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 advilable at any instant during its cycle. This will maximize the engine's performance while minimizing oversizing of the engine.

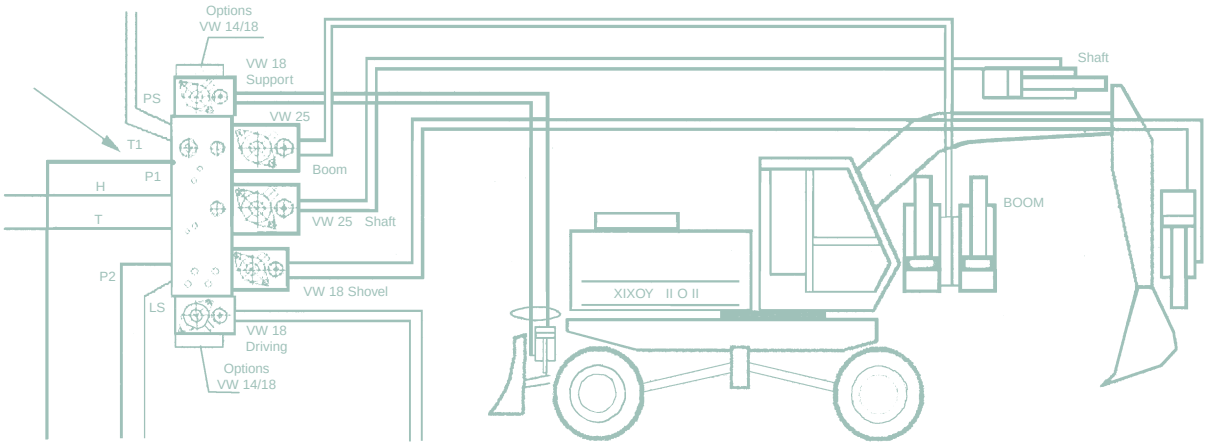
Linde offers electronic systems for open and closed loop hydraulic applications.

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**

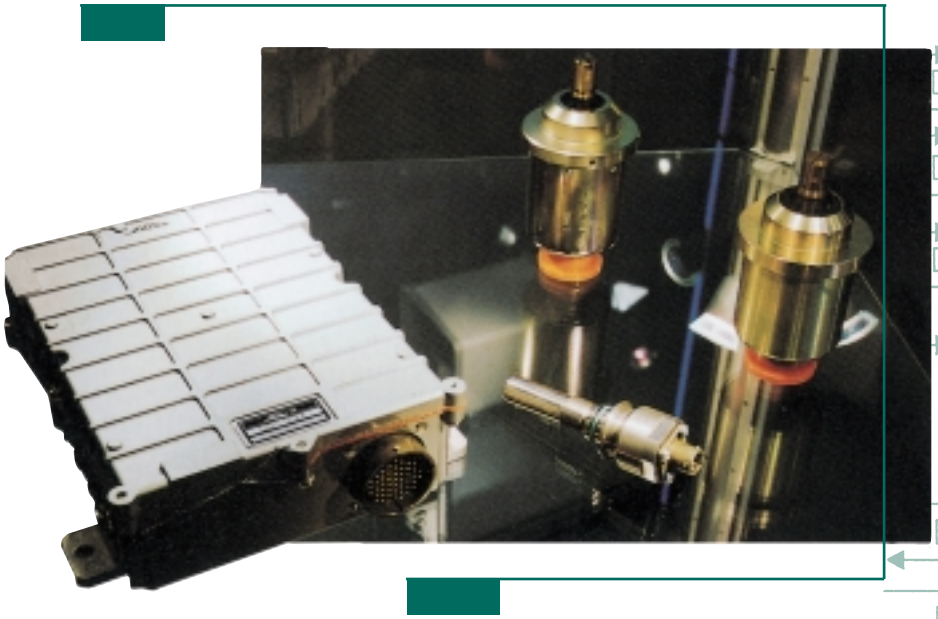
with hydrostatic driving and working actuation systems. The use of this actuating system in our own fork lift trucks made Linde the **world market leader!** And our **electronics** played an important part in doing that.

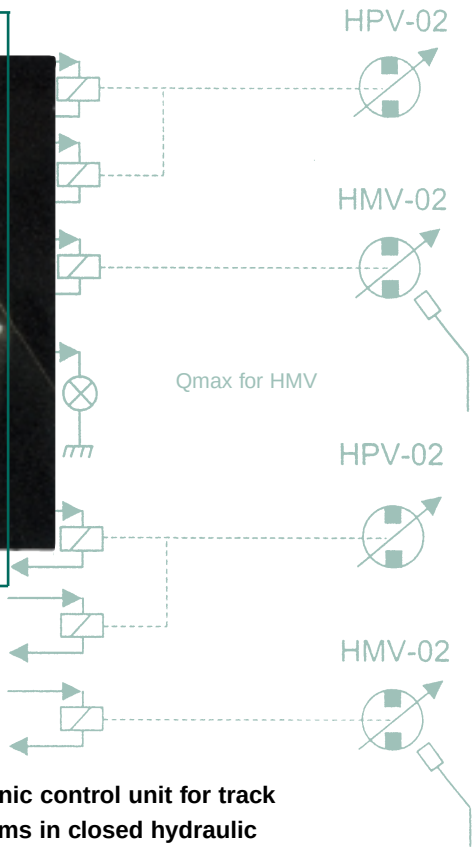


Application Areas

Electronic track control

CEP-12





CEP-12 electronic track control with mechanical/electronic diesel speed control and four-quadrant driving transmitter

