

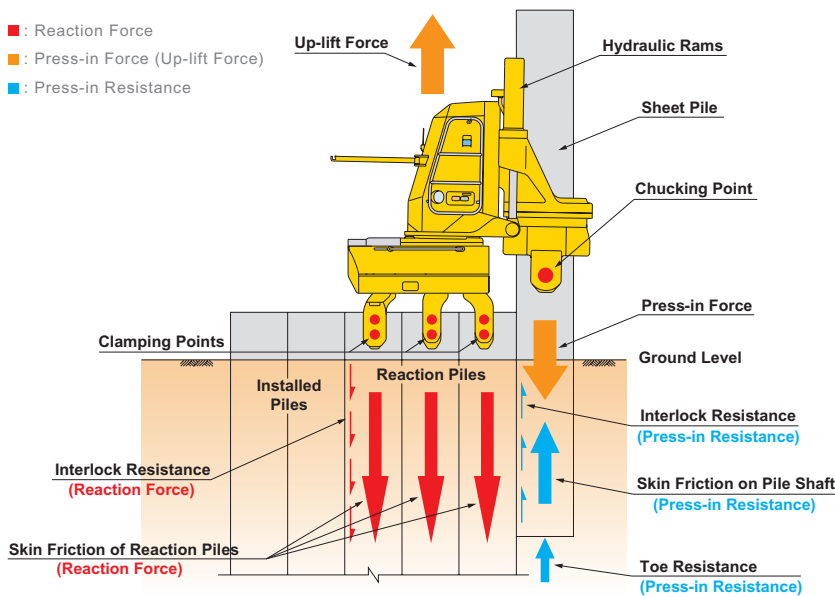


Giken advocates and promotes the "Construction Revolution" to establish a new standard which surpasses the convention of the current construction industry. The fundamental concept of our Construction Revolution is the environmentally friendly "Press-in Method" that hydraulically installs piles silently and without vibration by static load making use of the "Reaction Force" principle.

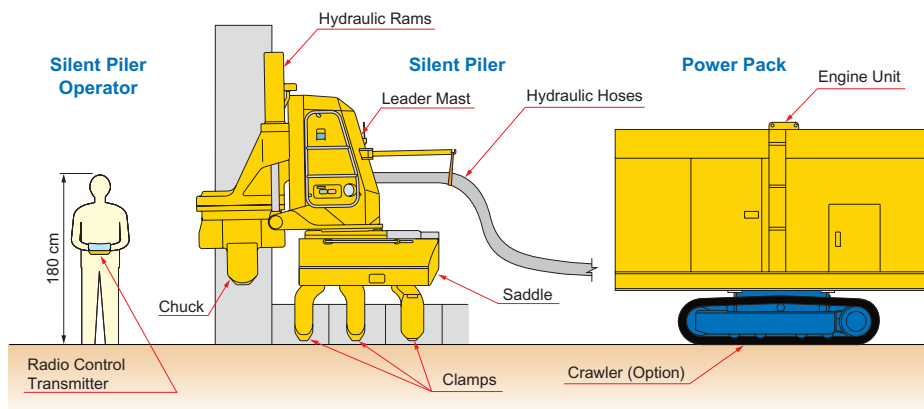
Press-in Method 1/4

Press-in Method

Conventionally prefabricated piles have been pounded or vibrated into the ground. Such methods inevitably generate excessive noise and vibration because of their reliance on percussive or vibratory energy. Giken has developed the reaction-based press-in machine the "Silent Piler" and established the "Press-in Method" based on the principle of non-pollutive pile installation. In practical terms, the Silent Piler grasps previously installed piles and derives reaction force from the negative skin friction and interlock resistance of these reaction piles. This reaction force provides press-in force to hydraulically jack subsequent piles into the ground. Since the piles are pressed-in, the Silent Piler does not cause any damage to the environment including neighboring structures and local residents through noise and vibration. The Press-in Method allows pile installation in areas where environmental disruption is strictly precluded.



Main Components of The Silent Piler



Remarks: Hydraulic hoses are omitted to show for simplifying Silent Piler pictures in all other pages.

