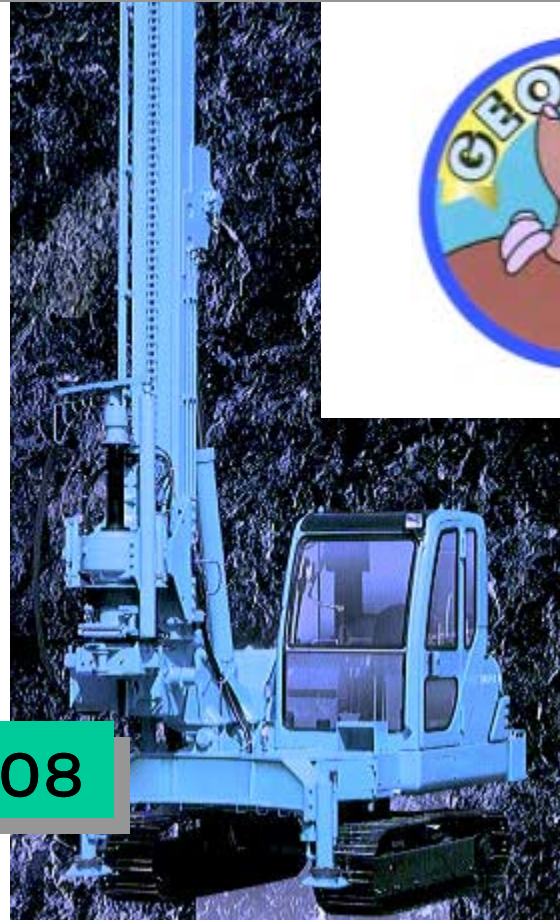


MINI-Soil stabilizing rigs *New GEOMATE series*



DHJ-08



DHJ-12

New GEOMATE series soil stabilizing rigs have come into wide use in Japan for improving [Bearing capacity] of comparatively soft soil under flats or buildings with several stories. This [GEOMATE] series are mechanically mixing a cement slurry with soil in place.

Previous models

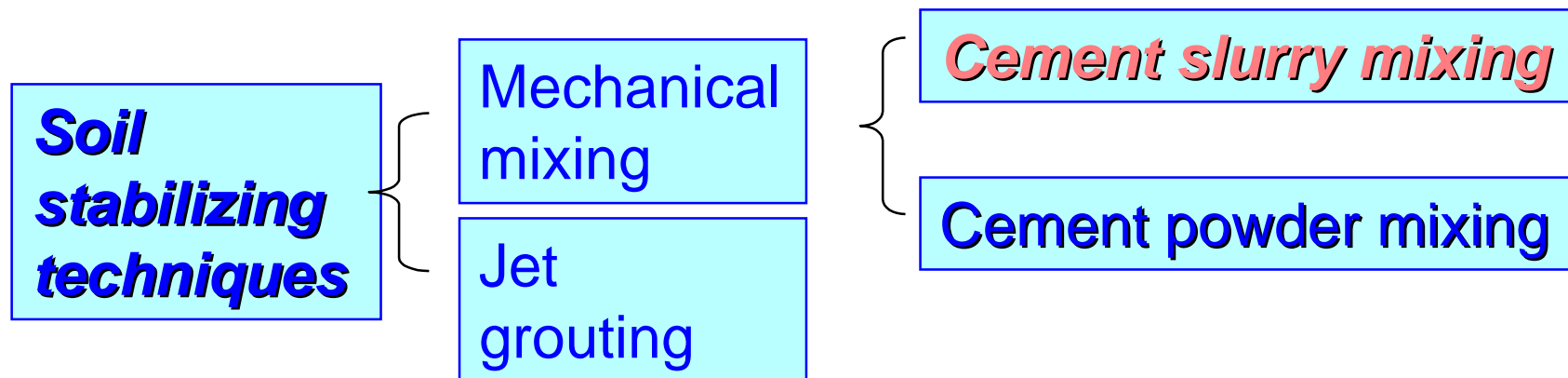


DHJ-10
'94/4~

NB70
'94/8~

These two previous models are also activating widely in Japan for various soil improving purposes.

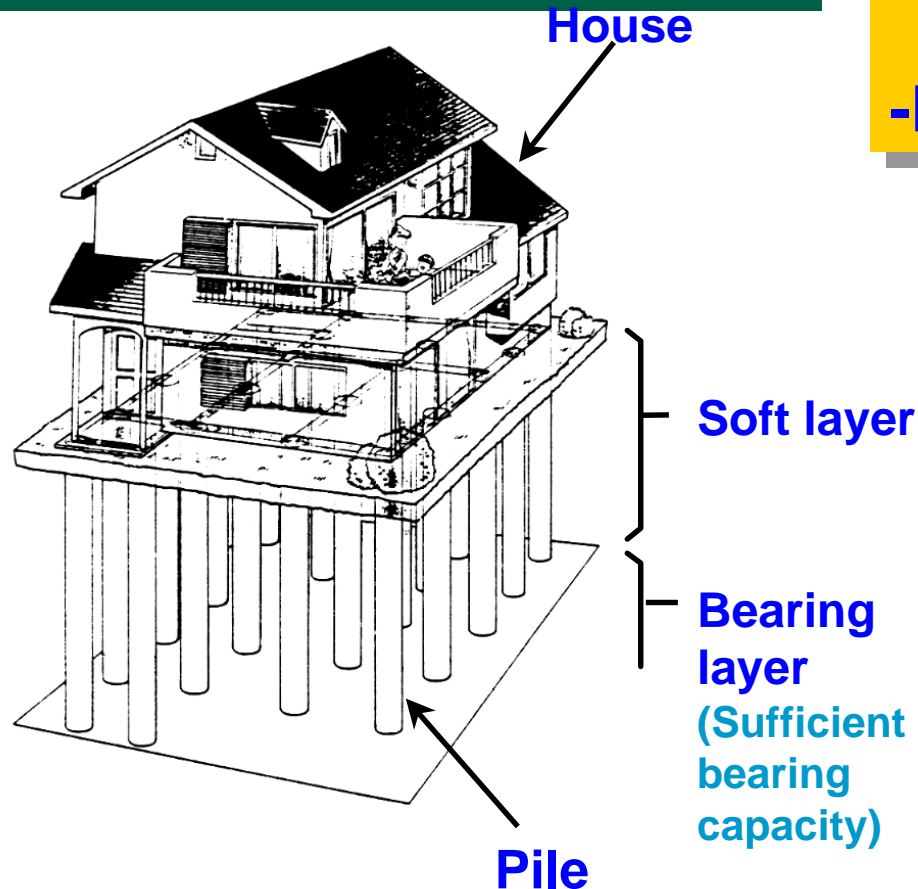
Classifications of Soil stabilizing techniques



