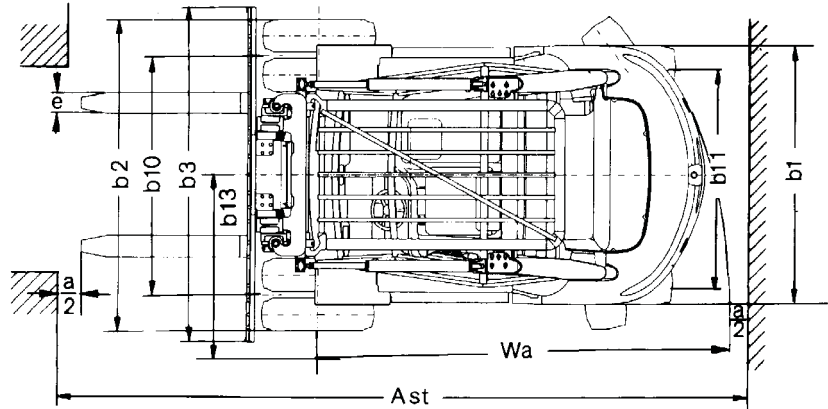
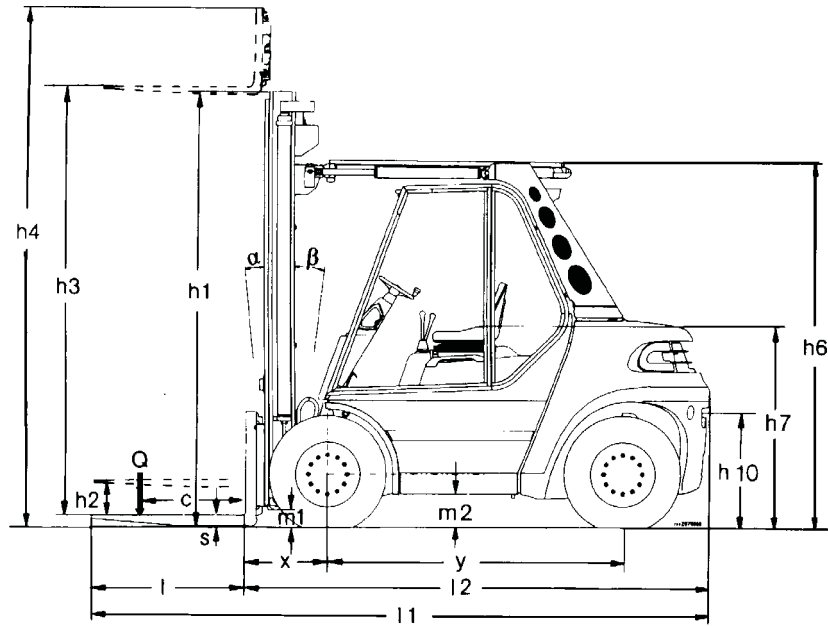