SILENT PILER



U Piler



Z Piler



Zero Piler

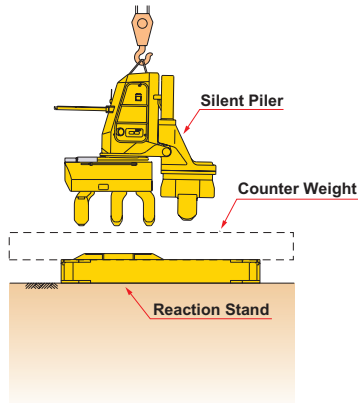


Tubular Piler

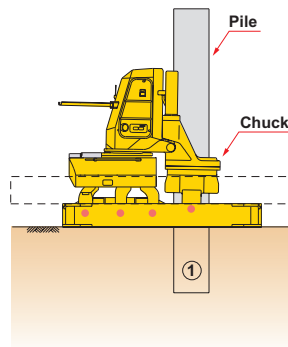
Specifications are available at Giken's corporate homepage.

Press-in Method
Initial Press-in

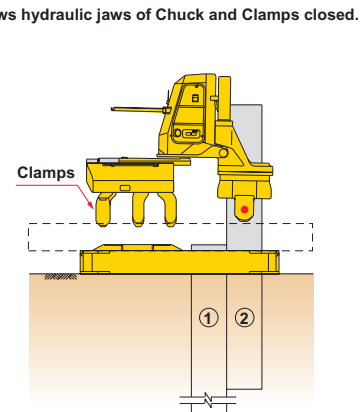
When you begin a job, there are usually no piles in the ground from which to start off. The Silent Piler is set up on a "Reaction Stand". An appropriate amount of counterweight, determined by the ground conditions and length of piles, is placed on the Reaction Stand. The first pile is then pressed-in deriving reaction force from this combined weight. As each of the initial piles is driven, the Silent Piler moves forward and clamps onto that pile, thus increasing the available reaction force. The initial press-in phase is completed when all the initial piles have been installed and the Piler has moved off the Reaction Stand onto these piles.



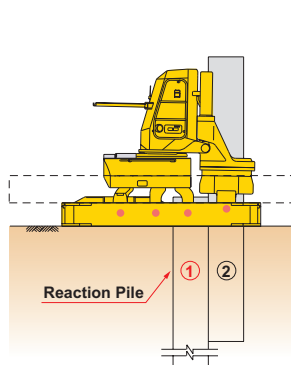
1. The Silent Piler is set up on the reaction stand with an appropriate amount of counter weight.



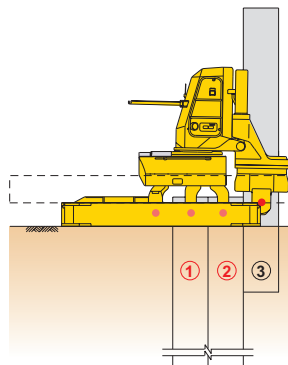
2. Pitch pile No1 into Chuck, align the pile and start pressing-in.



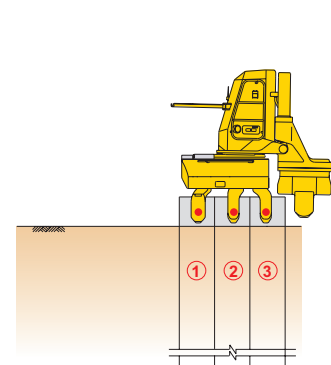
3. Prior to completion of pile No2 pressing-in, the Silent Piler self-moves (with crane support).