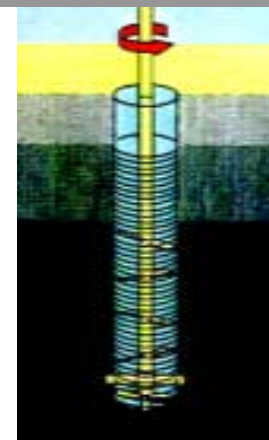
	Stabilized results (q_u ; Uni-axial compression strength)
Cement slurry mixing Cement powder mixing	4~6 kgf/cm ²
Jet grouting	10~150 kgf/cm ²

There are two techniques as Mechanical mixing and jet grouting, and mechanical mixing technique can be divided into two methods as “Cement slurry mixing and Cement powder mixing”. Generally, cement slurry is superior to powder mixing in [Little influence to the surrounding subsoil, a high uniformity in strength of the stabilized area, but troublesome in slurry preparation].

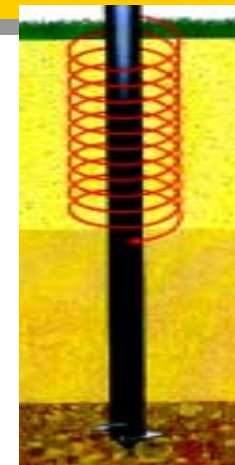
Foundation improvement for Detached house



