

# Aldridge Piling Equipment (Hire) Company Ltd

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The Hire specialist in trench sheet installation and extraction equipment  
The No.1 supplier of equipment for installing Plastic, Vinyl and Composite sheet piling

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# Double acting air hammers

APE boasts the widest range of these very useful impact hammers. With sizes ranging from the APE No.1 at 90kg through to 3000kg - the BSP 700N; APE can match any trench sheet with any site restrictions.

Yes, a compressor is required and these hammers are noisy, but in hard ground or difficult access, these hammers offer improved penetration over vibrators, often with lower perceivable levels of ground vibration. These hammer also provide a more economic solution for smaller applications.

## Equipment description

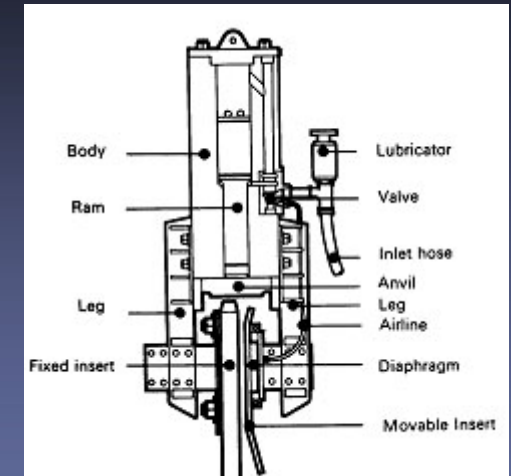
A typical Air hammer is shown in the figure opposite; however, some hammers may have less or more components. Air Impact hammers consist of a body casing which houses a drop weight or ram. Unlike drop hammers, or single acting hammers this ram is lifted and forced down. The motive fluid moving the ram being compressed air.

The air arrives under pressure in a valve box containing a slide valve, which sends it alternatively to each side of the ram, while the opposite side is connected to the exhaust ports. When falling, the ram hits a flat anvil, the pressure lifts the ram and allows it to be forced down again on to the anvil. The energy of each impact being transferred to the driven element.

The Air hammers rely on high speed of impact of the ram and the high number of impacts. The ram weight of double-acting air hammers tend to be only 10 - 20% of the overall hammer weight, but this is effectively increased by the pressure ( 5 - 8 bar) on the upper end of the ram. Up to 90% of the available energy blow is derived from the action of the air upon the ram.

Please note it is not advisable to insert a driving cap between the hammer anvil and the element being driven since this leads to an enormous loss of efficiency.





In normal operation, the Air hammer is straddled over the sheet, the leg guides enabling stability and correct sheet alignment. Some Air hammers feature air-powered clamps that act continuously, or periodically at the moment of impact. These are present to prevent reaction bouncing at impact, and maximise the blow efficiency. These clamps are not designed to pitch sheets, and this should never be attempted, always use a quick release shackle.



# APE Mini Hammers - Unique to APE

These small hammers have been design and manufacturer by APE; initially aim towards the installation of light trench sheeting for canal maintenance.

Today these hammers frequently drive:

-  Short lengths of trench sheets, especially on canal maintenance
-  Timber piles and poles
-  Barrier post, on carriageway maintenance
-  The new plastic piling (extruded, cast and composite)

The APE Mini hammers are available in two sizes the No.1 and No.2.

To those familiar with the traditional TEP and BSP hammers, the APE No.1 is our equivalent to the TEP100 and the No.2 is our equivalent to the BSP No.200.

To assist in your selection they are listed least powerful first across to the most powerful.

The APE Mini hammers No.1 and No.2 if on the list would be less powerful than the BSP No.300.

Description	Units	No.1	No.2
Weight of ram	Kg	11	26
Piston Stroke	mm	102	150
Max Blows per minute		445	442
Theoretical Energy per blow	Kg.M	21.7	52.3
Total weight of hammer	Kg	90	270
Weight of ballast weight	Kg	50	na
Compressor size	cfm	125	125
<b>Air pressure</b>	PSI	90	90



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# Plastic Piling Equipment

Plastic sheet piling, manufactured from either polyvinyl chloride or fibre reinforced polymer, has extensively been used for soil retention in North America and Continental Europe, particularly for waterway and marine applications. Production of sheet piling from recycled PVC has recently started in the UK.

Whilst not typically used in the UK for temporary works, there are many applications which are either permanent or semi permanent which benefit from their use. In general the true potential for this product has yet to be realised.

Also, it is frequent for longer lengths of plastic piles to be specified than equivalent metal trench sheets, since they tend to be used in exclusionary applications rather than load bearing.



Equipment available to suit:

-  **HL Plastic Piling - Z & U Profiles**
-  **Profextru Prolock and Multilock**
-  **Creative Pultrusion Composite piles**
-  **CMI Vinyl and Composite sheet piles**
-  **Europile Vinyl**
-  **Bendex Plastic Piling**



As with the advent of steel sheeting and its promotion against the use of timber piling boards, the equipment employed to drive the sections had to be modified. That stated with over 70 years to modify and develop new hammers for steel sheeting, the available equipment suitable for plastic piling is understandably still in its infancy. The main problem lies with the high flexibility of the sheet serving to dampen a high proportion of input energy from the hammer, reducing penetration depths and rates.

APE has successfully modified some of the hammers within our range to enable plastic piling to be driven. As detailed before our range primarily consists of PDA hammers or air impact hammers and excavator mounted vibratory hammers. Since APE had from its earliest origins specialised in the equipment used for light sections, it is not surprising that APE has taken to the forefront in equipment suitable for installing plastic piles.

Unique to APE are the APE No.1 and No.2 PDA hammers, and as these are our lightest air hammers and the first to be employed for plastic piling. These hammers are impact based and are top acting. As a result they are light enough to drive plastic piles, but do still suffer from lower efficiency occurring through the flexure of the sheet. The APE No.1 is small enough to drive the sheets in singles, whilst the APE No.2 drives the sheets in pairs and so best suits the box rib configurations, or wider U shaped piles. Typically, the maximum length that can be driven is 3 metres, driven in by a depth of 2metres.

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