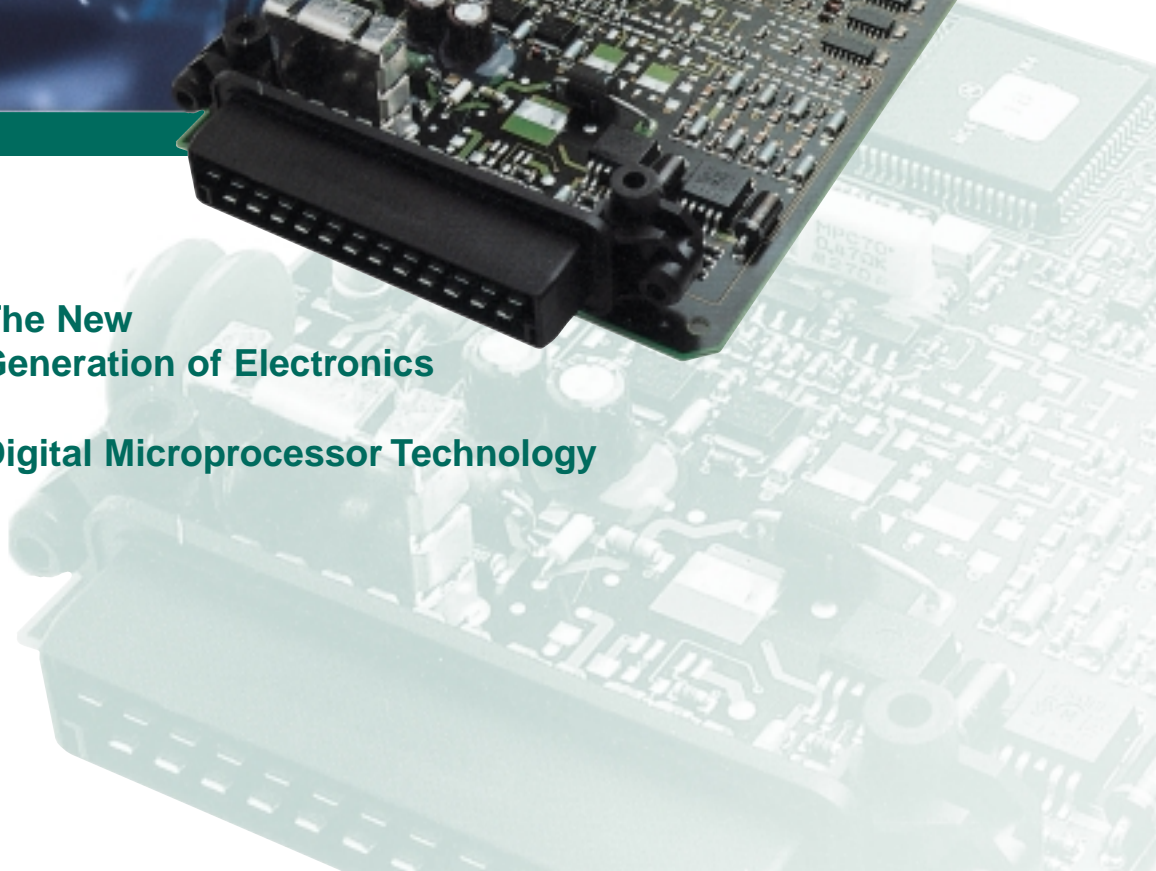


LINTRONIC



**The New
Generation of Electronics**

Digital Microprocessor Technology



Knowledge and expertise



Linde – the pioneer
Linde products have been leaders in the field of mobile hydraulics for years.

Our customers rely on our know-how. Many thousand pieces of equipment have been equipped with Linde technology.

Linde electronics engineers are masters of their craft – whether it's a matter of improved power utilization, or the best possible interaction among the components in the system as a whole, or user friendliness and safety.

The interaction of Linde's hydraulic and electronic components goes far beyond pump and diesel management – it opens up the option of managing the entire vehicle or piece of equipment:

Hydraulic components + electronic components from Linde = complete vehicle management through the complete Linde system.

The electronic load-limiter controls the whole range of load on the diesel engine. The maximum power of the diesel engine is available at any instant during its cycle. This will maximize the engine's performance while minimizing oversizing of the engine.

Linde offers electronic systems for open and closed loop hydraulic applications.