Prevention against
-Uneven ground subsidence
-Liquefaction



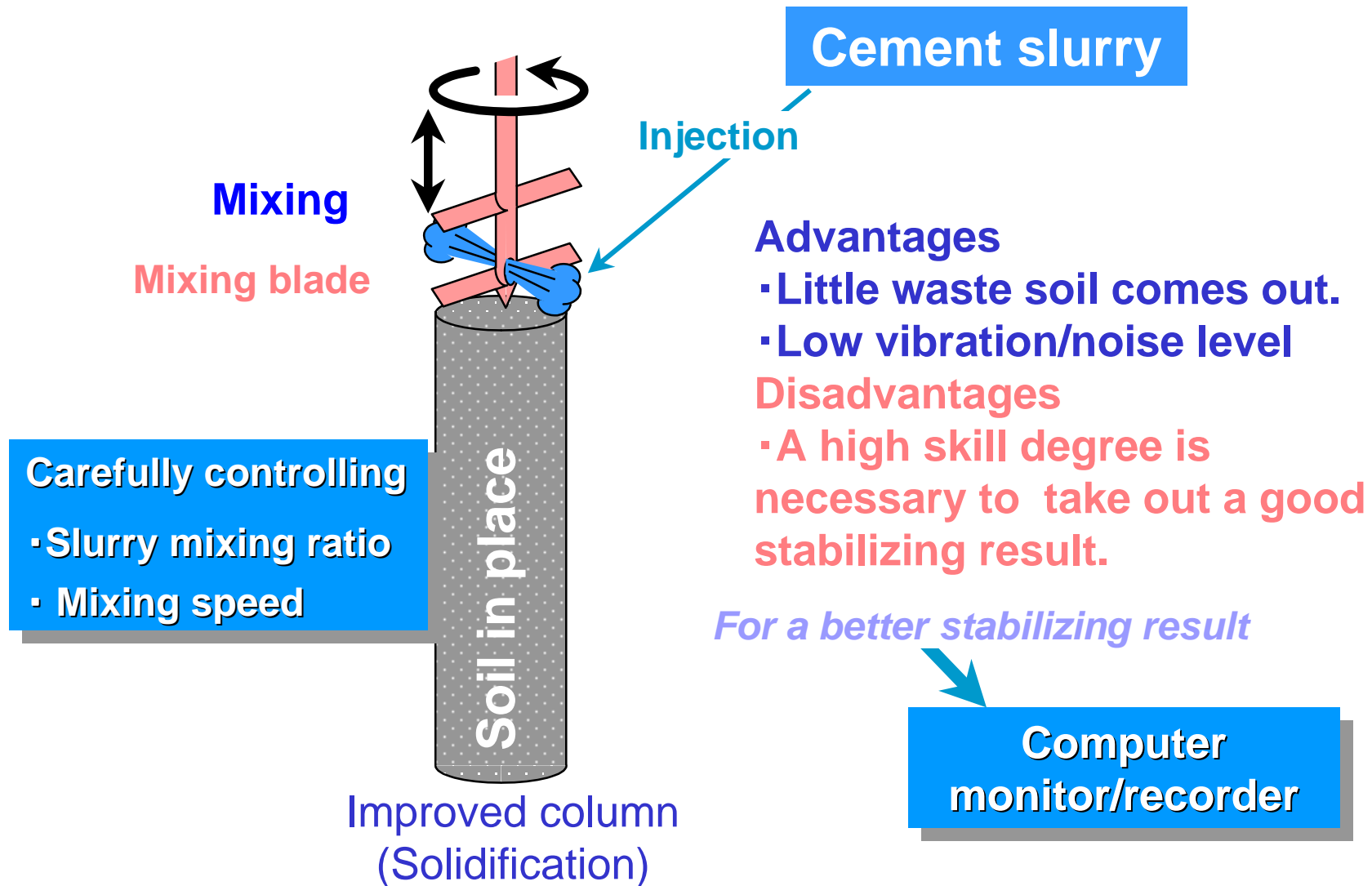
Soil stabilizing



Steel pipe insertion - pile

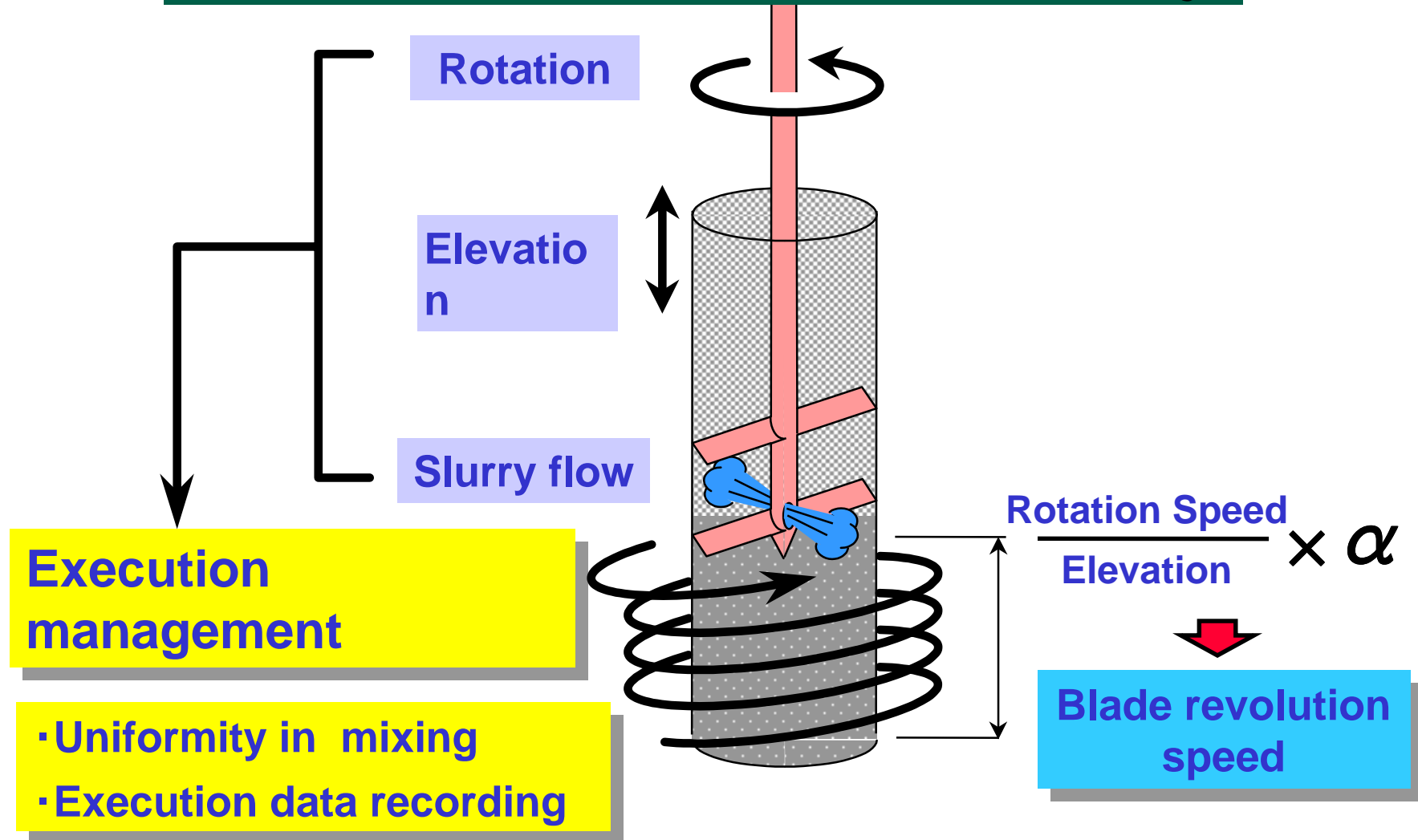
Generally, a steel pipe/concrete pile is driven into the bearing layer for supporting houses on the soft ground on which the bearing capacity is insufficient to support. [Slurry mixing] is often employed to improve better bearing capacity on such soft soil layers beneath the houses.

