

hydrostaticDRIVE for excellent drive comfort and productivity

Low fuel consumption

Excellent stability during travel due to extremely low centre of gravity and high pivot steer axle

Driver assistance systems (optional)

Ergonomic and easily adjustable operators environment

Driver orientated workplace



## DFG/TFG 316s/320s

**Diesel and LPG counterbalanced trucks with hydrostatic drive (1,600/2,000 kg)**

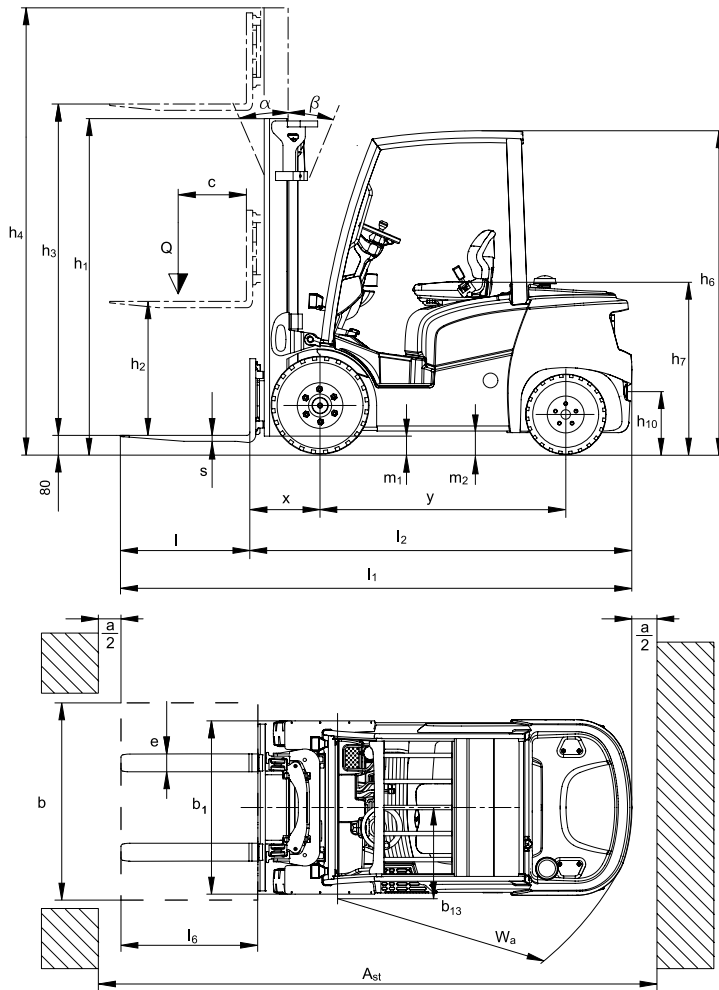
Our diesel and LPG fork lift trucks with hydrostatic drive offer outstanding throughput, particularly when reversing (e.g. during loading of HGVs). This is where their strengths truly come into play: Rapid acceleration, fast reversing and precise travel. With five operating programs, the performance characteristics can be optimally adapted to the requirements of numerous applications.

State-of-the-art engines from the automotive industry feature impressive electronic control units. They allow for precise operation and optimum productivity combined with low fuel consumption. All the engines are characterised by low emissions, falling significantly below the strict EU directives. A regulated 3-way catalytic converter for LPG fork lift trucks as well as soot filter systems for diesel fork lifts are available as options.

