

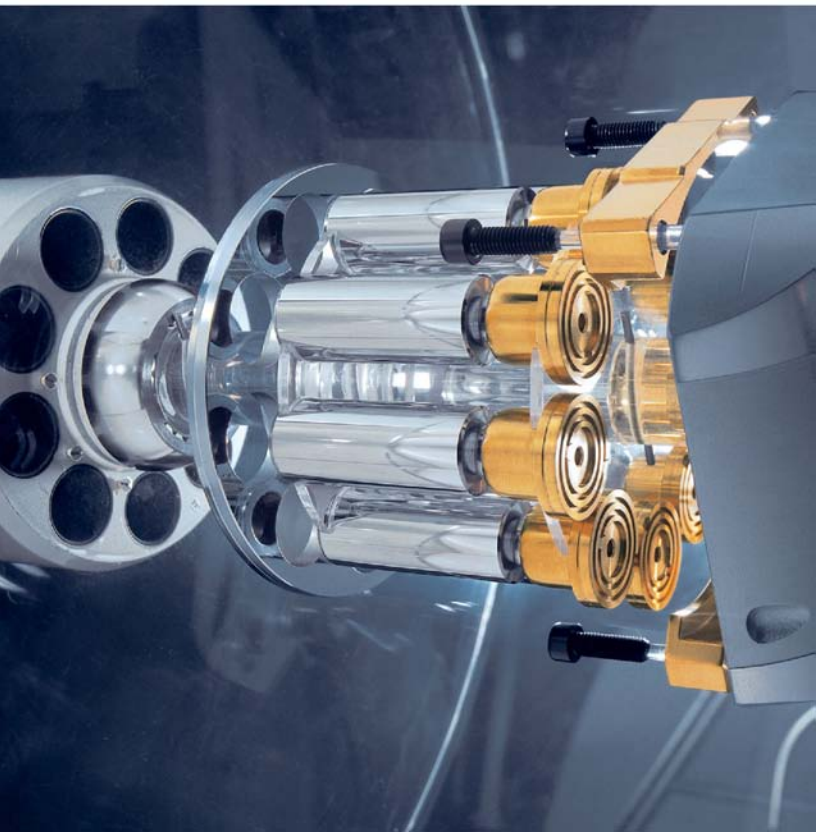
Spotlight on...
Linde hydrostatic drive.

Linde Material Handling

Linde



Linde hydrostatic drive.



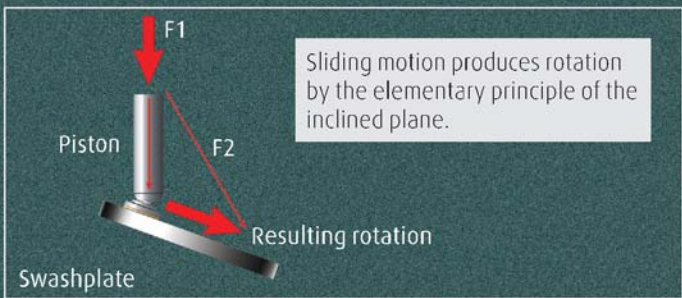
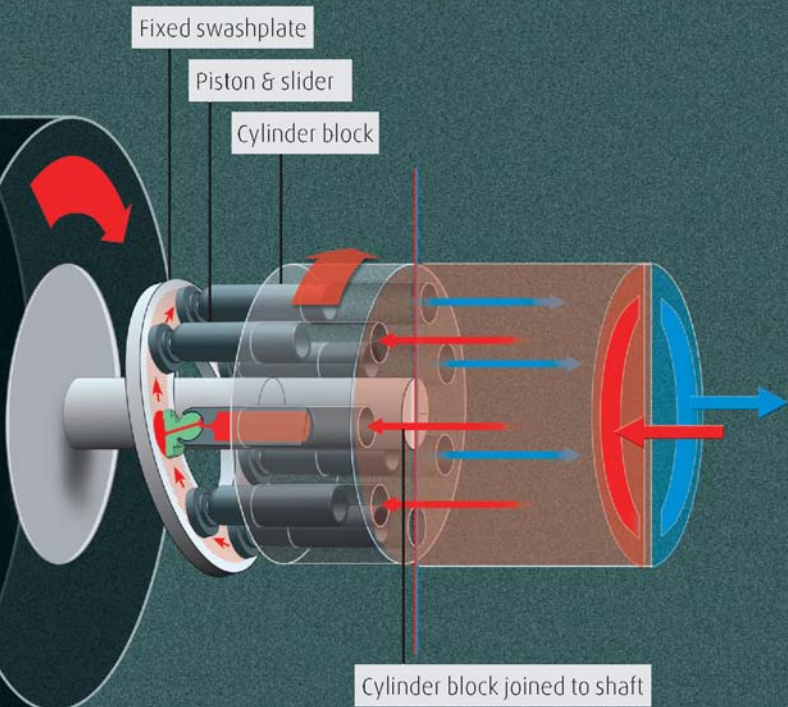