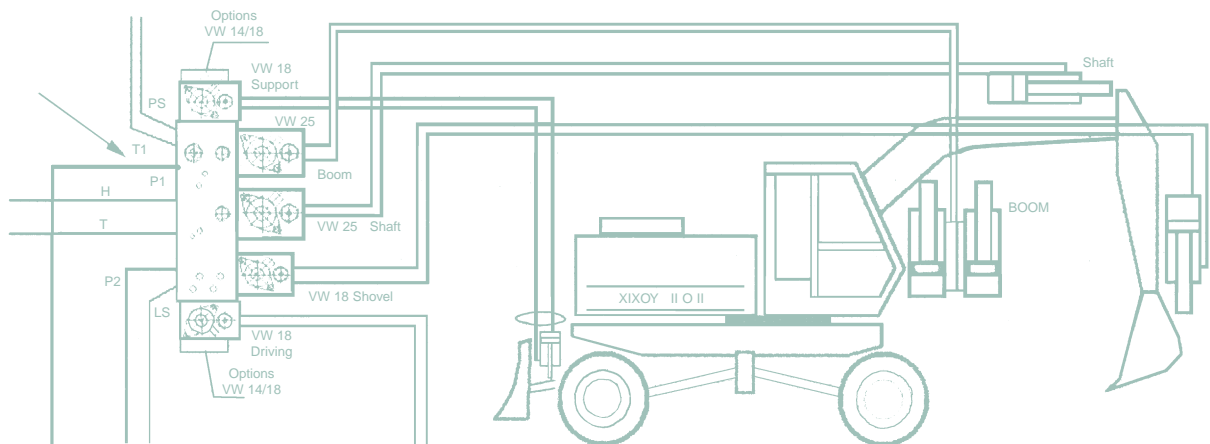


Become a world market leader with Linde hydraulics and electronics

Linde – the pioneer in mobile hydraulics – discovered and perfected hydrostatics as the ideal type of actuation for mobile machinery. Since 1959, Linde has equipped more than two million vehicles in the fields of

- Construction equipment
- Agricultural machinery
- Forestry equipment
- Municipal vehicles
- Materials-handling technology

with hydrostatic driving and working actuation systems. The use of this actuating system in our own fork lift trucks made Linde the **world market leader!** And our **electronics** played an important part in doing that.



Application Areas



Electronic control unit for open loops

CEB-14

Electronic control unit CEB-14 for open loop hydraulic systems with load-sensing and mechanical diesel speed control

System Description

The **CEB-14** electronic control unit includes the following functions:

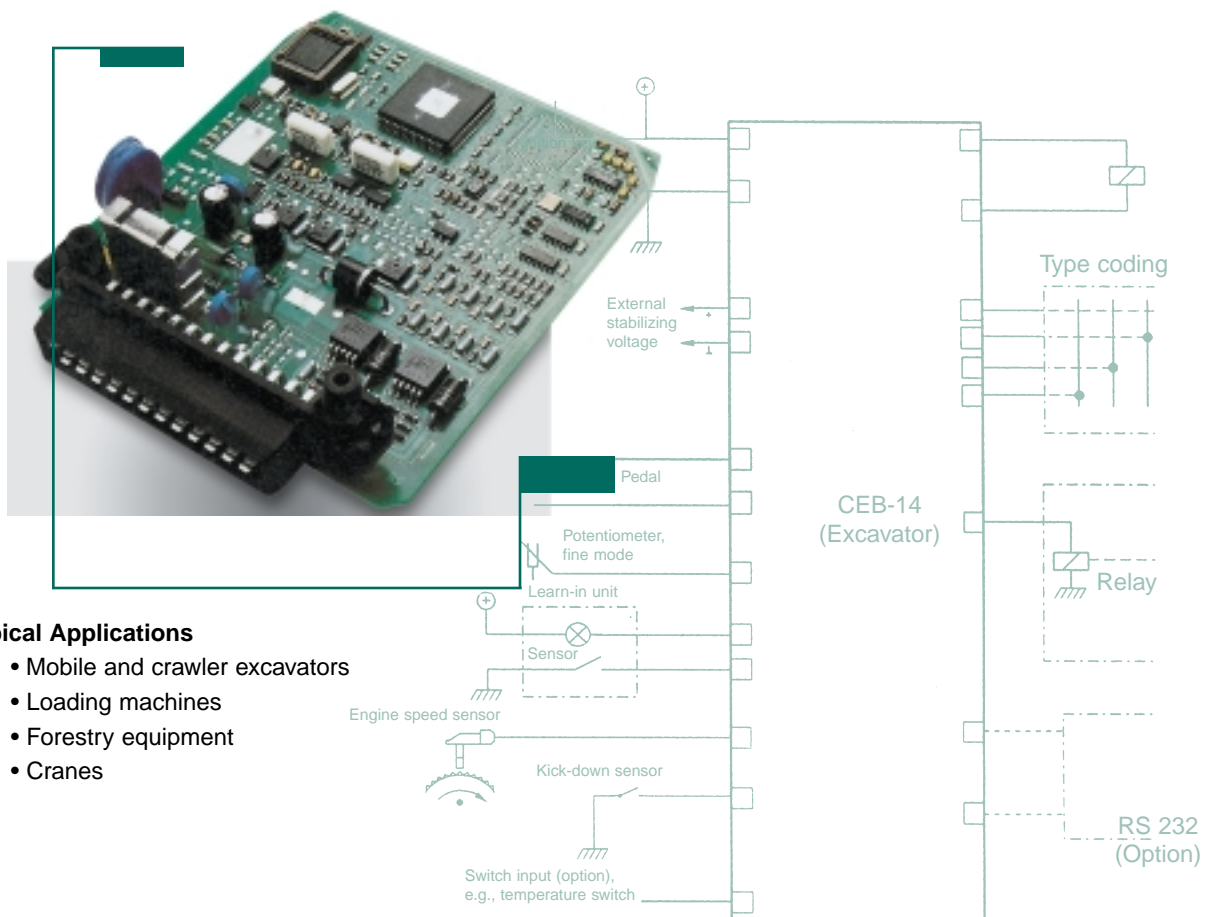
- Digital load-limit sensing control for working and driving, with mechanical diesel speed control
- Fine control function (fine mode)
- Semi-automatic equalization of the speed control device (learn-in function) for startup and service
- Diagnostics and fault display for component malfunctions
- Type programming via wiring harness bridges, coverage of a complete product line (up to 16 diesel engines with different sets of parameters)

Function Description

- Diesel speed measurement
- Diesel speed control
- Load-limit sensing control
- Fine mode setting
- Mode lock-on in idling speed range
- Driving
- Learn-in function

Components

- CEB-14 electronics box
- Mechanical diesel speed control, including set-point potentiometer
- Diesel engine speed sensor
- Fine mode potentiometer
- Accelerator pedal pressure switch (control pressure)
- Learn-in button with control lamp
- Load-limit sensing control [GLR] relay
- Kickdown sensor (integrated into hand lever)



Typical Applications

- Mobile and crawler excavators
- Loading machines
- Forestry equipment
- Cranes

Strict testing procedures for Linde electronic equipment



Strict test procedures are indispensable in ensuring the proper and safe functioning of the electronic components