System description

Two-branch driving actuation systems (e.g., for bulldozers or loading tractors) can be controlled with the **CEP-12** electronic control unit. Driving and steering functions can be carried out with different transmitter configurations: four-quadrant transmitter *(driving/steering transmitter), driving lever in combination with two-pedal steering, driving pedal in combination with steering levers. The electronics box includes the following:*

Functional characteristics

- Driving
- Zone spreading / load switching
- Steering
- Turning on one spot
- Pressing regulation
- Synchronization control
- Speed limiting
- Magnetic triggering of stopping brakes

Linde CEP-12 electronic control unit for track drive actuation systems in closed hydraulic loops

1. Basic version / components

- CEP-12 electronics box
- Mechanical/electrical diesel speed control
  Alternative: potentiometer sensor
- Diesel engine speed sensor
- Driving transmitter
- Load-switching button

2. Options

- Engine speed sensor 1*
- Temperature sensors 2*
  (cooling water / hydraulic oil)

Footnotes:

1* Integrated into the hydromotor

2* Alternative pressures sensors available

Strict testing procedures for Linde electronic equipment

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

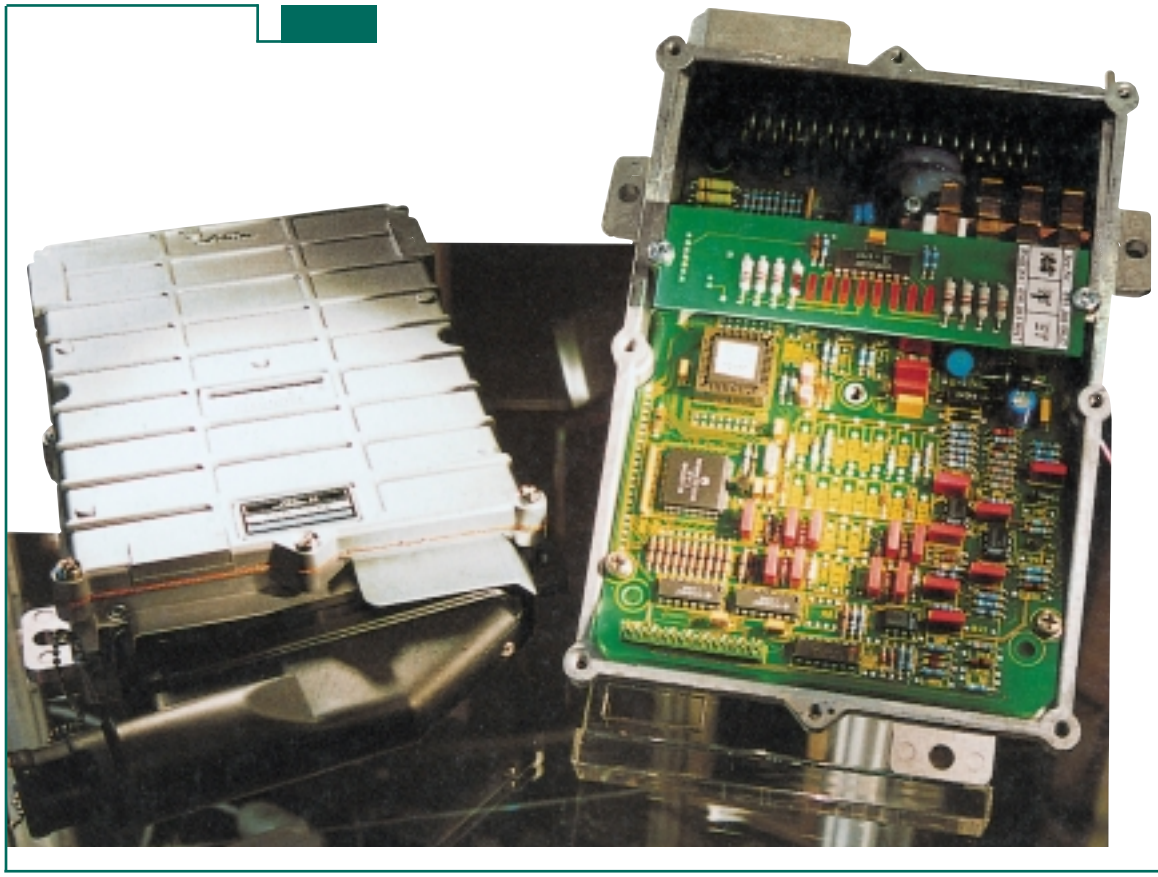
This is important in the case of well-proven components, but it is absolutely essential with electronic control units. The electronic brain contains the widest possible variety of information concerning its surroundings and transmits appropriate instructions in return.