Advantages of Cement Slurry Mixing



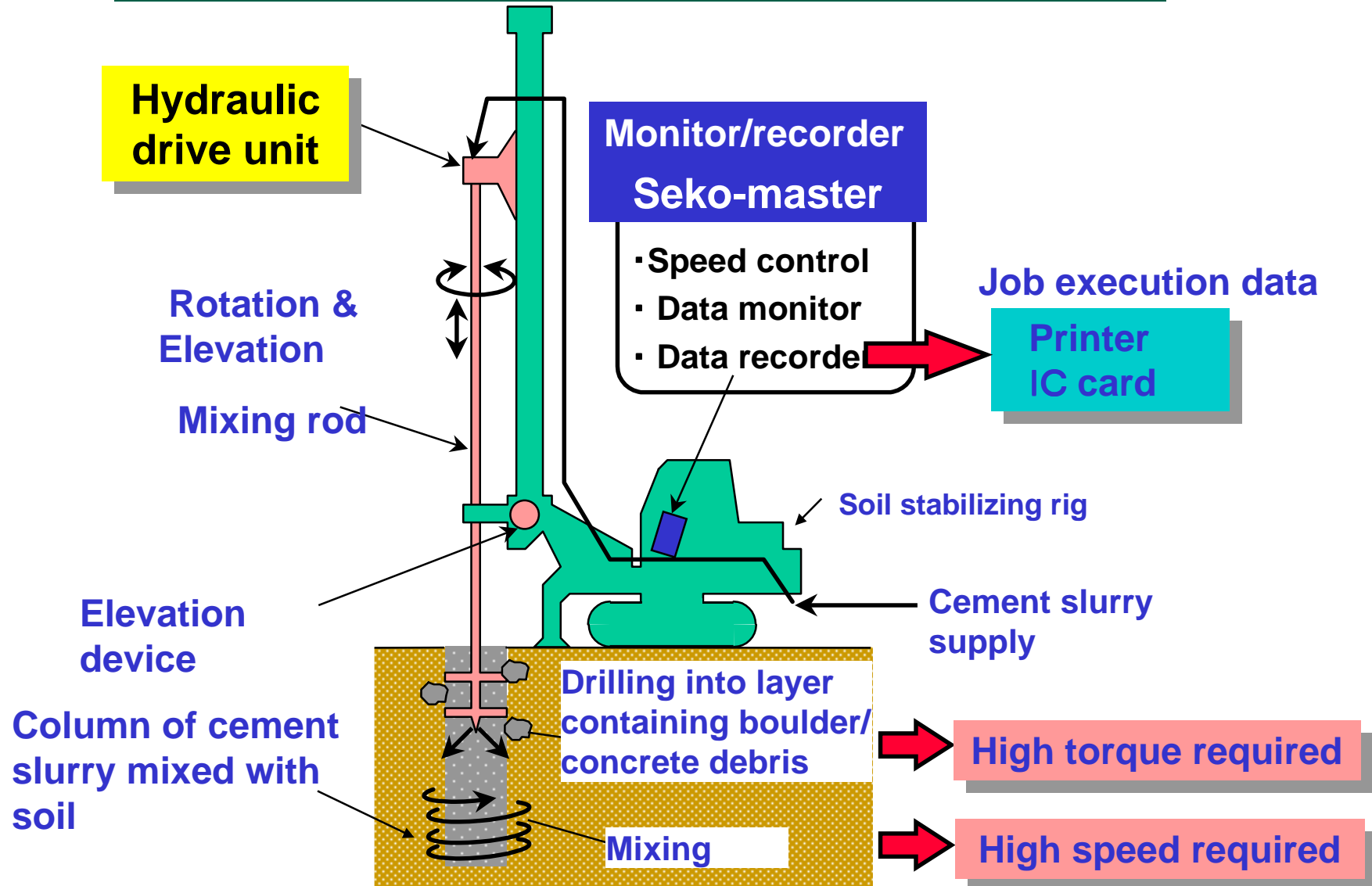
A cement slurry injected at the end of the mixing rod is mixed with soil in-place while the rod is rotated and penetrated into soil. To take out a good stabilizing result, the operator requires a high skill degree. An computer controlled monitor/recorder is employed in the operator's room for assisting its maneuverability.

Job execution management in soil stabilization with cement slurry



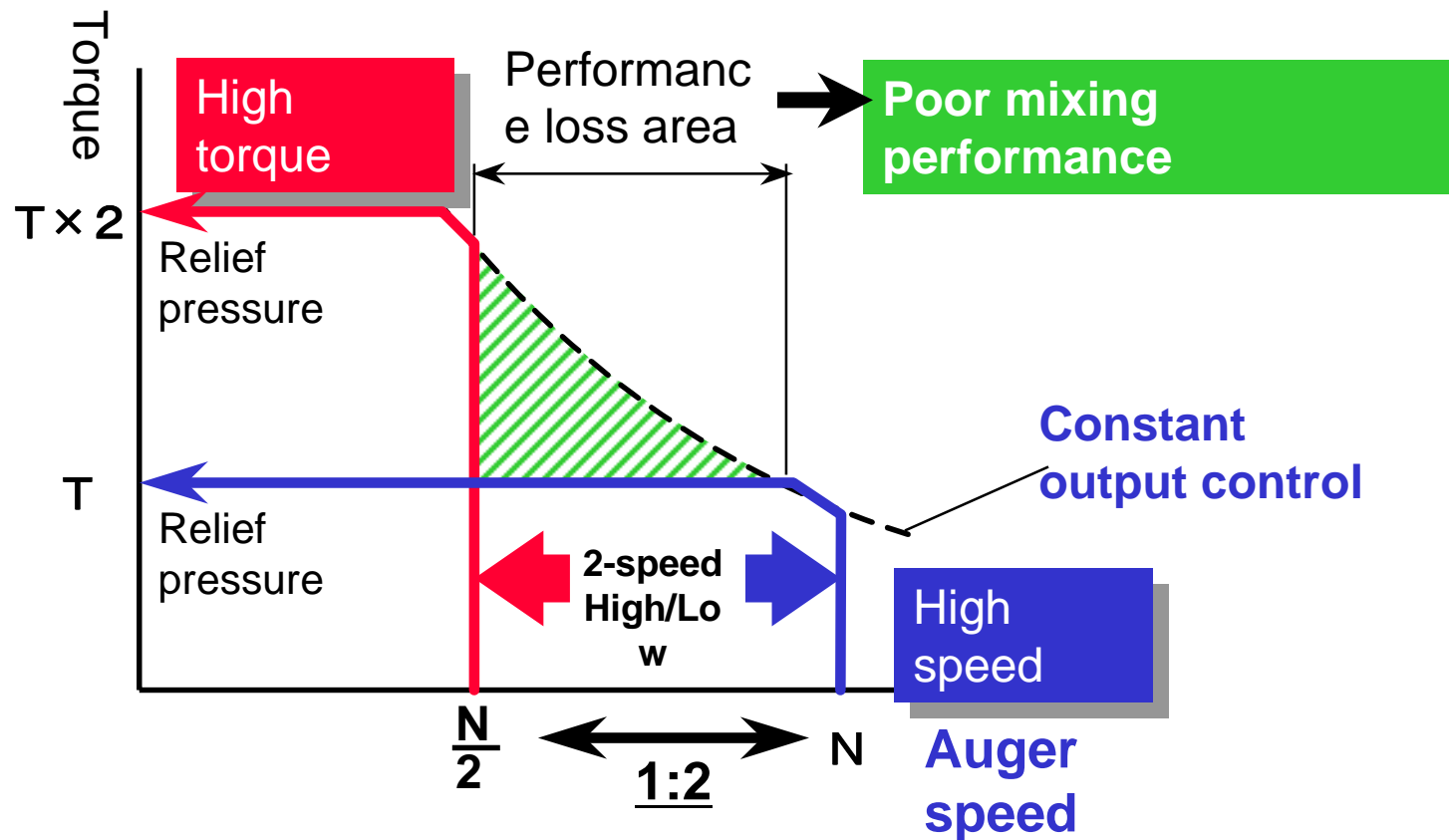
Execution data as [Rotation speed / elevation speed of mixing rod, amount of cement slurry to be supplied] are managed through the monitor in the operator's room. These data can be recorded and printed out.