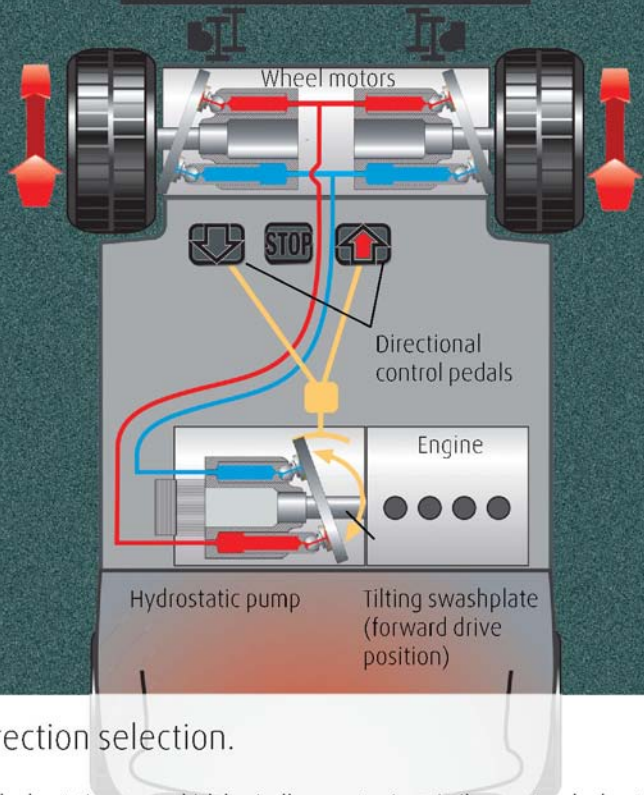
Leading-edge forklift truck engineering is inseparably linked to the Linde hydrostatic drive concept. Not surprisingly, it is acknowledged as the ultimate drive system – superior to any other – in achieving maximum lift truck performance.

Linde has refined hydrostatic drive to match the working conditions encountered by modern-day forklift trucks, perfecting it to meet every requirement for handling ease, durability, efficiency, and ergonomic operation.

It is this technology on which Linde forklifts have built five decades of continuing success. Users everywhere appreciate the proven fact that Linde hydrostatic drive moves more in the world of materials handling by significantly reducing both physical demands and work cycle times.

How does hydrostatic drive work? What is it about hydrostatic drive that gives Linde trucks their outstanding advantages and Linde truck users a competitive edge? Find out on the following pages.

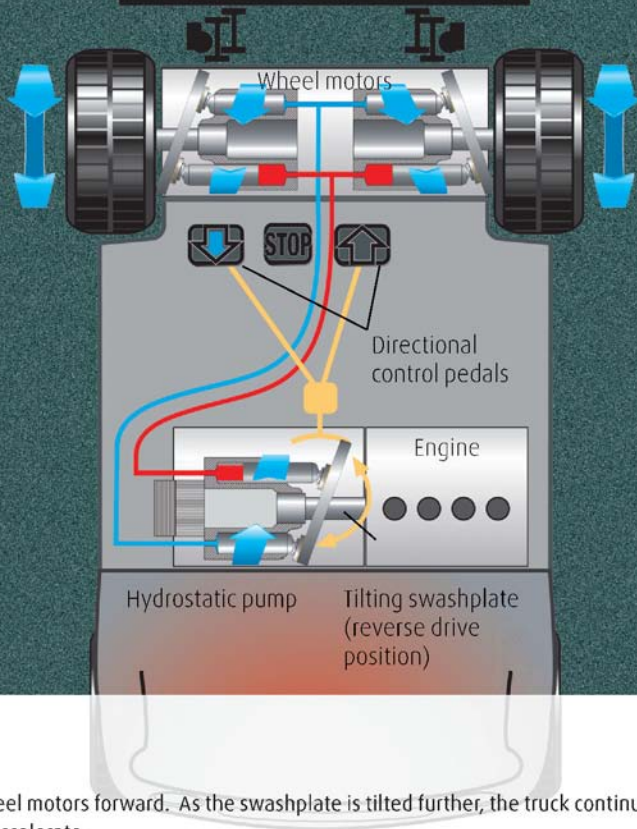




Direction selection.

The hydrostatic pump, which basically operates in a similar way to a hydrostatic motor, differs in one key aspect. Due to the swashplate being tiltable, the rate at which oil is delivered by the pump can be controlled continuously and precisely – independently of the speed at which the engine drives the pump.

When the truck is stationary, the swashplate is in neutral position and the pistons do not stroke in and out. As a result, no oil is displaced and no power is transmitted. Pressing the forward directional control pedal changes the angle of the swashplate and the pump starts delivering the oil flow needed to drive the



wheel motors forward. As the swashplate is tilted further, the truck continues to accelerate.

