

EXCAVATORS



The amphibious excavator is tracked down into the overgrown watercourse ready to start its clearance.

ON THE WATERFRONT

Nick Johnson tracks down the first of a new compact, self-contained amphibious excavator that is now working in the hire fleet of the pioneering company Land & Water Plant.

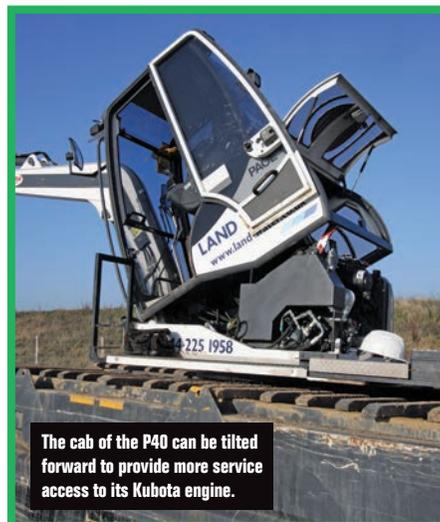
With unusually heavy rain now seemingly more common than ever, the need to keep rivers and waterways clear in order to maintain flow and prevent flooding is particularly important. But clearing watercourses from their banks is not always possible due to access problems and the need to protect the habitat.

So for jobs where its many long reach excavators cannot be used, the specialist equipment provider Land & Water Plant moves from the land into the water and deploys one of its amphibious excavators. Over the years the company has built up unrivalled expertise in operating these unusual machines and its fleet now extends from an interesting unit called the Truxor to long reach Waterkings.

The self-propelled Truxor is made in Sweden and has two pontoon mounted tracks and a forward facing arm that can carry a weed cutter or a suction pump. The machine is 2.06m wide and weighs 1,400kg. The Waterkings are amphibious 360° excavators with pontoon mounted tracks sourced from Holland. The smaller WVK90 uses a Takeuchi TB295W top whilst the superstructure of the

WVK150 is from a Hitachi Zaxis ZX 130. Maximum outreach/digging depth are respectively 10.0m/6.0m and 12.0m/7.0m.

Retractable pontoons on both the Waterkings allow a transport width of 3.5m but Land & Water saw the requirement for a smaller amphibious 360° excavator with a narrower transport width that does not need a movement order. So it has worked through UK dealer Exac-One with the specialist



The cab of the P40 can be tilted forward to provide more service access to its Kubota engine.

excavator and attachments maker Osma to produce the world's first amphibious P40.

Based in Pignano, Italy, Osma is best known here for its flail mower attachments but it also makes Batemag mobile walking excavators. Removing the hill climbing wheeled legs from a 3.9 tonne class machine and replacing them with its own pontoon mounted tracks has added an exciting new dimension to Land & Water Plant's amphibious excavator fleet.

A big advantage of the new amphibious P40 is that it can be transported complete on the road without a movement order. The machine only weighs 7.2 tonnes and its pontoons can be hydraulically retracted to create a very acceptable transport width of 2.7m.

Whilst the machine is obviously higher than an ordinary mini excavator, this does not stop it reaching rural locations like the site by the sea in West Sussex where I saw it in action. The machine had been supplied to clear a reed choked watercourse to alleviate the risk of flooding to the West Sands holiday village near Selsey on the south coast.

Access to the site was by narrow country roads but these were not an obstacle for the specialist transport company Tomato Plant of



The unique P40 amphibious excavator arriving on site carried by a distinctive Tomato Plant delivery vehicle.

Iver. It used an 8x4 Volvo FM500 with a Fassi F365 loader and an Andover Trailers beavertail body. Complete with its prominent red tomato graphics and the unique P40 on board, the combination really stood out on the road.

Once the P40 was tracked off down the rear ramps of 'the Tomato truck' I was able to get a close look at it. Each sealed pontoon is 5,387mm long and 1,269mm high with recessed footholds to aid the ascent to the cab. The 1,000mm wide tracks utilise widely spaced narrow recycled plastic pads carried on chains.

The machine is driven by a 41kW (55hp) Kubota V2004T diesel engine which provides plenty of power for both tracking and excavator operation. Land & Water Plant has fitted the unit with an additional electric fuel pump and a fuel polishing system, as Director Richard Maclean says that maintaining a clean and reliable fuel supply is of utmost importance when an amphibious excavator is working in remote locations surrounded by water.

Three Aux Circuits

The P40 has a forward tilting cab to improve access to its engine. Hydraulic components are sourced from Walvoil and the machine has Bonfiglioli gearboxes. To facilitate the use of a rotator and powered attachments, such as a weed cutter or a small tree shear, the machine has no less than three auxiliary hydraulic circuits – one single/double acting service (with a flow rate of 55 litres/min) and two double acting services (each providing 25 litres/min).

When first delivered last year the P40 had a telescopic dipper arm but this has now been replaced by a simpler, fixed length arm.



The long dipper arm enables the material to be placed clear of the edge of the bank.



The machine has a very low ground bearing pressure.

Other modifications resulting from initial on-the-job trials included reinforcing the pontoons and adding more Hardox steel.

Tracking the machine on dry land is a somewhat noisy affair and the process might be aided by having a water spray system to lubricate the track chains. However, once in the water course the machine was in its element and it was soon powering through the reeds to start dredging out the channel with its 1.0m wide bucket.

The machine can float but it works best in water up to a depth of 1.0m. Working on soft riverbeds is added by the machine's very low ground bearing pressure of 0.09kg/cm². To maximise operational stability, the pontoons are hydraulically extended sideways to provide a maximum width of 3.2m.

Now with its fixed length dipper, the P40 provides a maximum outreach of 6.5m and maximum digging depth of 6.2m (from boom pin). These dimensions were more than adequate for cleaning out the water course beside the holiday village and depositing the

excavated material neatly along the opposite bank well clear of the water's end and the homes of any local creatures.

On this job it would have been difficult to deploy a long reach excavator from one side due to restricted access. The use of the smaller machine working in the water saves damage to the banks and surrounding areas and it is easier to transport to and from site.

With the P40 Land & Water Plant has gained a very useful addition to its specialised amphibious and long reach excavator fleet. Having refined the unit, Richard Maclean is very pleased with its performance and is looking to buy another as more customers come to appreciate the machine's unique capabilities.

i For more information about the new Land & Water amphibious excavators please use the reader enquiry number below

CIRCLE READERLINK 056