Structures and functions



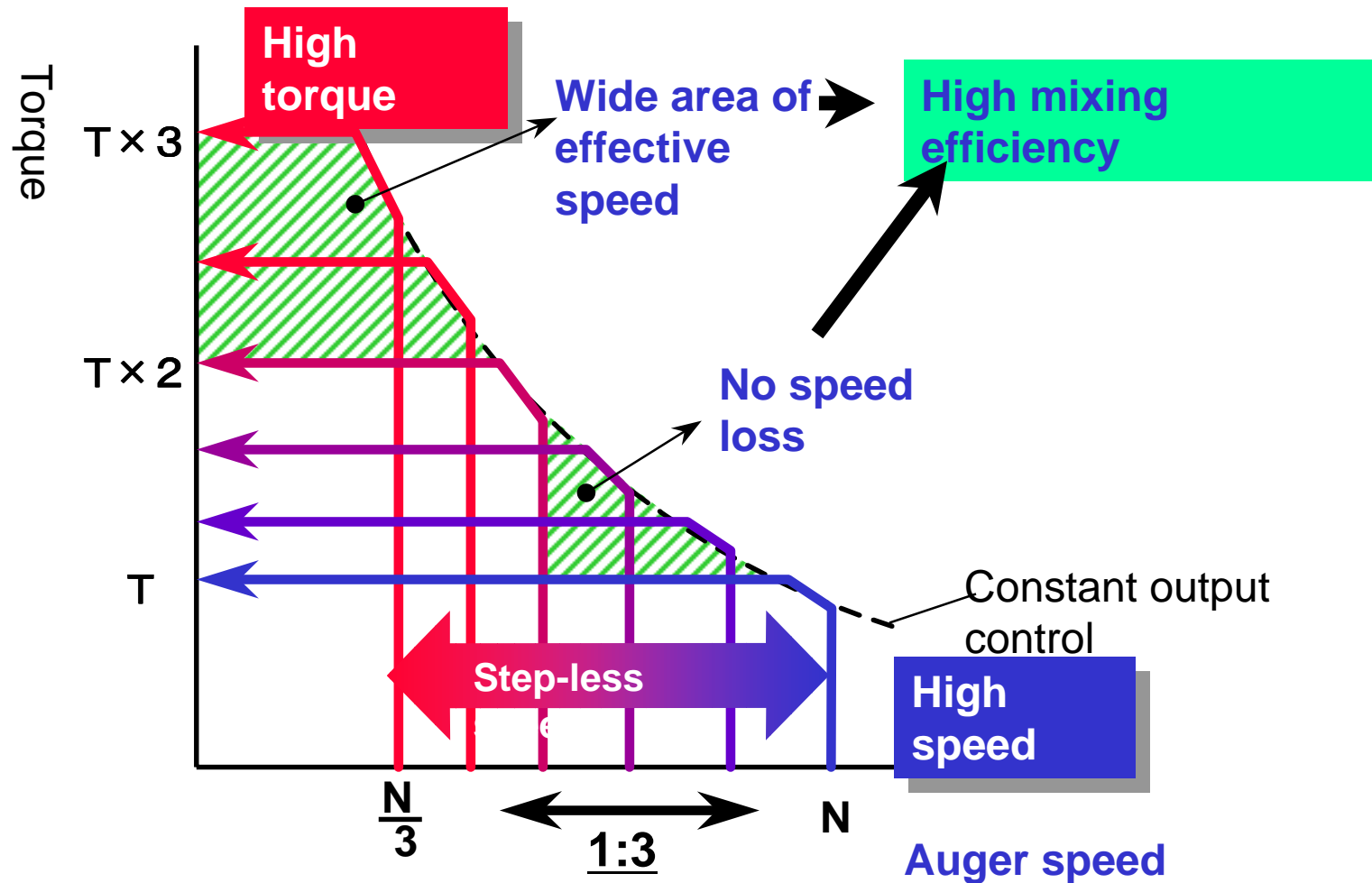
A mixing rod is rotated by a hydraulic drive unit and is elevated through an elevation device on the rig. While driving down the mixing rod, a cement slurry is injected at the lower end of the mixing rod, and is mixed with soil in place. The data as rotation speed, elevation speed and amount of cement slurry to be supplied are monitored and recorded through the monitor/recorder in the operator's room.