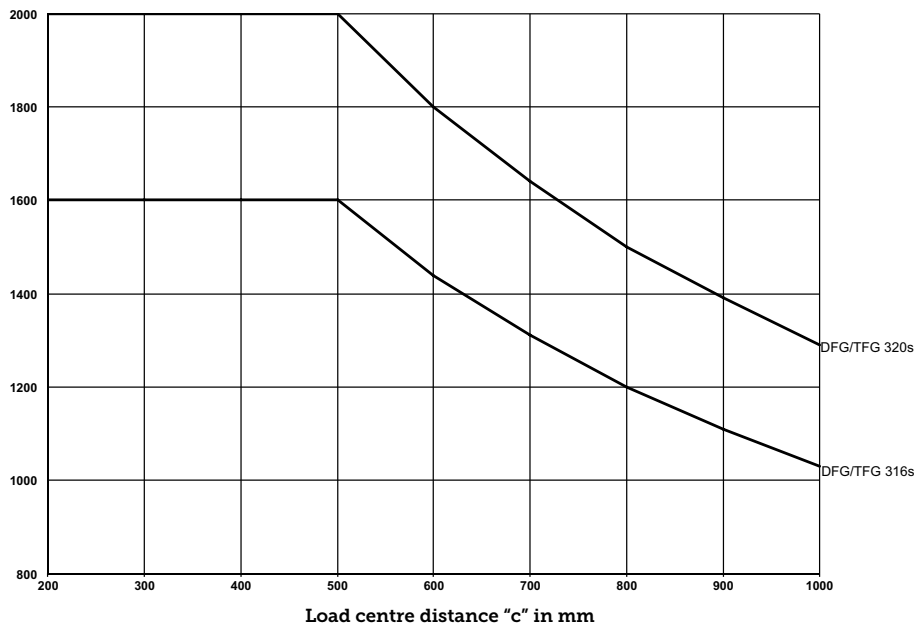
The generously dimensioned workstation is optimally designed with the operator in mind. The infinitely adjustable steering column with memory function and the integral armrest allows full adjustment to suit all operator sizes. The single-point adjustment via two adjustable axis enables the primary controls to be quickly and intuitively adjusted. This ensures safety, protects health and enables the operator to concentrate fully on their work whilst being in a relaxed & stress-free environment.

The laminated safety glass roof panel offers protection from the weather and falling items. The increased amount of light in the cab creates a pleasant working atmosphere contributing to faster and safer stacking and retrieval. These are the best requirements for ensuring maximum productivity throughout the shift.

# DFG/TFG 316s/320s



Capacity (kg)



# DFG/TFG 316s/320s

Standard mast designs DFG 316s/DFG 320s/TFG 316s/TFG 320s									
	Lift $h_3$ (mm)	Lowered mast height $h_1$ (mm)		Free lift $h_2$ (mm)		Extended mast height $h_4$ (mm)		Mast tilt forward / back $\alpha/\beta$ (°)	
		DFG 316s / TFG 316s	DFG 320s / TFG 320s	DFG 316s / TFG 316s	DFG 320s / TFG 320s	DFG 316s / TFG 316s	DFG 320s / TFG 320s	DFG 316s / TFG 316s	DFG 320s / TFG 320s
Duplex ZT	2900	2005	2012	150	150	3479	3501	7/7	7/7
	3100	2105	2112	150	150	3679	3701	7/7	7/7
	3300	2205	2212	150	150	3879	3901	7/7	7/7
	3500	2305	2312	150	150	4079	4101	7/6	7/6
	3700	2405	2412	150	150	4279	4301	7/6	7/6
	4000	2505	2512	150	150	4579	4601	7/6	7/6
	4300	2705	2712	150	150	4879	4901	7/6	7/6
	4500	2805	2812	150	150	5079	5101	7/6	7/6
	5000	-	3117	-	150	-	5612	-	7/5
Duplex ZZ	3100	2060	2067	1474	1432	3679	3731	7/7	7/7
	3300	2160	2167	1574	1532	3879	3931	7/7	7/7
	3500	2260	2267	1674	1632	4079	4131	7/6	7/6
	3700	2360	2367	1774	1732	4279	4331	7/6	7/6
	4000	2510	2517	1924	1882	4579	4631	7/6	7/6
Triplex DZ	4400	2020	2027	1434	1397	4979	5031	7/5	7/5
	4640	2100	2107	1514	1477	5219	5271	7/5	7/5
	4700	2120	2127	1530	1485	5279	5331	7/5	7/5
	4800	2160	2167	1570	1525	5379	5431	7/5	7/5
	5000	2230	2237	1644	1607	5579	5631	7/5	7/5
	5500	2410	2417	1824	1787	6079	6131	7/5	7/5
	6000	2580	2587	1994	1962	6579	6631	7/5	7/5
	6500	2760	2767	2174	2140	7079	7131	7/5	7/5
	7000	2930	2937	2344	2307	7579	7631	-	-
7500	3100	3107	2514	2477	8079	8131	-	-	

