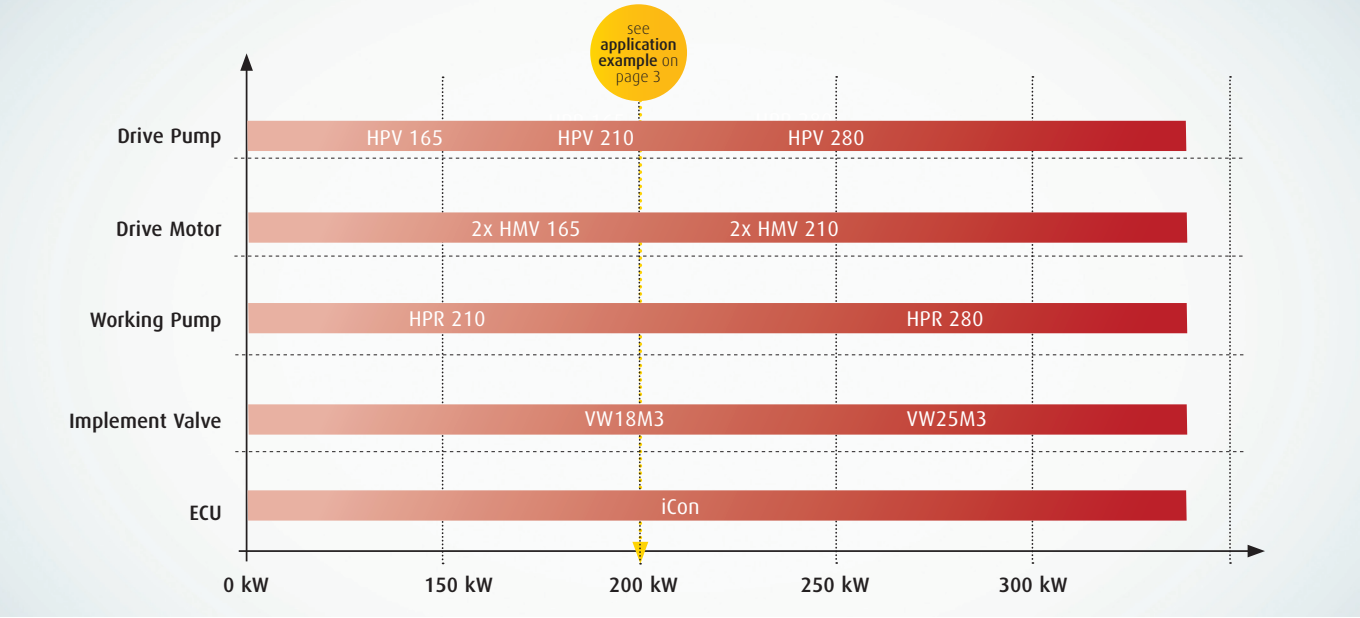
Drive Solutions for Wheeled Harvester.

Linde Hydraulics

Wheeled Harvester Solutions.
Our Portfolio.

By the logic combination of individual products that perfectly complement each other we offer solutions for almost every class of machines. Due to these capabilities we can always offer the best possible system to our customers.



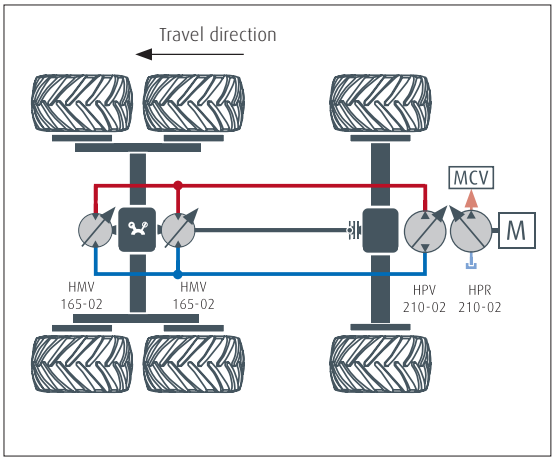
Benefitting from Linde Hydraulics, modern, mobile wood-processing machines are both efficient and sustainable. The example design depicts a wheel-driven wood harvester with two high-performance yet compact hydraulic motors in a closed circuit. This design allows the machine to move safely and protect the soil, even on rough terrain.

