

What is Hydraulic Power?

What does hydraulic power provide?

- The output of hydraulic power is;
 - Force in Newtons (N) from a linear hydraulic cylinder
 - Torque in Newton meters (Nm) from a hydraulic motor or rotary actuator
 - Linear speed in metres per second (m/s) or rotational speed in revs per minute (rpm)
- Pressure in Bar provides the force and torque
- Flow in litres/minute (l/min) provides the speed

How do you produce hydraulic power?

- Convert electrical power using an electric motor or from mechanical power using an engine to drive a hydraulic pump.
- The hydraulic pump compresses the oil to pressurise and pushes it out to create flow.
- Hydraulic power can be produced and delivered by a hydraulic power pack or unit.
- Pressures up to 420 bar maximum can be produced for standard hydraulics.
- Flows up to may thousands of litres/minute can be produced by large hydraulic power units.

What types of hydraulic power units (HPU's) are there?



Known as micropacks, these are small power packs sold in their thousands – used for lorry tails lifts, stair lifts, pleasure boat steering and dock levellers to name a few!



The holy grail – standard hydraulic power packs. An electric motor & pump up 7.5 kW in power, gear pump and standard components



An engine driven hydraulic power pack for operating hydraulic tools such as breakers. Portable.

More types of hydraulic power units – non standard



A small hydraulic power unit with stainless steel tank, electrical starter panel and an accumulator.



Bespoke HPU with a small pump set and hose reels.



Large HPU supplying a ring main with a flow of over 300 l/min per pump.

What is hydraulic power?

- We know what it provides and how to provide it, what does it physically do?
 - In a hydraulic excavator, hydraulics provides power to move the arm and lift large loads. It also powers the drive motors to make it move.



What else can hydraulic power do?



Power hydraulic presses to create large forces.



Rotates and provides the torque for hydraulic winches



Provides the force to reduce the thickness of steel in a steel mill

There are thousands of applications for hydraulic power