Powervamp
ADVANCED POWER SOLUTIONS

Sidewinder®

AIRPORT GROUND POWER CABLE CARRIER SYSTEM

Aircraft power cabling and aircraft plugs are subjected to extremes of wear, impact damage and rough handling. As a result, power cables and AC plugs are a constant source of problems at busy airports, with any failure potentially having an impact on safety, turn-round times and costs.

Powervamp's Sidewinder cable carrier system is engineered to give airports a simple, reliable power transfer system at an affordable price.

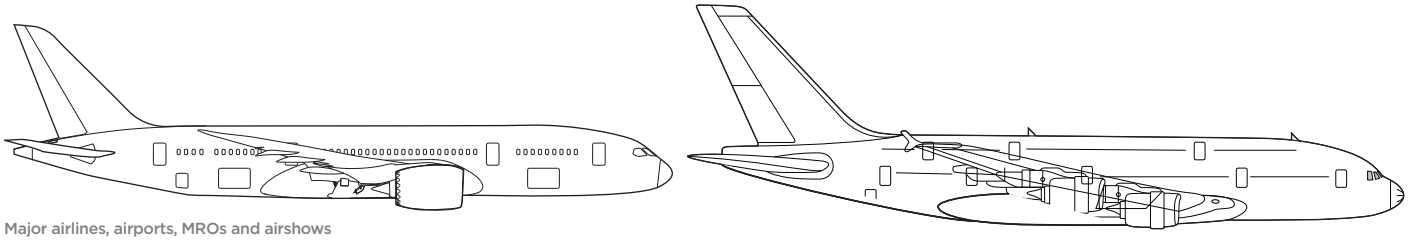
Compared with any other type of cable carrier, Sidewinder has the lowest life cost of ownership, achieved through key design features such as:

- high quality low rolling resistance castoring wheels
- special steel drag link chain beam pivots
- modular sub-assemblies
- quick release connectors
- quick access beams and chains
- 1, 2, 3 or 4 x 90kVA outputs

Powervamp has considered all aspects of Sidewinder deployment – from initial transport and installation to ease of operation and field service.

Working directly with ground handling teams at major UK airports to understand, and respond to, the challenges they face, the design team has created Sidewinder, the ultimate in simple, reliable, airport power transfer systems from converter to aircraft.

Typical aircraft:* Airbus A380, A340, A319, Boeing B787, B777, 747, B767, or power plants of a similar specification



Major airlines, airports, MROs and airshows

*This information is given in good faith

Sidewinder

Key Design Features	User Benefits	Additional Investment Bonus
Heavy-duty steel drag link chain beam pivots	Prevents over-bend of cable. Eliminates cable stretch, cable waisting and hot spots	Stops cable creep, substantially extends cable life, cuts costs. Prevents cable thinning
Unique beam and chain design allows open access to cables	Allows repairs or cable change on-site with minimum strip down time	Huge time/cost savings – big impact on life costs
Cutaway screw slots on beam lid	Speeds inspection access, all bolts remain captive	Eliminates lost screws and possible FOD at ramp
Vertical articulation and vertical adjustment of beam from fixed base	Remove component stresses on on uneven ramps. Allows option of wheel increase	Eliminates fatigue failures, unit can operate in winter conditions, extends MTBF
Low rolling resistance wheels	Minimises break-out effort from parking position	Allows one-man operation, reduces fatigue or strain on user
Modular alloy wheel mounts with radiused guards	Protects wheels, no sharp edges, incorporates beam lock and buffer stops	Safe for operators, impact tolerant, accepts various wheel options
"Stamp lock" quick release brakes	Rapid brake application. Superior stability, instant release with foot pedal	No more tyre flat spots – major savings, improved reliability and possible free wheeling
Vertical adjustment and detachable front section of main junction box	Allows remake of existing input cable tails and rapid installation	Cuts installation times, simplifies connections, very fast swap-out
Main junction box with ergonomic and spacious layout	Simple cable connections. Easy for maintenance	Saves time, quick to inspect, aids safety and rapid swap-out
Sidewinder junction box with swap-out gland plate	Allows pre-work off-site on input cable gland installation	Easy service, saves time, simplifies input cable change
Front control cabinet with quick release plugs for secondary wiring	Swap-out time is reduced. Wiring errors eliminated. Reliability increased	Harnesses can be pre-tested. Maintenance easier
Modular control cabinet, separate from basket	Allows continued operation even with basket removed	Designed to provide maximum damage tolerance with no delay
Detachable basket module retained by two bolts	Basket interchangeable in minutes	No cable disconnect delays
Bolt-on basket grab handle	Eliminates on-site welding repairs which previously required complete cable carrier removal from ramp	No need to remove basket, impact damage sorted in minutes. No loss of service
Cable basket options allow alternative fitment should ramp requirements change	Five minutes to fit or to swap	Major benefit in transporting, service, repair or configuration changes
Vertical pivot from basket to control box	All-wheel contact on uneven ground	Basket always stable, aids safety, eliminates component stress
Bolt-on stainless steel holsters for 400Hz plugs	No more weld failures. Holster design can be varied to accommodate ground staff requirements	Reliability of basket enhanced, stow angle of plugs can be changed to suit plug types
2mm stainless beams with double bottom section	Minimum weight, high structural strength. Not prone to fatigue	Long life, low weight, minimum size and easy to service and handle
Continuity marking of plugs, stowage basket and controls	No confusion on plugs and cables	Instant fault identification, major time saving, contributes to rapid repair
Modular sub-assemblies	Damage downtime minimised, swap-out easy if damaged	Fast planned maintenance – up time maximised, spares holdings reduced
Bolt hole pitches standardised	Facilitates rapid exchange and swap-out	No drilling on ramp, no delays waiting for work permit authorisation
Flex-mounted alloy flag poles with 2x90 degree hi-viz pennants per pole	Easy-to-see warning device for ramp vehicles	Improves awareness of beam locations, alerts operators, prevents damage