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.

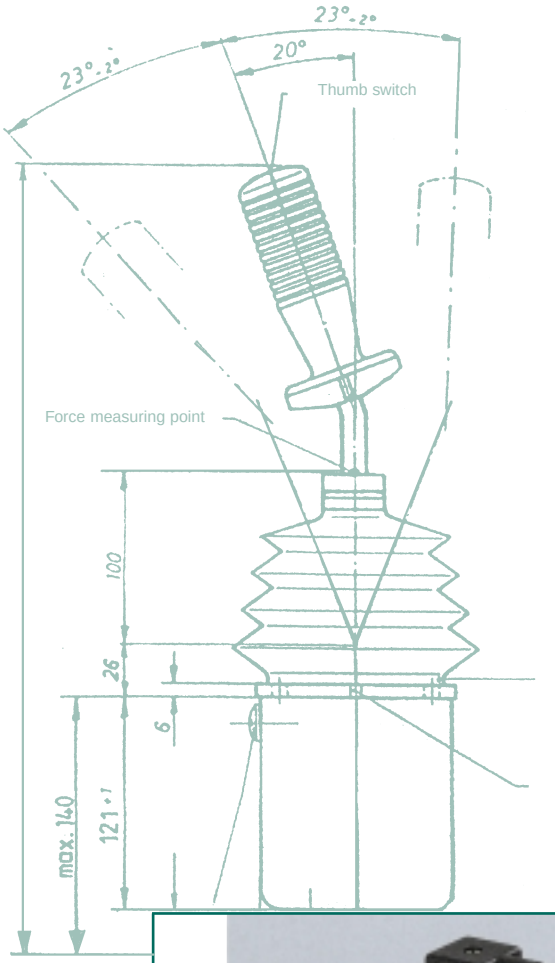
Linde observes all of the relevant regulations that result in extensive testing procedures.

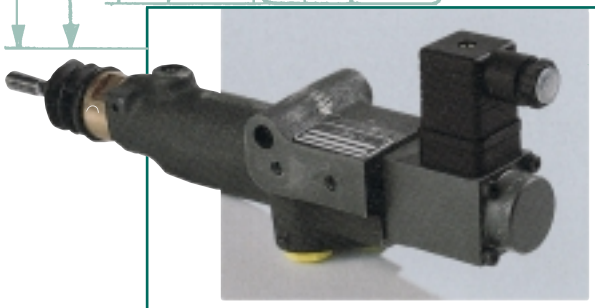
Line conducts the following tests for reliability and safety:

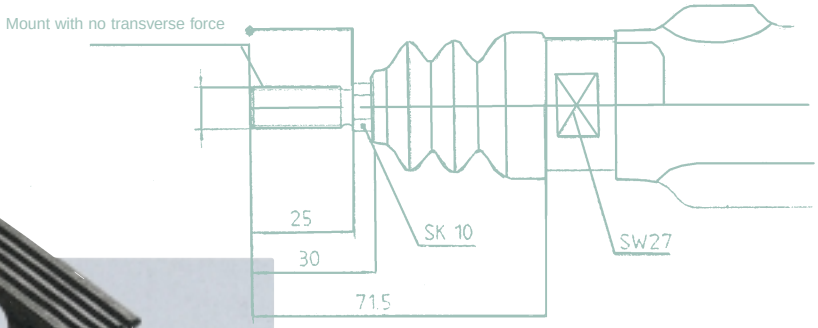
- Mechanical tests
- Electronic tests
- Function tests
- Safety tests
- System tests
- Field tests
- The following tests are carried out continuously during production of the system components:
- *Visual inspection, IC test, check-sum test, run-in test*
- Visual inspections *(100%) following assembly/installation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

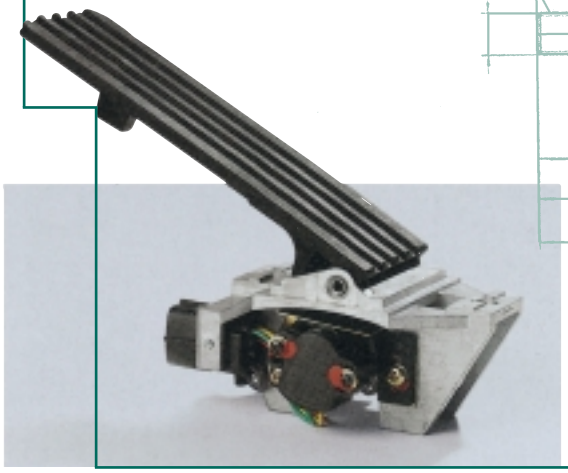


Peripheral components









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 Flurforderzeuge
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

P/N 888 006 6485