Conventional auger drive Performance curve [Torque – Speed]



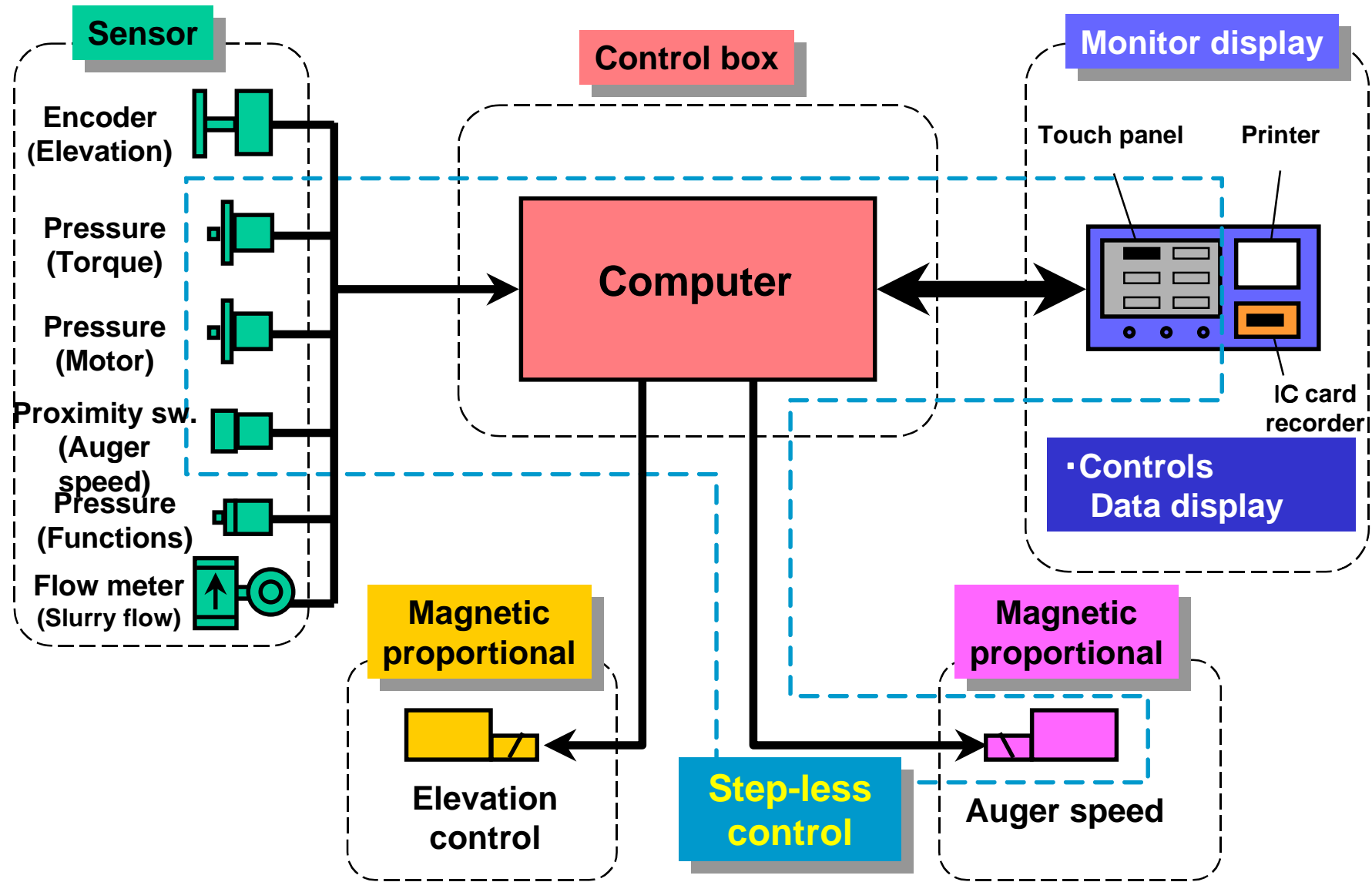
The conventional auger drive units of soil stabilizing rig has two speed control as high and low ranges which gives a poor mixing performance at the area shown by the green hatching.

GEOMATE Step-less Auger Drive Performance curve [Torque –Speed]