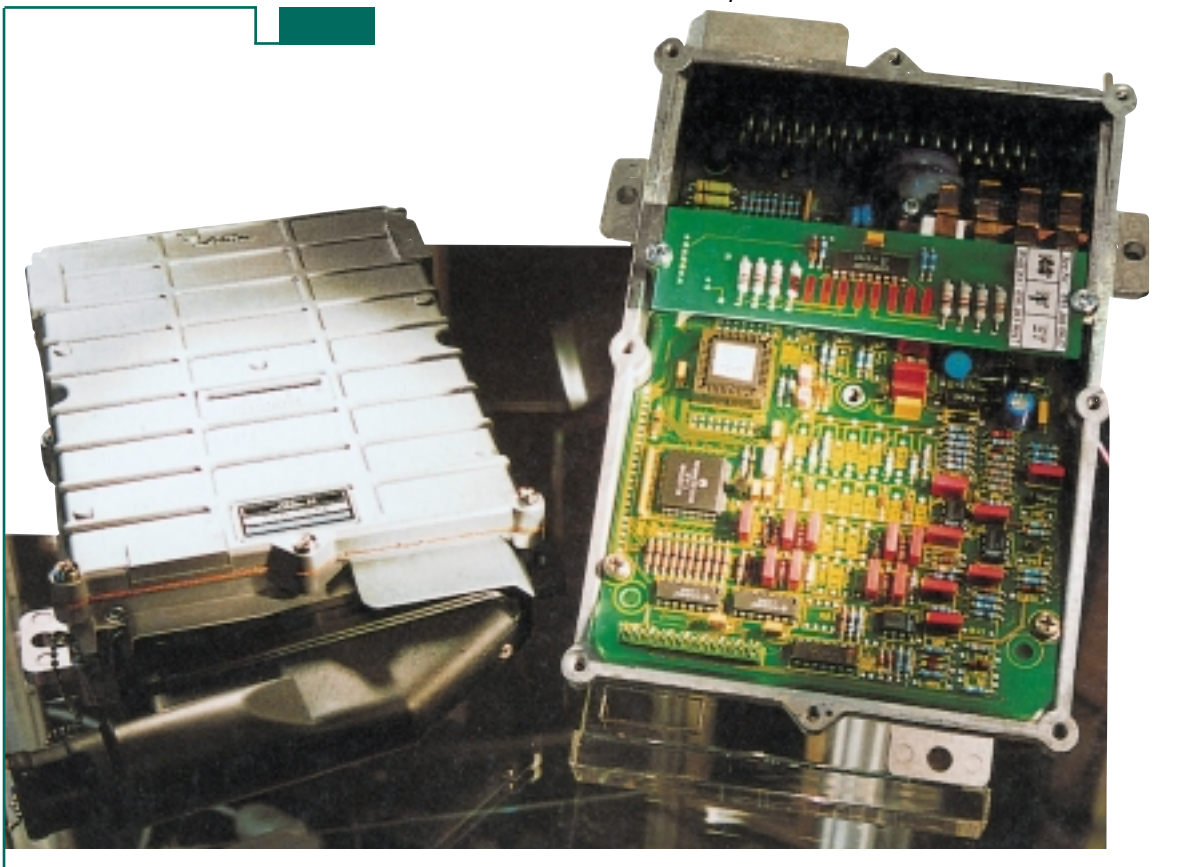
This is important in the case of well-proven components, but it is absolutely essential with electronic control units. The electronic brain contains the widest possible variety of information concerning its surroundings and transmits appropriate instructions in return.

In conjunction with that, the electronic control unit is dependent on reliable information from the outside in order to give out correct and reliable instructions.

