

ABI Overview



Advanced and environmentally-friendly solutions for shoring and subterranean construction work.

With the introduction of the ABI-MOBILRAM-System in the middle of the 70s, ABI took its first steps in the direction of modern shoring technology. This new concept in machinery revolutionized the whole field of inner-city trench construction. Not only was the daily work volume substantially increased but also fewer workmen were required to carry out the job itself. Constant development at the manufacturing technology lead to more than 30 years experience in the special subterranean construction. Today, ABI offers with the MOBILRAM-System a flexible usable machine with a high mobility and compact measurements.



Until now, over 1600 units have been built, each in different sizes and according to different specifications.

ABI is a medium-sized company with 160 employees with headquarter in Niedernberg, Germany. With the daughter-company DELMAG in Esslingen and a machine program BANUT belongs ABI to the leader of the shoring-machine market. ABI offers his customers in the pile driving, augering and press technics an extensive program of machines, tools and attachments. The experienced design department develops suitable solutions for individual customer problems too – perfect technology at moderate costs. World wide service and consulting, rental equipment availability and quick delivery are important parts of the ABI success.



Based on site experience ABI has redesigned the ABI MOBILRAM for even higher performance and safety. The new improved version features a stronger telescopic mast with even greater usable length. As option a docking system is available which allows the operator to change tools by a push of a button. Part of the docking system is an attachment identification. Further new is a so called CAN-BUS control system with touch screen control panel. All control related joy sticks and elements are ergonomically designed and positioned for smooth operation. Together with the new ABI MOBILRAM a new version, more powerful carriers have been released, too.



Multifunctional

The telescopic leader mast is the key component on the ABI MOBILRAM-System which guides all attachments for common and extraordinary pile driving, extracting, augering and silent piling operations. Usable pile or auger length up to 25 m are available through the model range.

Low set up times

The raking time of an ABI MOBILRAM is very low with less than 30 minutes and to bring the unit back in transport configuration takes not longer. It is done in a one step operation. Vibrators and all other attachments are connected and disconnected quick and safe by the docking system or the traditional rapid changing device.

High mobility

In transport configuration the telescopic leader mast is completely contracted to his minimum length and 90 deg. slewed. Bigger units come with carriers featuring an extendable undercarriage for great on site stability and compact transport dimensions. A true self propelled and compact one-load transporting unit.



Modern and Ergonomic Control

The all new CAN-Bus technology is the main part of new control system with touch screen colour display. Application and working mode related pop up screen menus simplify the operation of the ABI MOBILRAM. On demand date, time and many other parameters can be recorded and also immediate printed, or to be used later stored on a PCMCIA-card. Optionally a system diagnostic via mobile phone modem is available.

Merits:

- menu leaded control with touch screen
- contrast image enhancement
- trouble description in clear language
- less wiring needed by SPS technology

optional:

- built in recording computer
- automatic tool identification
- system diagnostic via mobile phone
- theft prevention and global positioning as tracing feature



The docking system consists of a base frame on the ABI MOBILRAM and a guide frame on the attachment being joined by an hydraulic locking mechanism. This enables a quick and safe change over of the various ABI attachments e.g. vibrator and auger drive.

Manual connecting of the hydraulic hoses is eliminated and with it the danger of incorrect connection of the hydraulics. Shorter change over time brings the unit quickly back to work thus increasing its efficiency and lowering the risks of accidents for the personal.

A further positive side effect is the leak oil proof system, which turns the machine into an even more environmentally friendly piece of equipment by using flat gasket couplings.

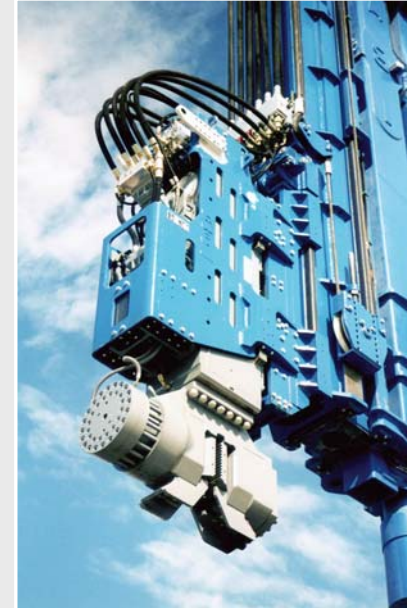
As an optional feature an automatic identification for the various attachments is available. A contact free data transfer of e.g. hydraulic oil consumption, working hours or service intervals simplifies maintenance works and administration. The correct technical settings of the different attachments in particular avoid accidental improper use with consequential damages.



Conventional vibrators with fixed eccentric moment transfer critical resonances during start up and the stopping phase.

These resonances are the cause for damages on adjacent structures such as houses or infrastructures, utilities lines etc. The new ABI vibrators MRZV-V, which features adjustable eccentric weights, eliminates the critical resonances during the start up and slow down phase. With no eccentric moments during that phases the vibrator is reaching working frequency without any vibrations at all.

At working speed the eccentric moment is then increased by 10 % increments and set where the maximum penetration speed is found. As a result the emissions of noise and vibrations are kept to a minimum.