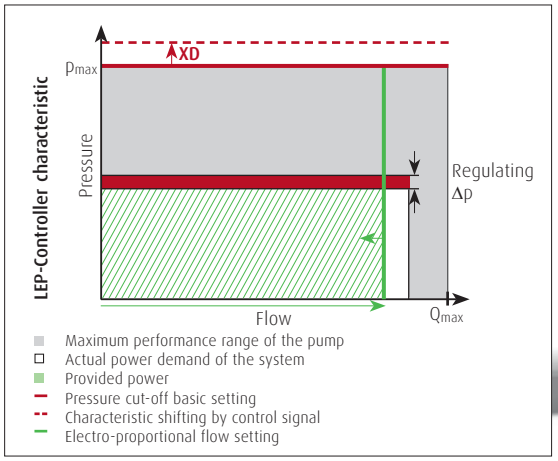
The Linde Synchron Control (LSC) system is a load sensing system with downstream pressure compensators. It enables the work functions to operate in an open circuit without mutual interference. A main control valve distributes the oil flow to the consumers. Its monoblock design combines an extremely compact build with a very low level of flow loss.

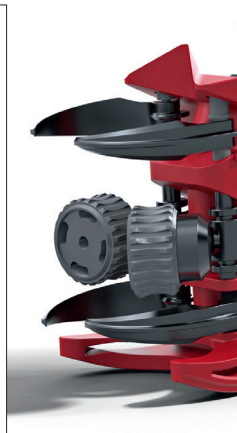
The oil is provided by a high-pressure pump of type HPR-02, which operates at the noise level of a pump in a closed circuit thanks to the SPU silencer. The LEP controller enables volume flow regulation according to actual requirements, based on the load sensing signal. Using the electrical override, the displaced volume can also be limited or allocated according to application. Thanks to the hydraulically adjustable pressure cut-off, the hydraulic system is only operated at the defined pressure and securely protected from overloading.

The optimum coordination of individual components is always the main objective with regard to power and fuel consumption. Open and closed circuits are connected by the high-performance electronic control unit, which has already proven successful in other areas of application such as walking excavators. It actuates the pumps, motors and directional control valve sections in the machine control and can be integrated in other machine control systems, for example to fully or partially automate individual work processes.

Linde is also the perfect partner for other forestry machines such as forestry tractors, skidders and forwarders.







Application Example.
Wheeled Harvester, 200 kW.

Equipment

- A 1x HPV 210-02 E1(drive pump)
- B 2x HMV 165-02 (drive motor)
- C 1x HPR 210-02 LEP (working pump)
- D 1x VW18M3 (implement valve)
- E 1x iCon (electronic control unit)

Advantages

- Maximum efficiency through the use of efficient standalone systems and components as well as the intelligent system design in closed and open circuits
- Does not require a pump distributor gear
- Only two gearbox ratios, "Shift in Motion" possible
- Low noise level thanks to SPU silencer

Options

- Double motor instead of two single motors
- System scope and level of electrification can be scaled
- Partial automation
- LSC functions even for purely hydraulic actuation of valve sections
- Electronic actuation can be retrofitted, even for individual sections

Technical Data Summary.
Find the right product for your application.