Changing travel direction is just as easy and convenient. Pressing the reverse directional control pedal tilts the swashplate in the opposite direction. This reverses the inlet and outlet ports and the oil flow rotates the hydraulic motors, generating reverse travel. The operation is continuous with no adverse affect on the hydrostatic system as it transfers smoothly and safely from maximum speed forward through neutral to maximum speed in reverse.

The smooth revolution.

The H20–H35 Linde models are equipped with the unique Linde hydrostatic direct drive. Two hydraulic wheel motors integrated in the front drive axle transfer rotation of the output shaft directly to the wheels. This system assures precise and perfectly controlled transmission of power.

Oil pressure directly converted to rotation for forward or reverse travel.

The revolutionary feature of this innovative technology is the fact that the wheel motor pistons are fitted into a rotating cylinder block and slide on a fixed swashplate. Oil pressure is pushing these pistons and with that, rotary motion is generated; All this with almost no mechanical friction. Friction and therefore wear is minimized by an oil film between piston and swashplate, preventing metal to metal contact.

Speed and travel direction are controlled by the hydrostatic pump, driven by the truck's engine.

- Oil pressure regulates the torque output.
- Oil volume controls the truck's speed.
- Direction of oil flow controls the travel direction.





Design advantage. Durability and efficiency.

Mechanical breakdowns and high servicing expense are a thing of the past. Durability and efficiency are here to stay with Linde hydrostatic drive.

No differential. Oil flow delivered by the pump is evenly divided between the two hydraulic motors, no mechanical differential is needed for power transmission.

No conventional service brakes. Hydrostatic drive slows down the truck by decreasing the flow of oil. As the directional control pedal is released, the truck progressively and smoothly decelerates to a complete stop.

No transmission. The variable control of oil flow — allowing flexible speed and random directional changes, eliminates the need for a mechanical transmission.

No clutch. At all times, the hydraulic pump is controlled via the travel pedals, from neutral to full speed; Eliminating the need for a clutch to separate the drive from the engine.

Linde forklift	Conventional forklift
Diesel/LPG engine	Diesel/LPG engine
Hydraulic pump	Clutch/Torque converter
Hydraulic motors	Mechanical transmission
*Reduction gears	Drive shafts
Wheels	Differential axle
High efficiency power transmission	Friction brakes
Fewer components	Reduction gears
	Wheels

* some models



No inching pedal.
No conventional brakes.

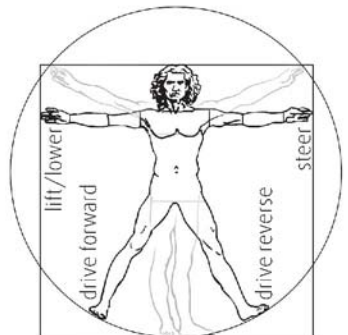
Hands and feet are very busy when operating a forklift truck. A lot of movements have to be accomplished simultaneously. Training and experience can reduce the physical effort, but the biggest relief comes with Linde hydrostatic drive.

Simplicity.

Travelling forward and in reverse is controlled by two separate directional control pedals. The operator of a Linde forklift is able to keep both feet on the pedals. The brake pedal is only applied in an emergency situation, as Linde hydrostatic drive automatically slows down the truck as the directional control pedal is released. Handling of the truck itself is responsive and precise. The operator is always in full control with minimum physical input required.

The hands also have simpler tasks. The left hand operates the compact steering wheel while the right hand actuates fingertip hydraulic system commands. Complete separation of travel and load handling functions drastically reduces the number of foot and hand movements required for each cycle and enables the operator to concentrate fully on the load.

Picking up a load, transporting it, putting it down and making the return run requires up to 58 actions from the operator on a forklift equipped with conventional torque converter drive, but only 28 on a Linde forklift!





Without Linde hydrostatic drive the operator must go through many unnecessary motions; wasting time and money.

Linde hydrostatic drive keeps the forklift squarely on track, it accelerates quicker and gets road transport vehicles unloaded much more efficiently. This is achieved without working harder; just smarter.



Linde forklifts load/unload more delivery vehicles in less time, using less fuel and with reduced maintenance requirements.



No slipping.
No spinning.

With Linde hydrostatic drive the forklift remains securely on track and operates with extreme precision. The absence of a torque converter and mechanical transmission results in maximum efficiency. This adds up to greater reliability in load handling with distinctly better productivity.

Benefits all around.

Realize greater fuel economy. This is due to the engine running at optimum rpm at all times.

Hydraulic oil change intervals only every 6,000 operating hours as a result of the almost wear-free working characteristics of Linde hydrostatic drive. The oil lasts up to six times longer than with hydrodynamic (torque converter) drive system.

Long service life and low maintenance costs due to the elimination of conventional mechanical consumable parts.

Time savings because it takes less time to do the same job with a Linde hydrostatic-drive forklift. Less strain on both operator and machine.



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