the slip ring can be trickier than the separated style.
- Additional engineering time is required.

## Semi-Integrated

On semi-integrated combo units, the slip ring is mounted directly onto the end of a hydraulic swivel. However, the slip ring circuits are enclosed using our standard spun aluminum cover, not the swivel housing like the fully integrated version. This version is best suited for applications that have more slip ring circuits and less harsh requirements for sealing and protecting the electrical circuits, as well as designs with length restraints. This style is commonly used in the construction and railroad industry.



### Pros:

- It allows us to fit the maximum amount of slip ring circuits into an application with length restrictions.
- It's the most cost effective style for large amounts of circuits.



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### Cons:

- It doesn't have the robustness of the fully integrated style.
- It has similar engineering time requirements as the fully integrated version.
- The harness exit location is not as easily changed as the fully integrated version.

## Separated Design

Combo units with a separated design have the hydraulic swivel and slip ring separated by a mounting tube and flange. This is the classic style that has been used for decades. The two units can be separated easily and this style has the lowest heat transfer between the slip ring and swivel. It's best suited for applications with many slip ring circuits and low sealing/protection requirements, as well as no stringent length requirements. This style also requires the least amount of upfront design work, so it's well suited for low yearly requirements – for example, less than 10 per year. This style is commonly used in the construction and railroad industry.

### Pros:

- It requires the least amount of engineering effort to join the two together.
- We can lengthen the mounting tube if other components are in the way.
- The additional space between the two units helps reduce heat transfer.
- Disassembly is visually straightforward; most mechanics are familiar with this style as it's been the standard for decades.

### Cons:

- It uses the most parts.
- It's typically the longest of the three.

The design team at UEA will give you the most practical option available by default. If you would like to use one style over the other, we will gladly turn your vision into reality.

