FEATURES & BENEFITS

- Robust design.
- Various battery capacities available.
- Various electric motor sizes available.
- Various pump sizes available.
- Can be customized to offer multiple layouts depending on available footprint.
- Completely standalone solution.
- Can be actuated remotely if required.

iMPAQ TECHNOLOGIES

ePowering subsea equipment

CASE STUDY

MicroPAQ Battery Powered HPU



Overview:

iMPAQ Technologies partnered with Allspeeds to demonstrate that our MicroPAQ 3kW battery powered HPU package could effectively operate their HVC220 (220mm max cut size) cable cutter for offshore and subsea cutting operations. The package includes our topside surface controller connected to communicate with the BLDC HPU, which provides hydraulic power to a valve pack activating the cutter. This HVC220 cutter is one of the largest cutters Allspeeds produces, and it shows that the unit could effectively operate Allspeed's smaller units as well.

The system was tested with various materials during the initial test phase, including a 150mm armoured umbilical, 150mm armoured export cable and a 50mm wire rope.

All cuts completed during the trial were performed on a single battery charge (battery size used was 20Ah) for our BatteryPAQ, highlighting the efficiency and reliability of this innovative portable solution. As the unit is locally battery powered, it shows that this type of work can be conducted without requiring power from the surface.

Test Setup:

- A 20AH BatteryPAQ pod was connected to the HPU provide the power for the system.
- The BLDC HPU was connected to the HCV220 and was configured to output 4 lpm @ 180 bar.
- The hydraulics were then fed through the mini booster which is integrated into the HVC220 assembly – this offered 690 bar operating pressure once boosted.
- A suitable valve pack was used to control the hammer and anvil of the HVC 220.
- Test pieces of the different materials listed above were cut to evaluate system performance.

During the initial testing phase, the following were monitored:

- **Electrical characteristics** – voltage, speed and power to document the load on the HPU for each cut completed.
- **Hydraulic characteristics** – to ensure the HVC220 was operated under the correct conditions.
- **Cutting capabilities** – to assess the performance of the BLDC HPU when paired with the HCV220.

Results:

The system demonstrated consistent performance throughout the trial. The BLDC HPU proved fully capable of driving the HCV220 under all tested conditions. The following test pieces were successfully cut as part of the testing criteria.

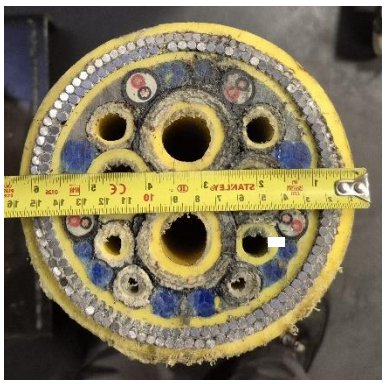
- 150mm armoured umbilical – Cut time 250 seconds.
- 150mm armoured export cable – Cut time 300 seconds.
- 50mm wire rope – Cut time 150 seconds.



50mm wire rope cut by MicroPAQ.



150mm armoured export cable cut by MicroPAQ.



150mm armoured umbilical cable cut by MicroPAQ.

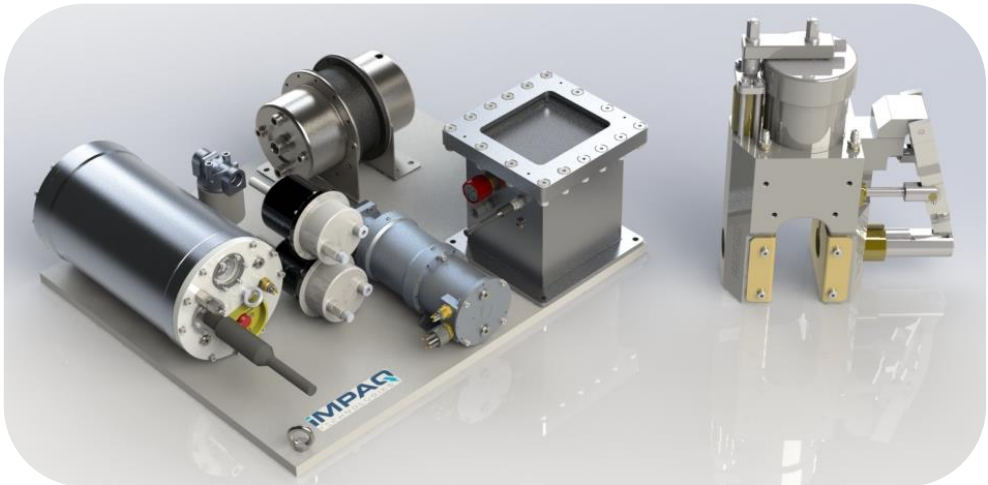
Conclusion:

The trial confirmed that the MicroPAQ BLDC HPU and HCV220 can be paired to provide a highly effective portable cutting solution for offshore applications. The system reliably cut all tested subsea materials and operated highly efficiently on a single battery charge, demonstrating its suitability for offshore use.

- Portable and battery powered – no external power supply required.
- Large cutting capability – able to cut large umbilicals, export cables and wire ropes.
- Efficient – all cuts completed on a single battery charge using a 20Ah battery pack.
- Offshore ready solution – compact, easy to deploy and reliable in subsea conditions.

Although we proved the versatility of MicroPAQ during this testing with the Allspeeds cutter this solution lends itself to any application where portable standalone hydraulic power is required – contact us to discuss how MicroPAQ can power your next project.

Get in Touch: Contact us at **sales@impaq-technologies.com** or call **+44(0)1330 860045**



MicroPAQ 3kW HPU battery powered package & Allseed's 75mm cutter