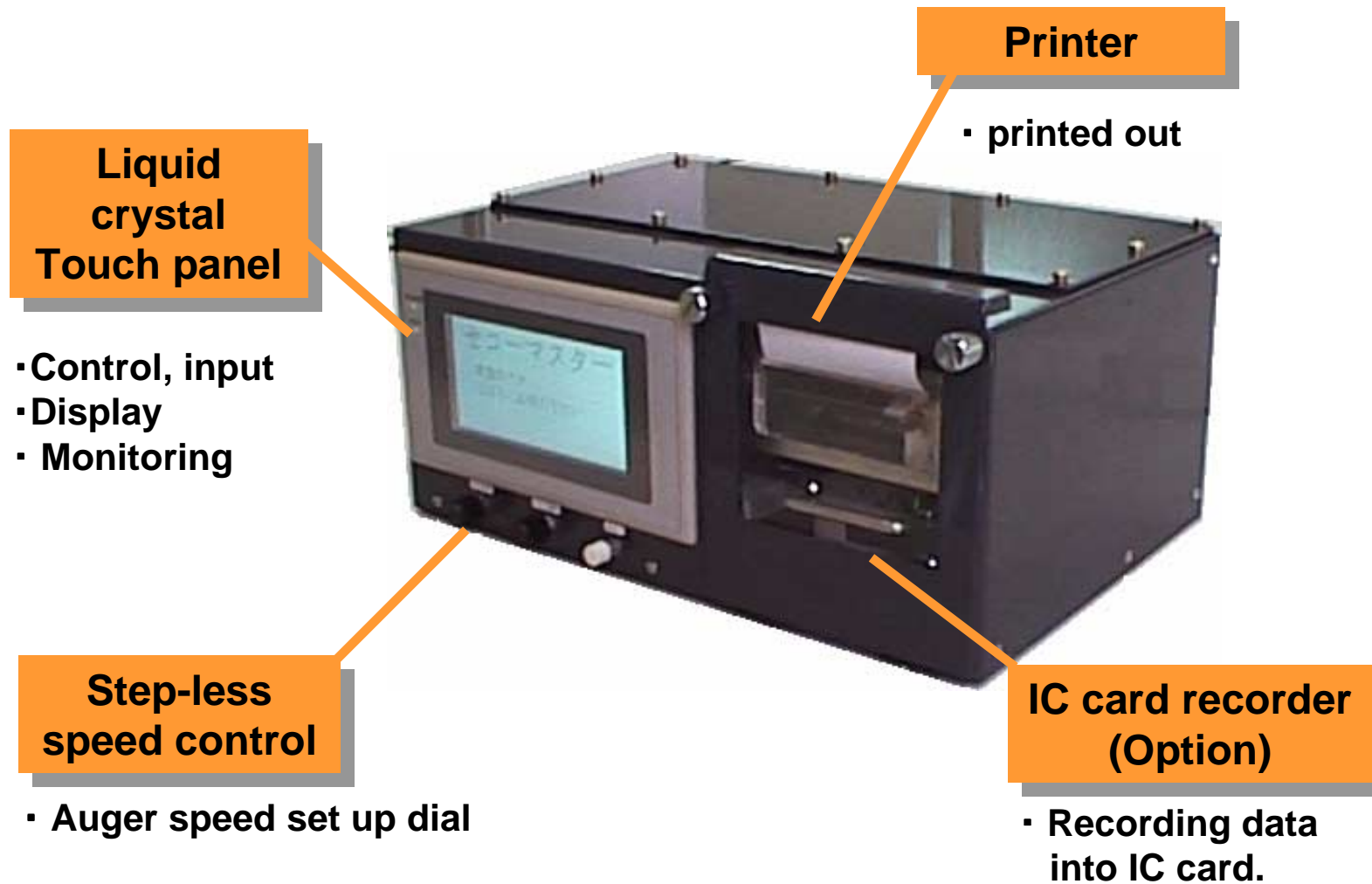
This performance curve shows GEOMATE step-less speed control which gives smooth speed –torque curve at any point from low to high speed range. This allows GEOMATE to perform various soil stabilizing jobs with a high mixing efficiency .

SEKO-MASTER [Monitor/recorder system diagram]



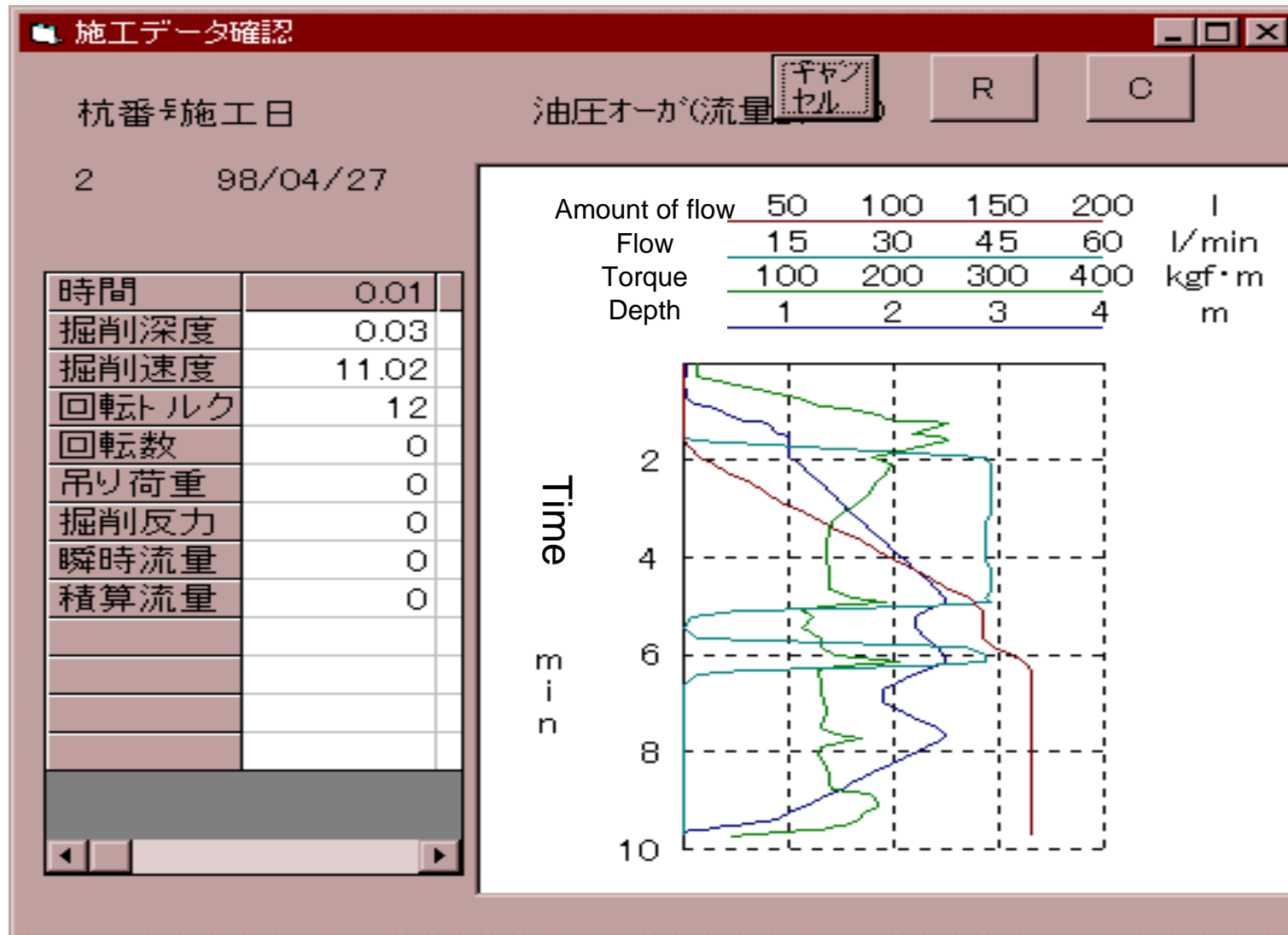
Every data detected through sensors are transmitted into the computer and [Rotation speed, elevation speed, slurry flow] are displayed on the monitor panel.