Sidewinder

Sidewinder: specified by London Heathrow Airport

"With Sidewinder, Powervamp have covered all the issues that are troublesome with the existing cable carriers. Its low rolling resistance makes it easy for the ground handlers to deploy, and the modular design certainly makes maintenance a simple job for our engineers. There is no doubt Sidewinder is appreciated by the ground handlers, Airline and maintenance staff"

Sharif Hameed BEng (Hons)
Contract Manager for Land & Airside Engineering, Heathrow Airport Ltd.

Sidewinder

Specifications

Beam construction	2mm stainless steel, with welded overlap
Beam length	2650mm
Beam height	168mm
Beam width	107mm
Deployment length (infeed box to basket)	12m, 18m, 24m
Output cables from basket	6m
Overall stowed footprint, 3 beam	W: 3420 x D: 3410mm
Max working radius	180 degrees
Wheel diameter, standard	160mm
Basket dimensions	W 1032 x D 905 x H 860 mm
Installation bias	Left or right extension depending on assembly
Drag link	Tensile steel links and pins with alloy vertical post modules
Forward control cabinet	Stainless steel IP65 rated
Forward control buttons	400hz on/off/ Interlock on/off monitoring options
Brake system	Basket mounted double stamp locks with frame mounted back-up locks
Weight	700kg (4 cable, 12 metre version)

Certification:
ISO 9001:2008 – Quality managament systems – requirements
SAE-ARP 5015, 2011 – 01 400Hz ground power performance requirement

UNIQUE MODULAR DESIGN

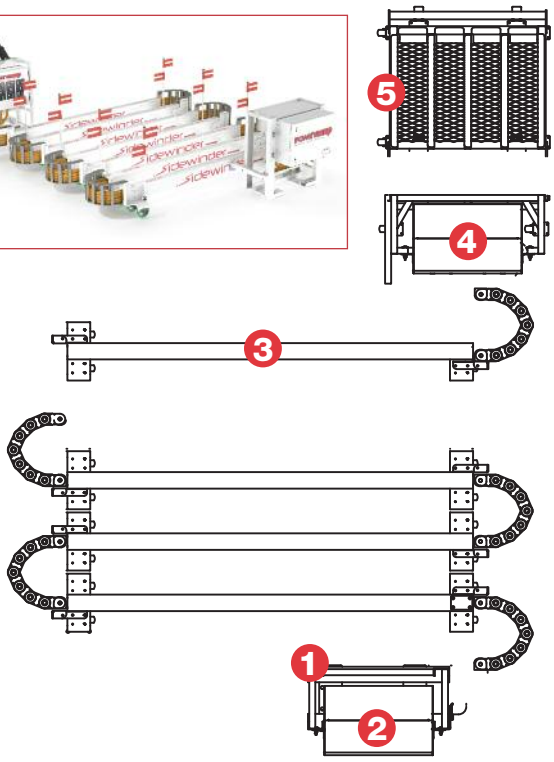
FOR RAPID SWAP-OUT AND UPGRADING

Sidewinder's unique design enables airports to modify an installed unit to accommodate stand upgrades or aircraft changes. Anchor holes for securing the beam are compatible with most other products allowing rapid swap-out and upgrade without the need to obtain permits or carry out major groundworks.

SIDEWINDER COMPRISES THE FOLLOWING MODULES:

1. **Beam anchor with distribution box mount**
2. **Distribution box** designed for 1, 2, 3 or 4 x 90 kVA cabling
3. **Chain/beam modules** available in increments of 3m
   Minimum length: 12m (3 beams)
   Option: Length increases in increments of 3m to maximum extension 9 beams (30m)
4. **Front end control box** with bus bar options for 1, 2, 3 or 4 x 90 kVA outputs and connection to 28V DC module*
5. **Quick detachable cable basket**:
   Standard 2 compartments, (optional 4 compartments), each stows up to 6m of cable with stainless steel holster

* Due to voltage drop at high amperages, a separate DC module connected to the AC 400Hz output at the basket end is recommended where long cable runs are required.



Sidewinder can be powered by all 400Hz GPUs, including Powervamp's PV90-3 fixed or mobile 90kVA 400Hz GPU

See Sidewinder in action on our YouTube channel:
https://www.youtube.com/watch?v=WCZZy1ZNTpA

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