4. Clamp pile No1 with the reaction stand increasing available reaction force and continue pressing-in.



5. Repeat the previous procedure until pile No3 is fully installed to the specified height.



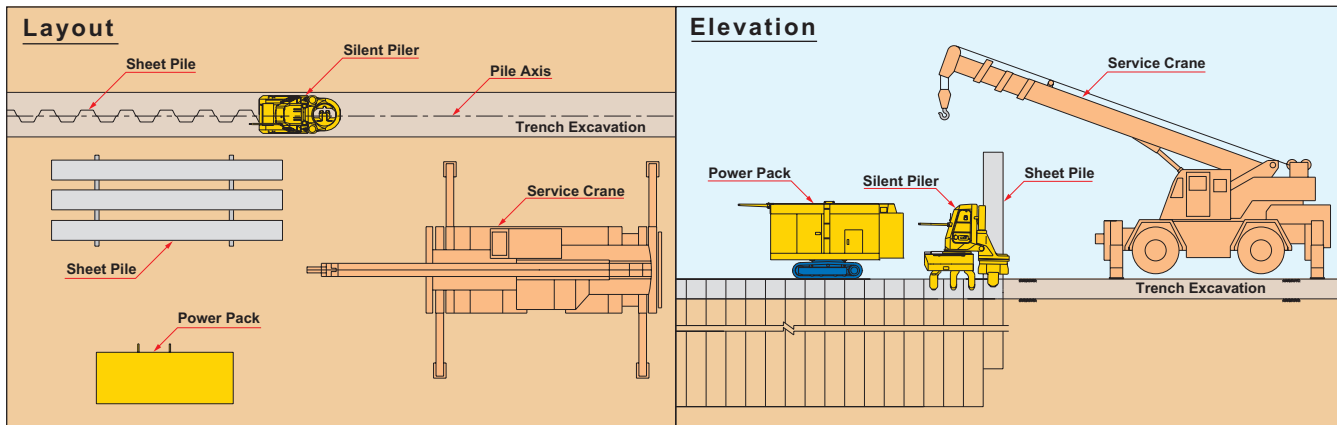
6. When initial reaction piles are installed, the Silent Piler moves off the reaction stand.

Initial Press-in (setting up and removal of the counter weight)

