Fast and Failsafe Climbing Form construction method

Robot lifting jack system

Hazard

Earthquake Cyclone

Solution Purpose

Recovery

Solution Theme

Infrastructure Technology Building Technology

Technology Subject

Road Design & Construction of Resilient Building

Advantages

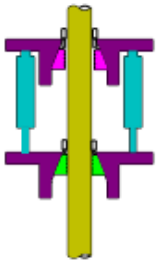
By using a computerized control system, the integrated working stage and concrete forms are moved precisely and safely.
Protecting the entire work area reduces noise, fire, and other impacts on the natural environment when

reconstruction work is performed.

Solution Illustrated

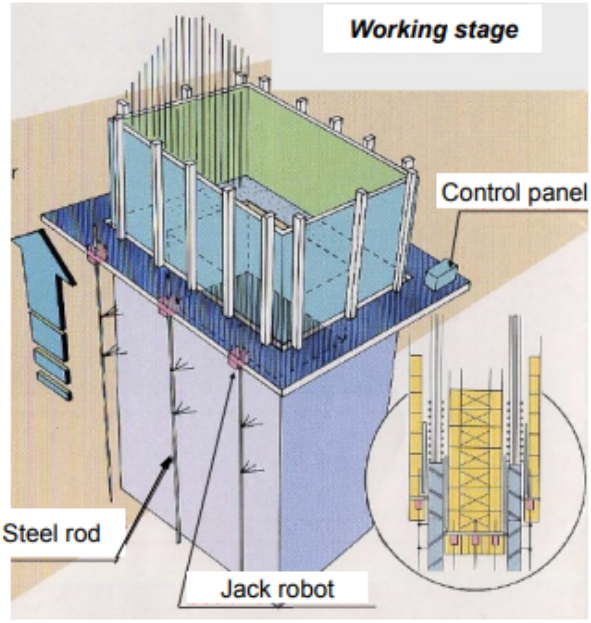
Camera

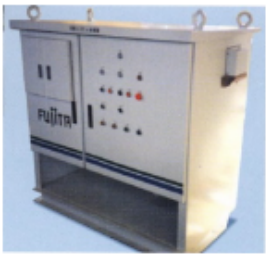
Sensor



Lock mechanism

Jack robot





Control panel

Remote monitoring system

Background

This method was developed by incorporating the features of the original large formwork construction method and sliding formwork construction method in order to make the assembly and disassembly of scaffolds and the assembly and movement of formwork safer than the conventional full scaffold construction method and sliding formwork construction method in the construction of Takahashi legs, and to save labor so that scaffolding and formwork can be performed without requiring special workers.

Exposition of the Solution

This climbing robot jack system in designed to freely ascend and descend a number of robots through centralized control, which is composed of sets of level detectors and motion controllers attached to individual hydraulic jacks climbing up and down a set of steel rods. The system is applicable to the erection of high bridge piers as well as various other structures requiring work at elevated places.

Achievements of Examples

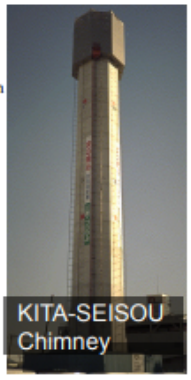
- Dohsen Bridge Lower Part Construction(2002)
- New Tomei Expressway Nakaishikigawa Bridge(Lower Works) (2003)
- Sagami Longitudinal Kushikawa Bridge Lower Part (No.1) Construction(2011)

KUSHIKAWA-KYO
Construction Site Sagamihara-shi, Kanagawa Pref.
Structure RC Hollow section
Section size 12.5m×7.5m
Height H=29.5m,38m,34m

KITA-SEISOU Chimney
Construction Site Kita-ku, Tokyo
Structure RC Hollow section
Section size 4.1m regular octagon
Height H=120m

DOHSEN-KYO
Construction Site Kamaishi-shi, Iwate Pref.
Structure SRC Hollow section
Section size 7.0m×8.1m
Height H=50m,50m,46m

NAKAISHIKIGAWA-BASHI
Construction Site Shizuoka-shi, Shizuoka Pref.
Structure RC Hollow section
Section size 10.3m×6.5m
Height H=42m, 41m



and other results available

Corporate Profile

Fujita Corporation

4-25-2 Sendagaya, Shibuya-ku Tokyo, 151-8570 Japan

Tel. : +81-3-3402-1911

E-mail : info@fujita.co.jp

Website : http://www.fujita.com