SEKO-MASTER [Monitor/recorder]



This SEKOMASTER monitor/recorder is provided in the operator's room. Every set-up data can be input to the SEKOMASTER by a finger touch on the panel. Execution data can be monitored through the panel and recorded into IC card or printed out through a printer.

SEKO-MASTER [Execution data diagram]



Job execution data displayed on the LC panel are recorded into IC card in which data can be converted into job-execution diagram (JOB PROGRESS LOG) through an office computer as shown above.

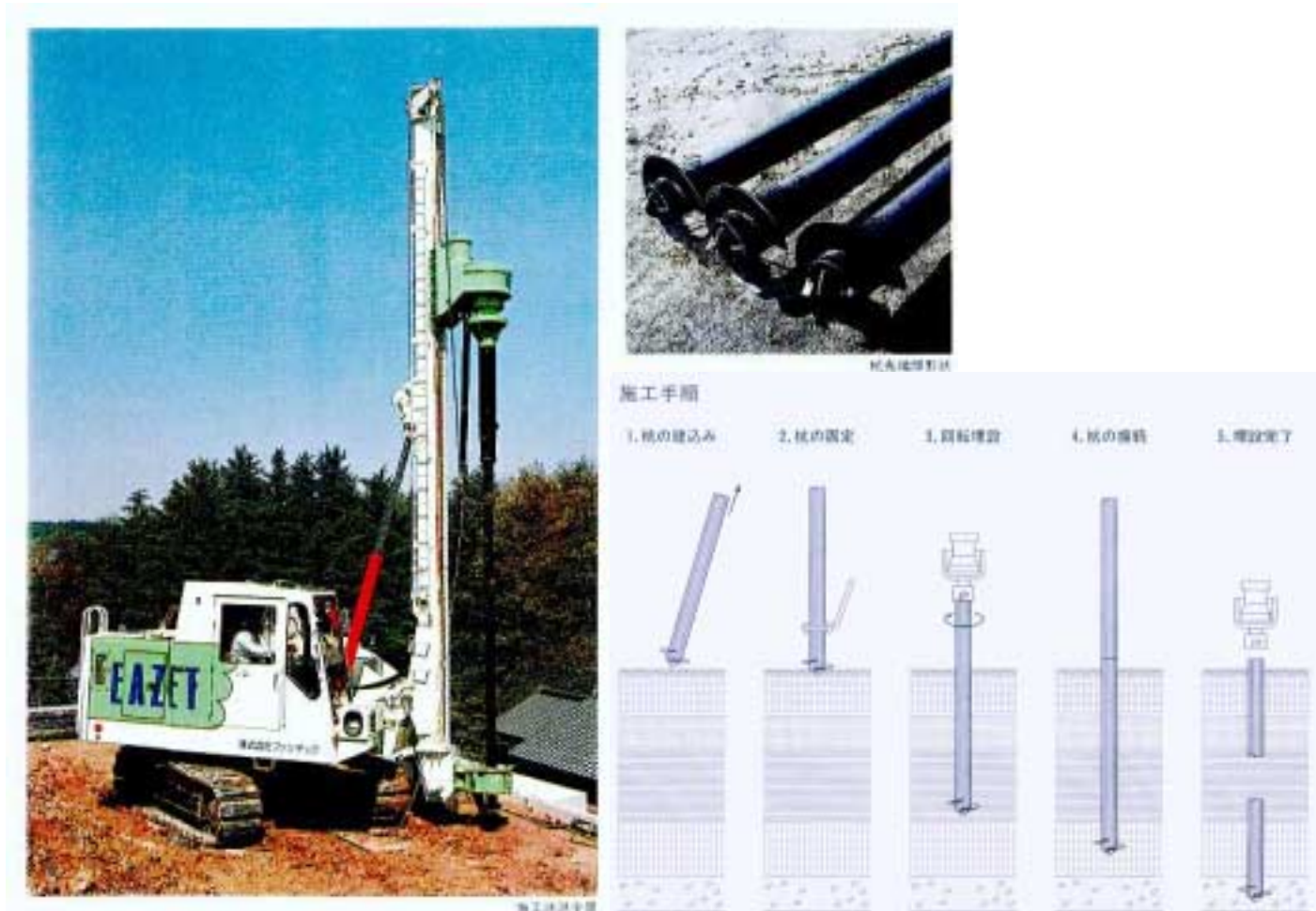
Specifications of GEOMATE series soil stabilizing rigs

Previous model

New GEOMATE series

	NB70	<u>DHJ-08</u>	DHJ-10	<u>DHJ-12</u>
Maximum torque (High/low)	405/810 kgf-m Two speeds	516~1,540 kgf-m Step-less	1,175/2,350 kgf-m Two speeds	932~2,790 kgf-m Step-less
Maximum speed (High/low)	38 / rpm Two speeds	28~83 rpm Step-less	40 /72 rpm Two speeds	37~110 rpm Step-less
Drive force	4.0 ton	5.6 ton	5.6 ton	6.0 ton
Maximum depth	8 m	8 m	11 m	11 m
Maximum diameter	φ 600 mm	φ 800 mm	φ 1000 mm	φ 1000 mm
Engine output	40.6 PS	40.6 PS	91 PS	97 PS
Operating weight	7.4 ton	8.1 ton	12.4 ton	13.4 ton

GEOMATE series for steel pipe insertion



This technique is also used for improving [Bearing capacity] of the soil beneath flats and buildings.