# Technical data in line with VDI 2198

			Jungheinrich			
			DFG 316s	DFG 320s		
Identification	1.1	Manufacturer (abbreviation)	Jungheinrich			
	1.2	Model				
	1.3	Drive	Diesel			
	1.4	Manual, pedestrian, stand-on, seated, order picker operation	seat			
	1.5	Load capacity/rated load	Q	t	1.6	2
	1.6	Load centre distance	c	mm	500	
	1.8	Load distance	x	mm	409 <sup>1)</sup>	416 <sup>1)</sup>
	1.9	Wheelbase	y	mm	1,550	
	Weights	2.1	Service weight			2,800
2.2		Axle load with load front/rear			3,870 / 520	4,500 / 590
2.3		Axle load without load front/rear			1,340 / 1,460	1,350 / 1,750
Wheels / frame	3.1	Tyres			SE	
	3.2	Tyre size, front			6.50-10	
	3.3	Tyre size, rear			18x7-8	
	3.5	Wheels, number front/rear (x = driven wheels)			2x/2	
	3.6	Tread width, front	b <sub>10</sub>	mm	930	
	3.7	Tread width, rear	b <sub>11</sub>	mm	870	
	Basic dimensions	4.1	Tilt of mast/fork carriage forward/backward	$\alpha/\beta$		°
4.2		Mast height (lowered)	h <sub>1</sub>	mm	2,205	2,212
4.3		Free lift	h <sub>2</sub>	mm	150	
4.4		Lift	h <sub>3</sub>	mm	3,300	
4.5		Extended mast height	h <sub>4</sub>	mm	3,879	3,901
4.7		Height of overhead guard	h <sub>6</sub>	mm	2,145	
4.8		Seat height/stand height	h <sub>7</sub>	mm	1,048	
4.12		Coupling height	h <sub>10</sub>	mm	380	
4.19		Overall length	l <sub>1</sub>	mm	3,464	3,491
4.20		Length to face of forks	l <sub>2</sub>	mm	2,314	2,341
4.21		Overall width	b <sub>1</sub> /b <sub>2</sub>	mm	1,110	
4.22		Fork dimensions	s/e/l	mm	40 / 100 / 1,150	
4.23		Fork carriage ISO 2328, class/type A, B			2A	
4.24		Fork carriage width	b <sub>3</sub>	mm	980	
4.31		Floor clearance with load under mast	m <sub>1</sub>	mm	100	107
4.32		Ground clearance, centre of wheelbase	m <sub>2</sub>	mm	120	
4.33		Aisle width for pallets 1000 x 1200 sideways	Ast	mm	3,646	3,664
4.34	Aisle width for pallets 800 x 1200 lengthways	Ast	mm	3,846	3,864	
4.35	Turning radius	W <sub>a</sub>	mm	2,037	2,055	
4.36	Smallest pivot point distance	b <sub>13</sub>	mm	545		
Performance data	5.1	Travel speed, laden/unladen			km/h	
		Travel speed Remote, laden/unladen			km/h	
	5.2	Lift speed, laden/unladen			m/s	
	5.3	Lowering speed, laden/unladen			0.6 / 0.62	
	5.5	Drawbar pull w. / w.o. load			12,100	11,900
	5.7	Gradeability laden/unladen			26	23
	5.9.2	Acceleration laden/unladen to 15 m			4.8 / 4.4	5.1 / 4.6
5.10	Service brake			hydrostatic		
5.11	Parking brake			Automatic parking brake		
Combustion engine	7.1	Engine manufacturer / type			VW / BXT	
	7.2	Engine output according to ISO 1585	kW		29	
	7.3	Rated revolutions per minute	/min		2,500	
	7.4	No. of cylinders			4	
	7.4.1	Cubic capacity	cm <sup>3</sup>		1,896	
	7.5.1	Fuel consumption acc. to VDI cycle	l/h		2.3	2.5
Misc.	8.1	Type of drive control			hydrostatic	
	8.2	Working pressure for attachments	bar		160	
	8.3	Oil flow for attachments	l/min		30	
	8.4	Sound pressure level at operator's ear as per EN 12053	dB (A)		77	
	8.5	Trailer coupling, model/type DIN			DIN 15170 type H	