July 2002		Fork Lift Trucks Designation VDI 2198			Data Sheet for Material Handling Equipment		DFG to VDI 2198	VDI 2198	
Characteristics	1.1	Manufacturer (see page 1)							
	1.2	Model designation		H 50 D	H 60 D	H 70 D	H 80 D	H 80 D/900	
	1.3	Powerunit: battery, diesel, petrol, LPG, mains power		Diesel	Diesel	Diesel	Diesel	Diesel	
	1.4	Operation: manu., pedest., stand-on, seated, ord. pic.		seated	seated	seated	seated	seated	
	1.5	Load capacity	Q [kg]	5000	6000	7000	8000	8000	
	1.6	Load centre	c [mm]	600	600	600	600	900	
	1.8	Axle centre to fork face	x [mm]	590	590	600	600	630	
	1.9	Wheelbase	y [mm]	2160	2160	2160	2160	2510	
	2.1	Service weight	[kg]	9300	9550	10760	11500	12400	
Weight	2.2	Axle load with load, front/rear	[kg]	12200 / 2100	13770 / 1780	15650 / 2110	17160 / 2340	18200 / 2200	
	2.3	Axle load without load, front/rear	[kg]	4450 / 4850	4470 / 5080	4770 / 5990	4730 / 6770	5400 / 7000	
	3.1	Tyres, front/rear (SE = CS superelastic, L = pneum.)		L (SE)	L (SE)	L (SE)	L (SE)	L (SE)	
Wheels and Tyres	3.2	Tyre size, front		300 - 15/22 PR 2)	355/65 - 15/24 PR 2)	8.25 - 15/18 PR 2)	8.25 - 15/18 PR 2)	8.25 - 15/18 PR 2)	
	3.3	Tyre size, rear		8.25 - 15/18 PR 2)	8.25 - 15/18 PR 2)	8.25 - 15/18 PR 2)	300 - 15/18 PR 2)	300 - 15/18 PR 2)	
	3.5	Wheels, number front/rear (x = driven)		2x (4x) / 2 3)	2x (4x) / 2 3)	4x / 2	4x / 2	4x / 2	
	3.6	Track width, front	b10 [mm]	1594 4)	1594 4)	1748	1748	1748	
	3.7	Track width, rear	b11 [mm]	1600	1600	1600	1550	1550	
	4.1	Mast/fork carriage tilt, forward/backward	$\alpha/\beta$ , (°)	6 / 10	6 / 10	6 / 10	6 / 10	6 / 10	
	4.2	Height of mast, lowered	h1 [mm]	2730 1) 5)	2730 1) 5)	2730 1) 5)	2730 1) 5)	2730 1) 5)	
Dimensions	4.3	Free lift	h2 [mm]	150	150	150	150	150	
	4.4	Lift	h3 [mm]	3550 1)	3550 1)	3150 1)	3150 1)	2750 1)	
	4.5	Height of mast, extended	h4 [mm]	4450 1)	4450 1)	4250 1)	4250 1)	4150 1)	
	4.7	Height of overhead guard (cabin)	h6 [mm]	2714	2714	2714	2714	2714	
	4.8	Height of seat/stand-on platform	h7 [mm]	1432	1432	1432	1432	1432	
	4.12	Tow coupling height	h10 [mm]	810	810	810	810	810	
	4.19	Overall length	l1 [mm]	4590	4590	4600	4600	5590	
	4.20	Length to fork face	l2 [mm]	3390	3390	3400	3400	3790	
	4.21	Overall width	b1/b2 [mm]	1894 (2262) / 1850 3)	1948 (2262) / 1850 3)	2262 / 1850	2262 / 1850	2262 / 1850	
	4.22	Fork dimensions	s/e/l [mm]	60 x 130 x 1200	60 x 130 x 1200	70 x 150 x 1200	70 x 150 x 1200	70 x 200 x 1800	
	4.23	Fork carriage to DIN 15173, class/form A, B		4 A	4 A	4 A	4 A	4 A	
	4.24	Width of fork carriage	b3 [mm]	1800	1800	2180	2180	2180	
	4.31	Ground clearance, mast	m1 [mm]	202	202	202	202	202	
	4.32	Ground clearance, centre of wheel base	m2 [mm]	245	245	245	245	240	
4.33	Aisle width with pallets 1200x1000 across forks	Ast [mm]	4850	4850	4860	4860	5175		
4.34	Aisle width with pallets 800x1200 along forks	Ast [mm]	5050	5050	5060	5060	5375		
4.35	Turning radius	Wa [mm]	3060	3060	3060	3060	3345		
4.36	Min. distance between the centres of rotation	b13 [mm]	975	975	975	975	975		
Performance	5.1	Travel speed, with/without load	km/h	22 / 22	22 / 22	22 / 22	22 / 22	22 / 22	
	5.2	Lifting speed, with/without load	m/s	0.53 / 0.53	0.53 / 0.53	0.42 / 0.42	0.42 / 0.42	0.42 / 0.42	
	5.3	Lowering speed, with/without load	m/s	0.50 / 0.50	0.50 / 0.50	0.42 / 0.42	0.42 / 0.42	0.42 / 0.42	
	5.5	Tractive force, with/without load, 60 minute rating	N	61000 / 31000	57000 / 33000	58000 / 35000	58000 / 35000	58000 / 42000	
	5.7	Climbing ability with/without load, 30 minute rating	% 6)	45 / 28	35 / 27	29 / 28	26 / 27	-	
	5.9	Acceleration time with/without load (first 10 m)	s	4.7 / 4.3	5.2 / 4.7	5.7 / 5.1	6.2 / 5.3	6.2 / 5.3	
5.10	Service brake		hydrostatic	hydrostatic	hydrostatic	hydrostatic	hydrostatic		
IC engine	7.1	Manufacturer of engine/type		KHD / BF 6M 1012	KHD / BF 6M 1012	KHD / BF 6M 1012	KHD / BF 6M 1012	KHD / BF 6M 1012	
	7.2	Engine rated power to ISO 1585	kW	74.9	74.9	74.9	74.9	74.9	
	7.3	Rated rpm	RPM	2200	2200	2200	2200	2200	
	7.4	Number of cylinders / cc	n/cc	6 / 4800	6 / 4800	6 / 4800	6 / 4800	6 / 4800	
	7.5	Fuel consumption to VDI	l/h   kg/h	5.3	5.6	5.9	6.2	6.7	
Others	8.1	Type of drive control		hydrostatic transmission	hydrostatic transmission	hydrostatic transmission	hydrostatic transmission	hydrostatic transmission	
	8.2	Working pressure for attachments	bar	260	260	260	260	260	
	8.3	Oil quantity for attachments	l/min	-	-	-	-	-	
	8.4	Mean noise level at driver's ear	dB (A)	-	-	-	-	-	
	8.5	Towing coupling, design/type DIN, no.		-	-	-	-	-	