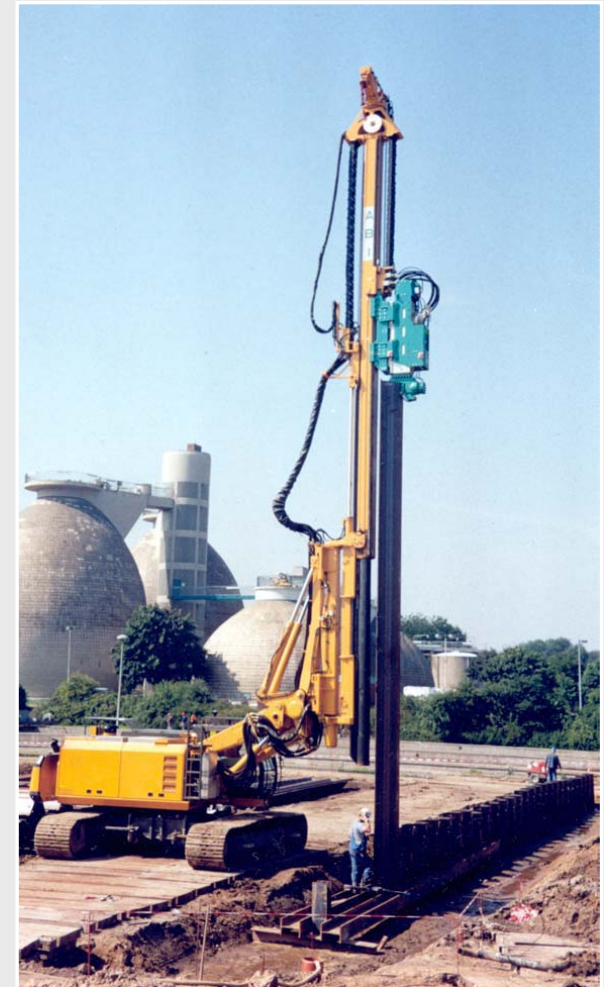
ABI vibrators MRZV-V for installing and extracting of

- steel sheet piles and cold formed piles
- I + H beams
- steel tubing / casings
- full displacement probes
- injection piles
- vibro piles cast-in-situ



Merits of ABI Vibrator MRZV-V with variable eccentric moment

- resonance free starting / stopping
- adjustable to accommodate ground conditions
- usable on sensitive urban sites
- clean and noise reduced
- simple to operate
- high frequencies also during tough driving conditions
- reduced bearing loads due to coaxle arranged eccentric weights, therefore increased life span
- robust structure with standard ABI components



The auger drives are designed to install CFA cast-in-situ, part and full displacement cast-in-situ piles as foundation pile or to auger open holes for soldier beam installation, dewatering well installation and soil investigation. In conjunction with the casing turn device cased holes can be lowered.

During pile driving the auger drives are frequently used for ground release augering to ease driving and extend the life span of piles.

Like other attachments for the ABI MOBILRAM-System the auger drives fit the rapid changing device for quick change over and set up times.

ABI Auger drive MDBA for augering operations

- ground release augering and augering for ground investigation
- augering for soldier pile installation
- displacement augering
- CFA piles
- injection and soil improvement for foundations



ABI Double Auger Head System VDW



With the VDW double auger heads bored piles can be installed direct against adjacent structures. In particular on inner city sites, where building ground is expensive, and noise and vibration are a problem, the double auger heads are the first choice to install retaining walls.

Such walls made of secant piles are serving also as structural part of the new building. Compared with traditional methods such as diaphragm wall, it is a major step forward because no bentonite is needed.



ABI Double auger head system VDW for augering / drilling operations

- pile walls (contiguous type, tangential or secant walls)
- augering cased for soldier pile installation
- well construction (dewatering)
- injection and soil improvement for foundations
- displacement augering



On construction sites where noise and vibration emissions have to be reduced to a minimum the ABI Hydro-Press-System is the economical alternative.

Depending on the type HPS, HPU or HPZ, 3 respectively 4 sheet panels in form of a prepared wall section are taken up, aligned and pressed statically into the soil.

Depending on the geology and type of sheet piles, pressing and extracting performances are attained that compare with conventional pile driving methods.



ABI Hydro-Press-System



ABI Hydro-Press-System HPS

for the vibration-free pushing and extracting of

- cold-rolled steel sheet pile sections with interlock

ABI Hydro-Press-System HPU

for the vibration-free pushing and extracting of

- steel sheet pile U – sections

ABI Hydro-Press-System HPZ

for the vibration-free pushing and extracting of

- steel sheet pile Z – sections



The pile driving and extracting vibrator type HVR is mounted to the dipper stick of a carrier (hydraulic excavator with bucket or grab) and driven by this hydraulic system.

The special merits of these ABI add-on vibrators:

- high speeds
- very short starting and stopping times
- low noise level
- low weight
- high centrifugal forces
- low design height

The add-on vibrators HVR stand out in situations where a limited headroom constitutes a problem, e.g. in buildings or under bridges, because very little of the useful length is lost due to the low design height.



ABI add-on vibrator HVR excavator mounted for the driving and pulling of

- sheet piles and trench sheet piles
- steel beams and girders (e. g. soldier pile walls)
- steel pipes / casings
- full displacement sections



ABI Add-On Auger Drives BA / DBA



The auger drives type BA / DBA can be used on the dipper stick of hydraulic excavators as well as on truck cranes or mini-excavators.

In most cases the existing hydraulic lines of the carrier are used to operate the auger drive.

ABI auger drive BA and DBA for augering operations

- ground release augering
- augering for ground investigation
- soldier pile installation
- displacement augering
- CFA-Piles
- injection and soil improvement for foundations

with ABI casing turn device

- cased drilled shaft installation
- with concrete passage for cast-in-situ pile installation

