

Dawson Hammers



General

The Dawson piling hammers are double acting hydraulic hammers well suited for driving sheet piles, steel profiles and timber piles. They are good choices especially for cohesive soils (stiff clays) and dense granular material or soft rocks where vibratory hammers may meet problems.

The hammers are produced in several sizes of which two sizes are presented here - the HPH 1200 delivering 1200 kgm (12kNm) and the HPH 2400 delivering 2400 kgm (24 kNm).

Basically Dawson hammers set consists of:

- a cast iron drop weight.
- a hydraulic hoist cylinder in which the piston is not the drop weight.
- a combination of guide cylinder and frame to tie everything together.
- a cast steel anvil with resilient dolly.
- a control pendant.
- power pack.

Cast iron drop weight

The drop weight is driven up and down by a hydraulic ram inside a housing. The ram is double acting so the drop weight is accelerated both on the upstroke and the down stroke. This gives the hammer a high energy output and high blow rate.

Hydraulic hoist cylinder

Dawson hammers use the motion of the drop weight to activate hydraulic pilot valves which provide a hydraulic pilot signal to the main control valve which activates the hoist cylinder. All of this is mounted on the hammer casing. Adjustment of hammer drop height takes place hydraulically from a control pendant.

Power pack

The oil supplied to the hydraulic ram comes from the power pack via a control valve mounted inside the top of the hammer. This control valve switches the oil supply on or off at the upstroke side of the hydraulic ram i.e. oil supply "on" lifts the drop weight and oil supply "off" drops it.

	<p>Main advantages by the Dawson hammers:</p> <ul style="list-style-type: none"> ▣ Ability to give a powerful drive without massive weight. ▣ Rapid action from the double acting hydraulic cylinder reduces driving time. ▣ High blow rate (up to 140 blows per minute) gives efficient penetration and higher productivity. ▣ Rapid, remote control of energy per blow and blows per minute. ▣ Most single and double sheet piles can be driven using the same standard leg inserts and anvil. ▣ The standard insert configuration fits a wide variety of sheet and H pile types. ▣ Enclosed design protects sensitive components.

Dawson HPH-1200

As a guide HPH-1200 is suitable for all driving until very dense or very stiff ground is encountered. At this time the HPH 1200 will toe the piles into, but not drive through the material. The SPT number (N value) at this level might be anything between 50 and 100.

HPH 1200 Specifications

Hammer		
Ram weight	kg	1040
Stroke	mm	720
Impact velocity	m/sec	4.76
Max. energy transferred to pile	kNm	12
Min. energy transferred to pile	kNm	6,42
Blow count	bl/min	70-120
Length, leader mounted	mm	3800
Length, free hanging	mm	4670
Body diameter	mm	406
Weight, freely suspended	kg	3000
Power Pack		
Diesel engine	kW	40
Hydraulic pressure, max.	bar	240
Hydraulic flow - open circuit	l/min	75
Length	mm	1900
Width	mm	1400
Height	mm	1800
Weight	kg	2000