<sup>1)</sup> Integrated Sideshifter +27,5 mm

# Technical data in line with VDI 2198

				Jungheinrich		
				TFG 316s	TFG 320s	
Identification	1.1	Manufacturer (abbreviation)				
	1.2	Model				
	1.3	Drive		LPG		
	1.4	Manual, pedestrian, stand-on, seated, order picker operation		seat		
	1.5	Load capacity/rated load	Q	t	1.6	2
	1.6	Load centre distance	c	mm	500	
	1.8	Load distance	x	mm	409 <sup>1)</sup>	416 <sup>1)</sup>
	1.9	Wheelbase	y	mm	1,550	
	Weights	2.1	Service weight		2,800	3,100
2.2		Axle load with load front/rear		3,860 / 530	4,490 / 600	
2.3		Axle load without load front/rear		1,330 / 1,470	1,340 / 1,760	
Wheels / frame	3.1	Tyres		SE		
	3.2	Tyre size, front		6.50-10		
	3.3	Tyre size, rear		18x7-8		
	3.5	Wheels, number front/rear (x = driven wheels)		2x/2		
	3.6	Tread width, front	b <sub>10</sub>	mm	930	
	3.7	Tread width, rear	b <sub>11</sub>	mm	870	
	Basic dimensions	4.1	Tilt of mast/fork carriage forward/backward		$\alpha/\beta$ °	
4.2		Mast height (lowered)		2,205	2,212	
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	5.2	Lift speed, laden/unladen		m/s		
	5.3	Lowering speed, laden/unladen		m/s		
	5.5	Drawbar pull w. / w.o. load		N	12,100	12,400
	5.7	Gradeability laden/unladen		%	27	26
	5.9.2	Acceleration laden/unladen to 15 m		S	5 / 4.6	5.1 / 4.7
	5.10	Service brake		hydrostatic		
5.11	Parking brake		Automatic parking brake			
Combustion engine	7.1	Engine manufacturer / type		VW / BEF		
	7.2	Engine output according to ISO 1585		kW		
	7.3	Rated revolutions per minute		/min		
	7.4	No. of cylinders		4		
	7.4.1	Cubic capacity		cm <sup>3</sup>		
	7.5	Fuel consumption acc. to VDI cycle		kg/h	2.1	2.3
Misc.	8.1	Type of drive control		hydrostatic		
	8.2	Working pressure for attachments		bar		
	8.3	Oil flow for attachments		l/min		
	8.4	Sound pressure level at operator's ear as per EN 12053		dB (A)		
	8.5	Trailer coupling, model/type DIN		DIN 15170 type H		

<sup>1)</sup> Integrated Sideshifter +27,5 mm

# DFG/TFG 316s/320s



## Operator-oriented workstation

The ergonomics of the generously configured operator's workstation guarantee relaxed, fatigue-free work:

- Comfortable and safe access and exit thanks to a large entry step easily visible from above.
- Height and rake adjustable, slim steering column with memory function for maximum knee and legroom: The steering column can be tilted forward simply by pulling on the steering wheel lever.
- Excellent all-round visibility thanks to special roof and panel design as well as unobstructed roof window made from laminated safety glass.
- Clear view of the load thanks to optimised chain and hose configuration.
- Compact nested mast profile with outstanding visibility.
- Particularly comfortable operation due to the integration of all controls into the armrest which moves with the operator.
- Operator-oriented storage concept for intuitive operation.
- High-resolution, contrast-rich colour TFT display with self-explanatory symbols.
- USB power supply port for power supply for charging various devices.