VARIABLE PUMPS FOR CLOSED CIRCUIT OPERATION

HPV-02		55	75	105	135	165	210	280
Max. displacement	cc/rev	54.7	75.9	105	135.7	165.6	210.1	281.9
Max. operating speed	rpm	3900	3400	3200	3000	2750	2300	2400
Max. speed (intermittent)	rpm	4150	3600	3400	3200	2950	2500	2550
Nominal pressure	bar	450	450	450	450	450	450	450
Peak pressure (intermittent)	bar	500	500	500	500	500	500	500
Torque (Δp=430 bar, charge pressure=20 bar)	Nm	374	519	719	929	1133	1438	1929
Corner Power (theor.) (Vmax x nmax x Δp 430 bar)	kW	153	185	241	292	326	346	485
Weight (w/H1 control)	kg	46	49	66	72	113	132	164

PRODUCT ADVANTAGES

HPV-02

- compact design
- high power density
- dynamic response
- high reliability
- long service life
- noise-optimized
- precise and load-independent

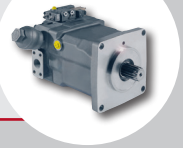
SELF-REGULATING PUMPS FOR OPEN CIRCUIT OPERATION

HPR-02		55	75	95	105	135	165	210	280	105D	125D	165D
Max. displacement	cc/rev	55	75.9	95	105	135.7	165.6	210.1	281.9	210	250	331.2
Maximum operating speed	rpm	2700	2500	2500	2350	2300	2200	2100	2000	2450	2400	2100
Max. oil flow	l/min	148.5	189.8	237.5	246.8	312.1	364.3	441.2	563.8	514.5	600.0	695.5
Nominal pressure	bar	420	420	350	420	420	420	420	420	420	380	420
Maximum pressure	bar	500	500	420	500	500	500	500	500	500	420	500
Torque	Nm	368	507	529	702	907	1107	1404	1884	1245	1245	1964
Corner power	kW	104	132.8	138	172.7	218.5	255	308.8	394.7	319.4	337	431.8
Weight	kg	39	39	44.5	50	65	89	116	165	96	113	177

PRODUCT ADVANTAGES

HPR-02

- energy saving operation by 'flow on demand'-control
- dynamic response
- excellent suction up to rated speed
- noise optimization over the whole range of operation
- compact design
- high power density
- high reliability
- long working life



VARIABLE DISPLACEMENT MOTORS FOR CLOSED AND OPEN CIRCUITS

HMV-02/HMF-02		55	75	105	135	165	210	280	105D	165D
Max. displacement	cc/rev	54.7	75.9	105	135.6	165.6	210	281.9	210	331.2
Max. operating speed at Vmax	rpm	4300	3800	3700	3200	3100	2700	2400	3300	2900
Max. speed at Vmax	rpm	4400	4100	3800	3500	3400	3000	2700	3400	3100
Max. operating speed at Vmin	rpm	4700	4400	4100	3700	3500	3200	2900	4100	3500
Max. speed at Vmin	rpm	5300	5000	4700	4000	3900	3500	3200	4400	3700
Max. pressure (intermittent)	bar	500	500	500	500	500	500	500	500	500
Output torque (Δp=430 bar)	Nm	374	519	719	928	1133	1438	1929	1437	2267
Corner power	kW	184	239	309	360	415	482	586	677	878
Weight	kg	28	32	42	56	76	101	146	98	149

PRODUCT ADVANTAGES

HMV-02/HMF-02

- jerk-free low speed
- high starting torque
- large conversion range
- zero angle possible
- dynamic response
- PTO through-drive motor
- compact design
- high power density
- high reliability
- long service life

MAIN CONTROL VALVE IN MONOBLOCK DESIGN

VW Monoblock		VW18	VW25	VW30
Max. flow per section from pump to actuator	l/min	250	400	600
Return flow through block	l/min	450	700	1000
Rated pressure	bar	420	420	420
Number and size of pump ports, according to SAE ISO 6162-2		1x 1½"(DN 38) or 2x 1½" (DN38)		

PRODUCT ADVANTAGES

VW Monoblock

- optimised for crane applications
- all advantages of LSC valve technology
- piloting hydraulic, electric or combined