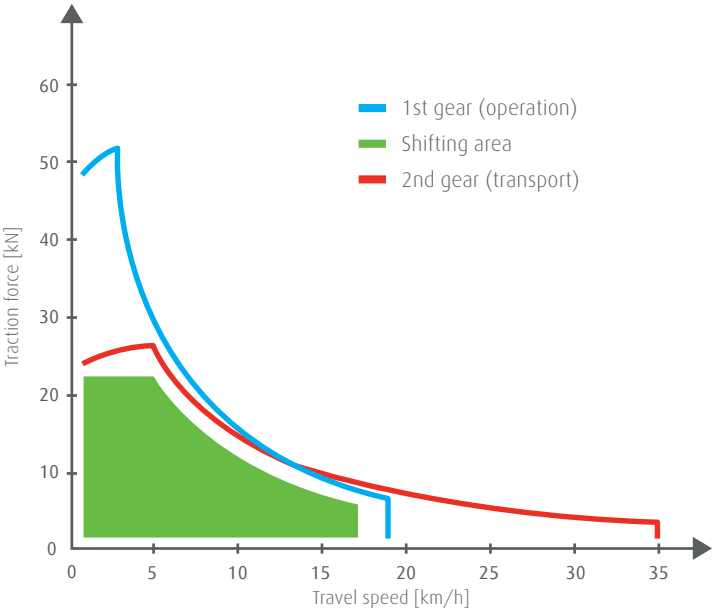
Shift in Motion

Hydrostatic Drive System Solution

Linde Hydraulics



Shift in Motion enables shifting procedures in a moving machine, equipped with a manual transmission that is intended to be shifted at standstill by electro-hydraulically synchronising the drivetrain. This system is particularly suitable for vehicles that often change between transport and operation, i.e. vehicles that require both high tractive effort and a high top speed above 25 kilometres per hour.

The shifting procedure is load-free thanks to electro-hydraulically synchronised gears and the ability to adjust the drive component's speed and torque. Thus, there is no need for multi-disc clutches and mechanical synchronisation using synchronizer rings and moreover there's less pinion engagement. This makes the shifting procedures wear-free and also increases the transmission's efficiency.

Design Characteristics

>> Hydrostatically controlled synchronization of manual gear boxes shifted at standstill

>> Full utilization of the kinetic energy while changing between transport to operation (and vice versa)

>> Compared to conventional drives, Shift in Motion includes only two additional components

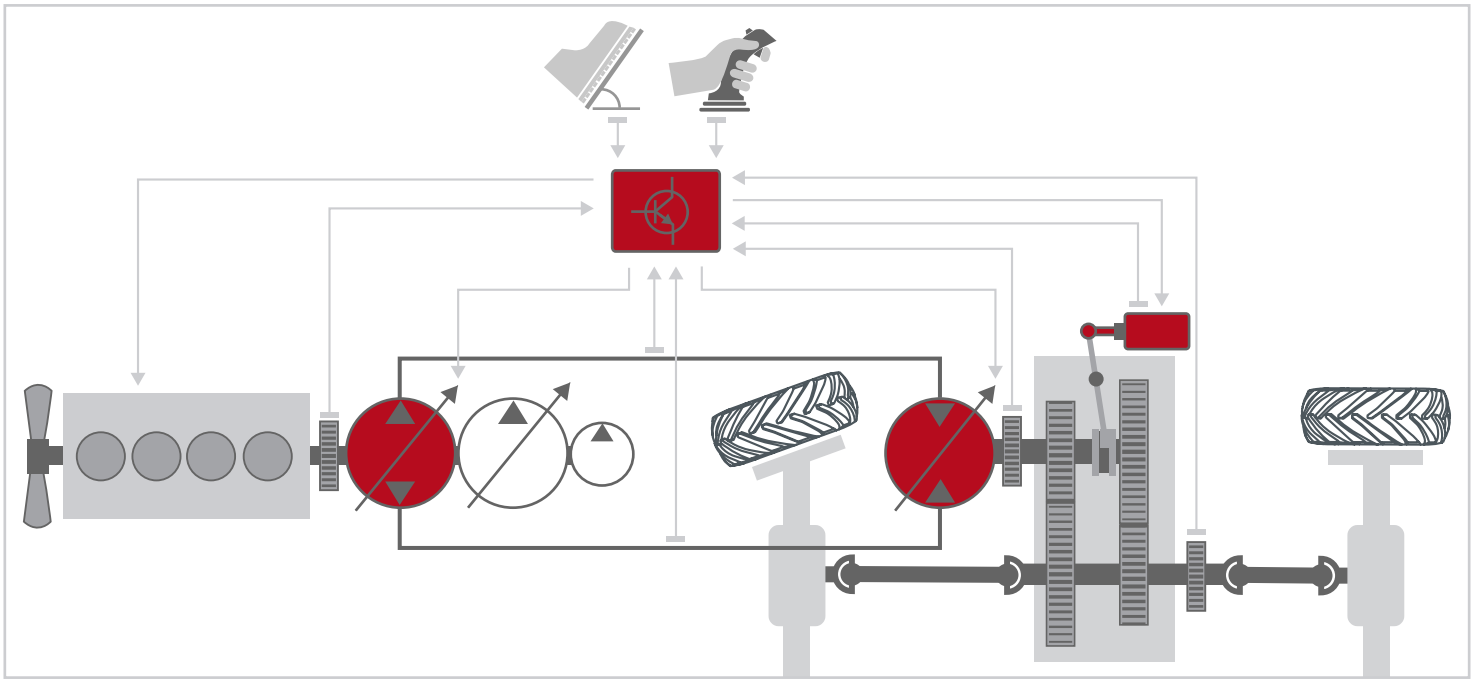
Advantages

>> Automated and jerkless gear changes (<0.7 sec.) without standstill and the need of expensive synchromesh gear boxes

>> Considerable reduction of fuel consumption and noise emissions

>> Minimum space requirement

Concept



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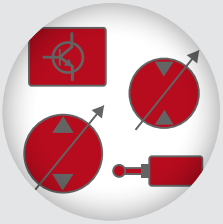
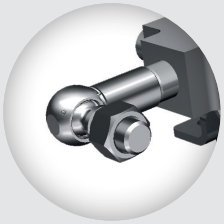
Drive

Linde Components



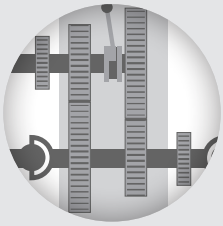
>> Variable displacement pump **HPV-02**
>> Variable displacement motor **HMV-02**
>> Shift actuator **Actuator**
>> Electronic control **iCon**

Interface



>> Shift rod with clevis or spherical head
>> Multiple positions of rest and analog position signal
>> Defined default behavior

System Requirements



>> Standstill transmission with two or more gears and defined neutral position
>> Admissible tractive effort interruption of <0.7 sec

Application Examples

Category

45 kW — **70 kW** — 150 kW

Equipment

- A 1 x HPV 75-02 E2
- B 1 x HMV 105-02 E6
- C 1 x iCon
- D 1 x Actuator

Category

35 kW — **90 kW** — 130 kW

Equipment

- A 1 x HPV 105-02 E2
- B 1 x HMV 135-02 E6
- C 1 x iCon
- D 1 x Actuator

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