

## NEWS RELEASE

### July 1010

*Four hours from Beijing Central station to Shanghai Hongqiao for non-stopping high speed trains...*



By working with Yuci Hydraulic Co. Ltd., the largest hydraulic components maker of China, **Trio Motion** in China has developed a dedicated "Pretension steel bar synchronised position control system" for the making of foundation blocks for the high speed train projects in China. One of the national key projects is the building of high speed train between Beijing (the capital) and Shanghai (China's business centre). Trio's Euro205x *Motion Coordinator* and the CAN 8 Analogue Inputs Module (P325) has been employed on this project for synchronising control of four hydraulic cylinders.

The analogue feedback signals from P325 via CANbus and 4 analogue outputs from Euro205X have been used to control 4 proportional valve amplifiers to make the 4 axis closed loop position control system. During the pretension control process, the position errors have been kept below 1mm for all 4 cylinders, which is a breakthrough for such system. The total length of the steel bars is 80m and stroke is approximately 200mm for the whole pretension control process. As the tension is proportional to the extension distance, the precise position control of the hydraulic cylinders will ensure the tension is evenly distributed and the pretension control quality is ensured.



The 80m long steel bars are evenly placed along 27m long beds; the four hydraulic cylinders are placed in the 4 corners and all pulling along the 80m long direction.



After the pretension process, cement is used to cover all the pretensioned steel bars. Once the cement is cured, the whole block of foundation will be cut into pieces which will then be installed on the railway line.