- Limited vibrations experienced by the operator as the cab is not directly connected to the frame (floating cab).

## Ergonomic and easily adjustable operator's environment

- A choice of five changeable travel programs.
- Stepless single-point adjustment of the armrest in two axis directions.
- Large armrest with adjustable tilt, available in different upholstery fabrics and with a spacious storage compartment.
- A choice of three different controls.
- Single or double pedal operation.
- Adjustable lever and axis assignment of the controls.

# Benefit from the advantages



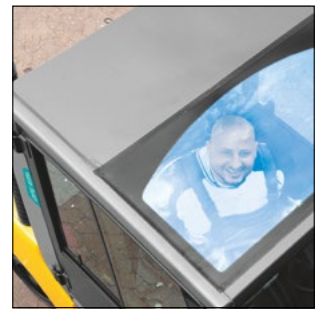
Maximum throughput



Workstation is comfortable and helps to maximise productivity



VW engines with low energy consumption



Outstanding all-round visibility

## Performance and drive characteristics

A hydrostatic drive gives you the best energy efficiency coupled with maximum throughput – particularly when reversing:

- Stepless power transmission and high starting torques.
- Electronic control for precise adjustment of drive and hydraulic functions.
- The five electronically selectable operating/travel programs ensure optimum performance parameters for every application.
- Automatic increase in rpm during lifting and lowering.
- Very precise control of travel speed – the truck is very responsive.
- Low maintenance costs due to direct drive without wearing parts, such as clutch, differential and gears.
- Hydrostatic steering ensures steering is effortless and very precise.

## Safety

Outstanding travel dynamics and performance levels require a high level of safety. Our hydrostatic drive trucks already offer you a comprehensive safety package as standard:

- Deactivation of the hydraulic functions if seat is unoccupied.

- No uncontrolled roll-back on ramps or inclines due to the automatic parking brake, even with the engine switched off.
- Excellent stability due to extremely low inherent centre of gravity and high pivot steer axle in the newest generation.
- Damping on mast and tilt cylinders for increased handling safety.

A range of additional operator assistance options provides even more safety for the operator, truck and load:

- Access Control: The access control system allows operation of the fork lift only if the 'seat occupied' and belt lock detection systems have been activated in turn.
- Drive Control: The speed control which automatically reduces the speed of travel when cornering and from a defined lift height.
- Lift Control (includes Drive Control): Automatically reduces the tilt speed of the mast from a defined lift height. Tilt angle shown on separate display.

## Hydraulics

The high-performance filter system ensures cleaner oil and a long service life for all components:

- Full-flow hydraulic oil filtration with combined suction and return filtering for maximum oil purity.
- Hydraulic tank integrated in frame.
- Ventilation of hydraulic tank via filter.
- Pressure relief valves protect against excess pressure and overloading.

## Brakes

The hydrostatic drive allows completely wearfree braking:

- Frequent brake pedal operation is no longer necessary.
- Parking brake: spring-loaded laminated oil immersed parking brake is a maintenance-free, enclosed system.

## Intelligent controls and electronics

- Software and hardware for controls developed and produced in-house.
- Sensitive adjustment of hydraulic functions via electromagnetic valves.
- Splash-proof electronic drive and hydraulic controls in CAN-Bus design.

## Engines

- State-of-the-art engines with performance figures falling far within the strict statutory limit values.
- Powerful yet low-consumption engines.

