CVI II Range

Controllers

Common controller for hand held tools and fixtured spindles.

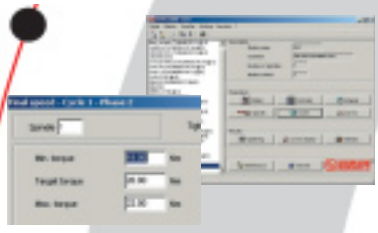
• Easy to program, same concept of programming for all controllers.

Flexibility: up to 250 cycles, 20 phases per channel allows complex applications to be easily set up.

Structured logical programming:
Applications can be programmed either from the controller key-pad, the CVIPC2000 software or via a PLC.

Flexibility

Communication



CVIPC2000 software
This software is compatible with Windows.
All CVI Range controllers can be programmed with Windows compatible CVIPC2000 software.The user-friendly options allow easy programming of cycles, download of results, graphs, & statistics, network connections via ethernet or RS422 serial networks and many more features. Modbus+, Profibus DP, DeviceNet and Interbus S fieldbus options are available (see pages 22-23).

ISaGRAF
The ISaGRAF workbench adds the functionality of a PLC to the control systems of the CVI II. This can control local line functions and simple applications.
A number of standard ISaGRAF software functions have been developed:
- **SFP B:** control ONE sequence of several cycles.
- **SFP A:** all features of SFP B, but several different sequences can be programmed and selected from a network, bar code, electronic labels on a part, PLC etc. In addition it is possible to display on a PC HMI (Human/Machine Interface):
  • Status of the sequence (OK/NOK, how many completed/remaining)
  • Picture components to be assembled

Process Management

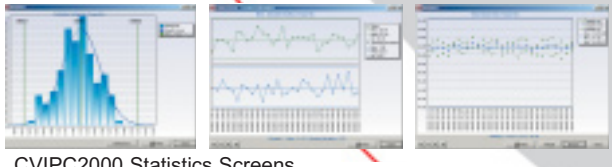
- **Positioning system:** The position of the tool is detected by absolute angle encoders. The cycle within the sequence is then automatically selected based on the tool position.

Quality Assurance
The large controller memory ensures traceability by allowing recall of tightening results: final torque, final angle, torque rate, date, time, bar code, tightening curves, etc.
Traceability is optimized by the CVI communication and large memory - up to 11600 results stored. Torque, angle, torque rate, date, time, bar code, curve and more can be sent via network communication.

Traceability

Statistics

Statistics
The statistics software will calculate statistics for torque or angle results.
These calculations are performed under one of the current standards: (ISO, CNOMO, NF).
Results displayed on CVI II and TWINCVI II:
- Statistics report with CP, CPK, CAM.
- Display of scatter diagram, histogram, control chart, mean, range, standard deviation.
- Printing of full statistics report.



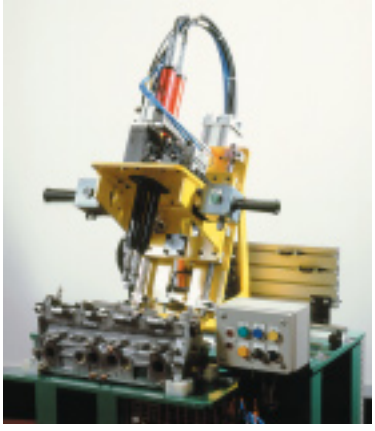
CVIPC2000 Statistics Screens

Modularity
All controllers are available in a modular version.
The modules can be installed in a cabinet to drive a multi-spindle machine.
MULTICVI system can drive up to 32 spindles.

Modularity

From the simplest to the most advanced

Electric Transducerized EB Tools



Quality of tightening

OK / Not OK signals: The quality of each assembly is reported by LED's on the tool and external signals to the controlled process system of the production line (PLC).
- All tools have built-in leading edge transducers.
- Joint quality is maintained by angle monitoring/control and digital communication on all controllers.

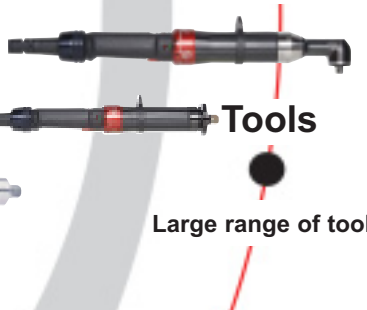
Tightening strategies to meet the joint specification
- Torque + angle monitoring
- Angle + torque monitoring
- Angle + torque + torque rate
- Prevailing torque
- Yield point
- Detection of the plastic zone area of joint
- Additional torque + angle transducers

Continuous process monitoring by current control

Ergonomics & operator comfort

Ergonomic features have been designed in with involvement from our customers at every stage.

Nutrunners up to 400 Nm (294 ft lbs)
- High power to weight ratio tools, one of the lightest on the market
- CP's special manufacture & treatment of the angle head components gives market leading durability.
- 6 OK or NOK LED's on the tool handle



Fixtured Spindles up to 1900 Nm (1400 ft lbs)
- High speed tools reduce tightening cycle time.
- In-line and 90° models with special designs available for limited access.
- High durability - actual customer tools exceeded 4,500,000 cycles

Tools

Large range of tools

Independent calibration of tools, no need to re-calibrate controllers

The tool-integrated memory contains the transducer features, sensitivity, nominal load and counters. These counters can show when to schedule calibration or to perform preventative maintenance on the tool.

Productivity Process

High Reliability, Low Maintenance tools
- Brushless AC motor: virtually maintenance free
- Resolver: smooth angle control at any speed

Low maintenance costs

Automatic self diagnosis with user friendly messages
Reduction of assembly inspection procedures

BRD 'Backup Rescue Device'

The BRD is an external memory device which is used to back up and store the programs and data of the CVIS and CVI range.