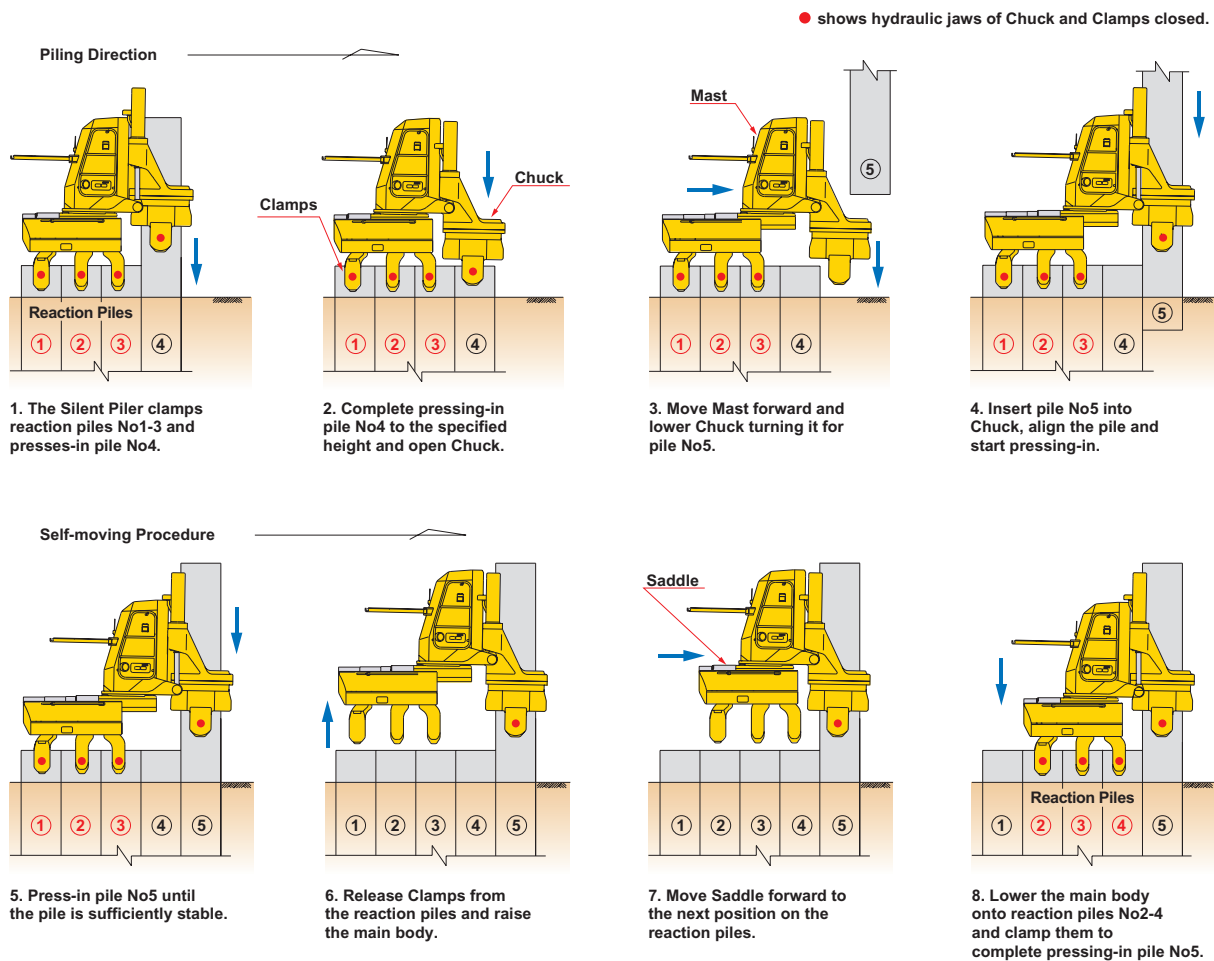

Press-in Method 3/4

Standard Equipment

Under normal working conditions, the Silent Piler can operate with just one crane to pitch piles. When a pile being pressed-in is sufficiently stable, the Silent Piler releases its clamps from the reaction piles and use this pile to raise itself and travel forwards. This **"Self-moving"** system eliminates the need for support by a crane during the piling operation. In other words, even where a site requires a large jib radius for pitching, a relatively light-weight crane can be used.

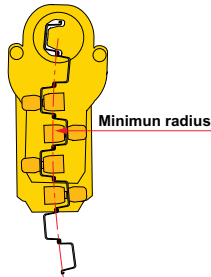


Press-in Procedure & Self-moving

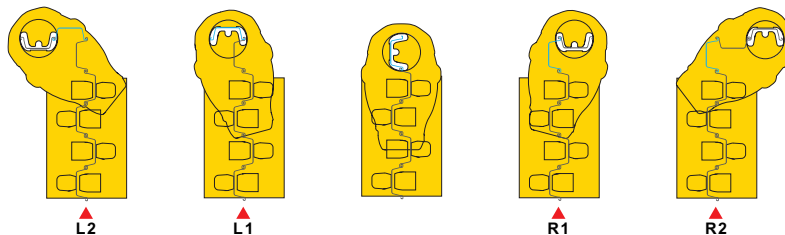


Press-in Method
Curve Installation

Through the use of the revolving mechanism of the Chuck and Mast, the Silent Piler can construct a curve or other complicated configurations. The minimum radius of the curve varies according to the pile specifications and Silent Piler model.


Corner Installation

The "Corner Four (C4)" function allows the Silent Piler to install up to two piles at right angles to and on each side of the proposed corner position. Once sufficient numbers of reaction piles are installed, a service crane simply lifts the Silent Piler off the initial line onto the new line.


Auxiliary Techniques : Water Jetting


Auxiliary techniques are primarily used to enable piles to be pressed into difficult ground conditions. Additionally, they can be utilized as a means to significantly improve productivity and hence costs, as well as optimizing the sheet pile section required. Water jetting is effected by means of either a high strength steel jetting pipe (lance) or by utilizing the newly developed high pressure flexible hose supplied from a reel system (Super Jet Reel) atop the Silent Piler, attached to the inner face of the sheet pile.


Effect of water jetting :

1. Water jetting loosens granular soils and softens cohesive soils at the pile toe locally and temporarily to reduce toe resistance.
2. Water jetting lubricates the surface of pile to reduce skin friction.

Water jetting does not

1. create large voids in the soil.
2. have any long term effects on soil strength.

For further information on **The Press-in Method**, please access <http://www.giken-smp.com/> or contact your nearest Giken office ;

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