### Notes:

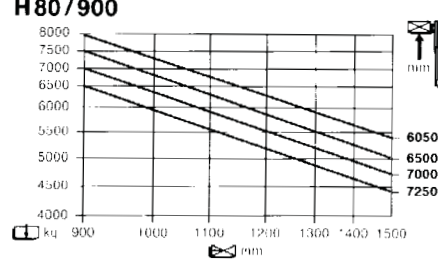
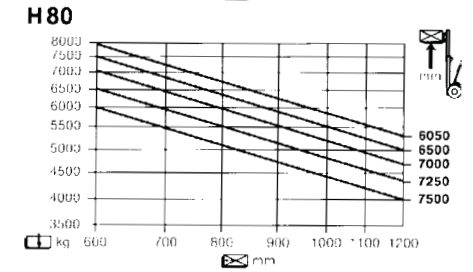
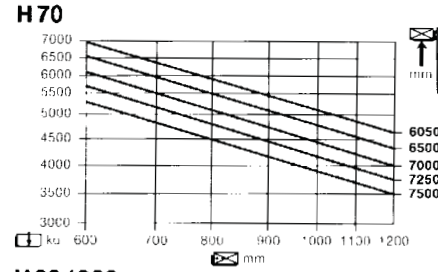
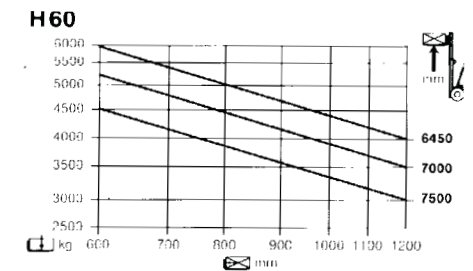
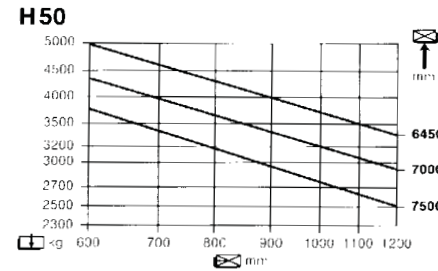
- 1) Additional lifting mast heights; see table.
- 2) Additional optional tyres upon request.
- 3) Values in brackets for double wheels 8.25 - 15/18 PR.
- 4) 1748 mm for double wheels 8.25 - 15.
- 5) With a free lift of 150 mm.
- 6) On short slopes, when crossing obstacles (refer to section "Travel").

353 804 3001.0403



Safety distance "a" = 200 mm

Lifting capacity diagrams:



Load capacities apply for SE tyres.

Mast and lifting height H 50, H 60 (in mm)						
Lifting height	h3	3550	4150	4550	5250	6050
Mast retracted (with 150 mm free lift for standard)	h1#	2730	3030	3230	3580	3980
Mast extended	h4	4450	5050	5450	6150	6950
Mast and lifting height H 70, H 80 (in mm)						
Lifting height	h3	3150	3750	4150	4850	5650
Mast retracted (with 150 mm free lift for standard)	h1#	2730	3030	3230	3580	3980
Mast extended	h4	4250	4850	5250	5950	6750
Mast and lifting height H80/900 (in mm)						
Lifting height	h3	2750	3350	3750	4450	5250
Mast retracted (with 150 mm free lift for standard)	h1#	2730	3030	3230	3580	3980
Mast extended	h4	4150	4750	5150	5850	6650

## Noise emission levels

Determined in a test cycle in accordance with EN 12053 from the weighted values in the operating modes DRIVING, LIFTING, IDLING.