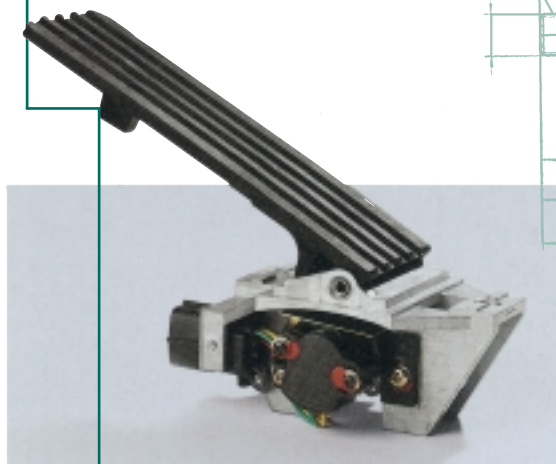
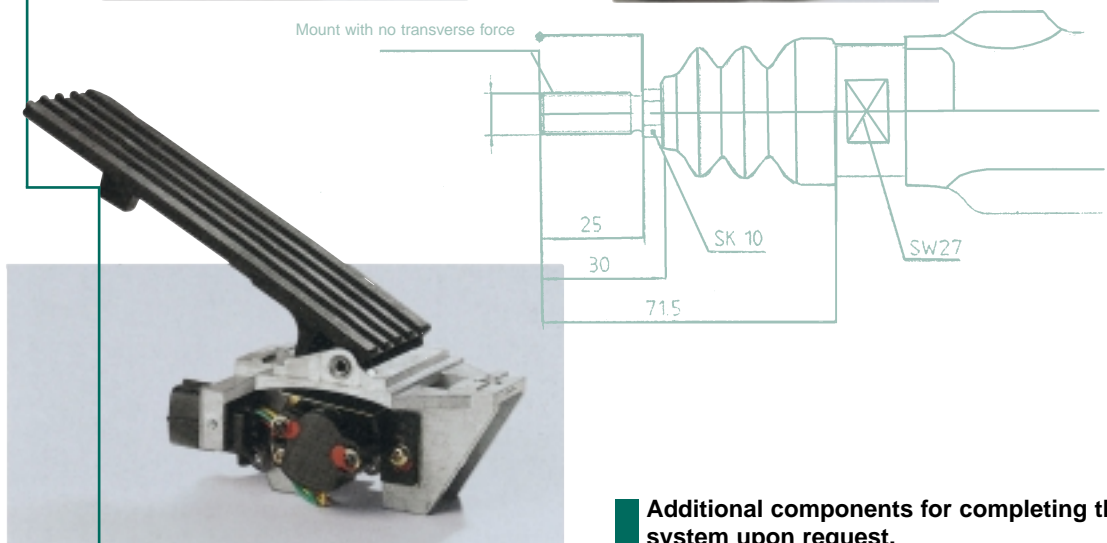
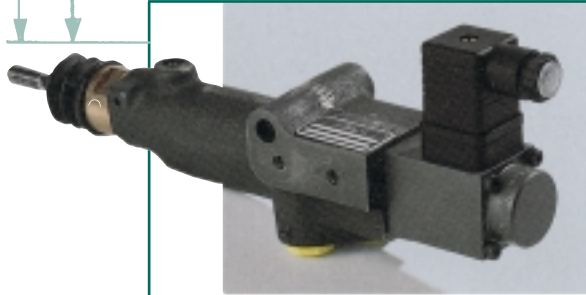
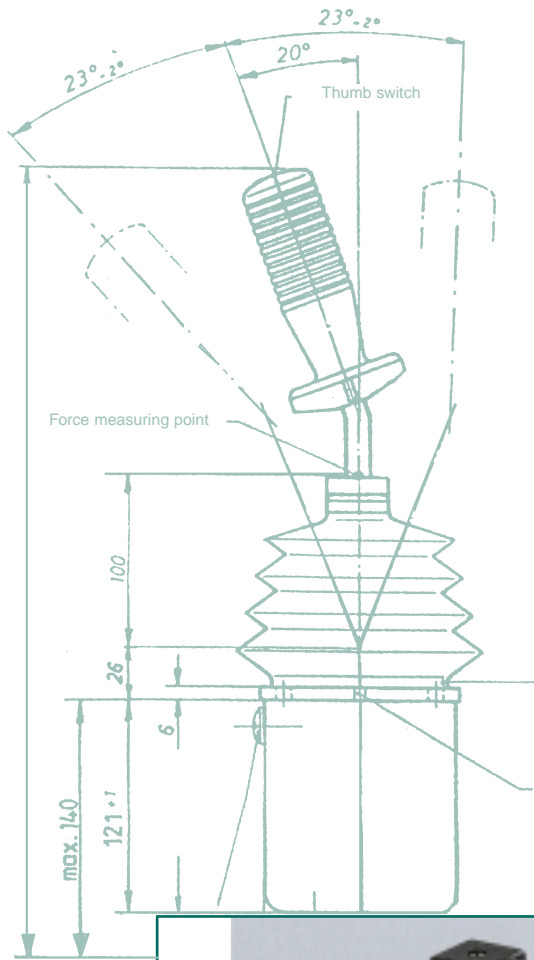
Linde observes all of the relevant regulations that result in extensive testing procedures.

Linde conducts the following tests for reliability and safety:

- Mechanical tests
- Electronic tests
- Function tests
- Safety tests
- System tests
- Field tests
- The following tests are carried out continuously during production of the system components:
 - *Visual inspection, IC test, check-sum test, run-in test*
 - *Visual inspections (100%) following assembly/installation of the electronic components and following the soldering operation*



Peripheral components *LINDE*



Additional components for completing the system upon request.

Here is how to reach us

directly

Would you like additional information concerning Linde electronics?
Talk with us! We're always there for you!

Direct route to Linde Hydraulics and Electronics

You can reach us

- **By telephone** 330-533-6801 (switchboard)
- **By fax** 330-533-8383
- **By e-mail** info@lindeamerica.com
- **By internet** <http://www.lindeamerica.com>
- **By mail**
Linde Hydraulics Corp.
5089 W. Western Reserve Rd.
P.O. Box 82
Canfield, Ohio 44406



THE NEW GENERATION OF ELECTRONICS



Linde AG, Werksgruppe Flurförderzeuge und Hydraulik
[Industrial Trucks and Hydraulics Division],
Plant 2, Aschaffenburg-Nilkheim

Linde AG
Werksgruppe Flurförderzeuge
und Hydraulik
Postfach 62.D-3736 Aschaffenburg
Telefon: (06021) 9-0
Telefax: (06021) 99-179

Linde Hydraulics Corp.
P.O. Box 82
5089 W. Western Reserve Road
Canfield
OH 44406
Phone (330) 533-6801
Fax (330) 533-8383
www.lindeamerica.com