### Noise level at driver's station

H 50 - H 80  $L_{PAZ} = 78 \text{ dB (A)}$   
 Uncertainty  $K_{PA} = 4 \text{ dB (A)}$

### Sound level at driver's place

While lifting  $L_{Pa} = 80 \text{ dB (A)}$   
 While idling  $L_{Pb} = 65 \text{ dB (A)}$   
 While driving  $L_{Pc} = 83 \text{ dB (A)}$   
 Uncertainty  $K_{PA} = 4 \text{ dB (A)}$

### Acoustic power level

H 50 - H 80  $L_{WAZ} = 100 \text{ dB (A)}$   
 Uncertainty  $K_{WA} = 2 \text{ dB (A)}$

### Acoustic power level

While lifting  $L_{Wa} = 101 \text{ dB (A)}$   
 While idling  $L_{Wb} = 87 \text{ dB (A)}$   
 While driving  $L_{Wc} = 105 \text{ dB (A)}$   
 Uncertainty  $K_{WA} = 2 \text{ dB (A)}$

### Guaranteed acoustic power level

Acc. to directive 2000/14/EC  $L_{WA} = 105 \text{ dB (A)}$

The directive legally requires this information. This value has been calculated from the acoustic power levels for "Lifting" and "Driving" and is only be used as a comparable value for different trucks. For the determination of the real environmental noise stress this value is less appropriate, as it is not representative of normal truck operation, which includes "Idling".

### NOTE

Higher or lower noise emissions can exist during operation of the truck, for example due to type of operation, environmental influences and additional noise emission sources.

## Frequency characteristic for human body vibrations

The values are determined in conformance with EN 13059 on trucks with standard equipment according to the technical data sheet (driving over test course with bumps).

### Frequency characteristic acc. to EN 12096

Measured frequency characteristic  $a_{w,zs} = 0.8 \text{ m/s}^2$   
 Uncertainty  $K = 0.3 \text{ m/s}^2$

### Frequency characteristic given for hand and arm vibrations

Frequency characteristic  $< 2.5 \text{ m/s}^2$

### NOTE

The frequency characteristic for the human body can not be used to determine the actual frequency load during operation. This load depends on the working conditions (condition of roadway, type of operation, etc) and must therefore be determined at the site, if necessary.

The specification of hand and arm vibrations is required by law, even if the values, as in this case, do not indicate any danger.

The 353 fork lift truck series is designed for loading and spotting loads of up to 5 tons with the H 50, of up to 6 tons with the H 60, of up to 7 tons with the H 70 and 8 tons with the H 80 with a load centre distance of 600 mm.

The H 80 / 900 is designed for loading and spotting loads of up to 8 tons with a load centre distance of 900 mm.

The trucks have a compact and low profile design.

The low centre of gravity and the optimum distribution of weight ensures optimum stability under all operating conditions.

## Engine

A water-cooled, 6-cylinder supercharged Diesel engine with direct fuel injection is installed as power unit. It drives the hydraulic pumps of the truck at load-dependent speed.

The combustion air is cleaned by dry air filter with a paper element.

## Hydraulic system

The drive system consists of one variable-displacement pump for driving the two traction hydraulics variable-displacement motors, one hydraulic pump each for the working and steering hydraulics, and one hydraulic pump for boost pressure.

The variable-displacement hydraulic motors in the drive units are supplied with pressure by the variable-displacement pump. They power the traction wheels via two lateral drive axle hub differentials.

## Operation

The hydraulic pump and the speed are simultaneously controlled by the forward and reverse accelerator pedals. The truck speed can be regulated by the hydrostatic power source from a standstill up to the maximum speed with infinitely variable control in both directions. The double pedal control permits easy as well as safe and time-saving handling of the lift truck.

Both hands are always free for steering and control of the work movements. The net result is quick reversing and energy-saving stacking.

There is only one control lever (main control lever) for controlling the work motions lifting, lowering and tilting. Additional control levers are supplied for the operation of supplementary attachments.

## Lift mast

Overhead tilt cylinders are fitted for sensitive tilting and for mast stabilisation. The LTS (Linde Torsion Support), also functioning as overhead guard, ensures high strength against torsion, i.e. easy working due to reduced torsional vibrations of the mast and so a long service life.

For lifting the inner mast, there are two lift cylinders mounted on the outer upright channel.

The fork carriage is lifted by two flyer chains running at the inner upright channel.

## Brakes

The hydrostatic transmission is used as service brake. The two multiple disc brakes integrated in the compact axle are utilised as a parking brake.

When the engine is stopped, the multiple disc brakes are applied = automatic braking.

The brake pedal is also used as parking brake. To park the truck, lock the brake pedal mechanically.

## Steering

The steering is a hydrostatic power steering system, which turns the rear wheels with the steering wheel via the steer cylinder.

The steering system can also be operated when the engine is stopped, but a greater effort is required to turn the steering wheel.

## Electrical system

The electrical system is supplied by a three-phase current generator with 12 VDC. For starting the engine, a 12-volt battery is installed.