

Comfortable and safe operator's cab featuring exemplary ergonomics

Hydrodynamic drive for efficient power transfer with maintenance free laminated brakes

Especially quiet: Only 71 / 73 dB(A) in the cab

Large capacity industrial engines which deliver high torque at low speeds



## **DFG/TFG 660/670/680/690/S80/S90**

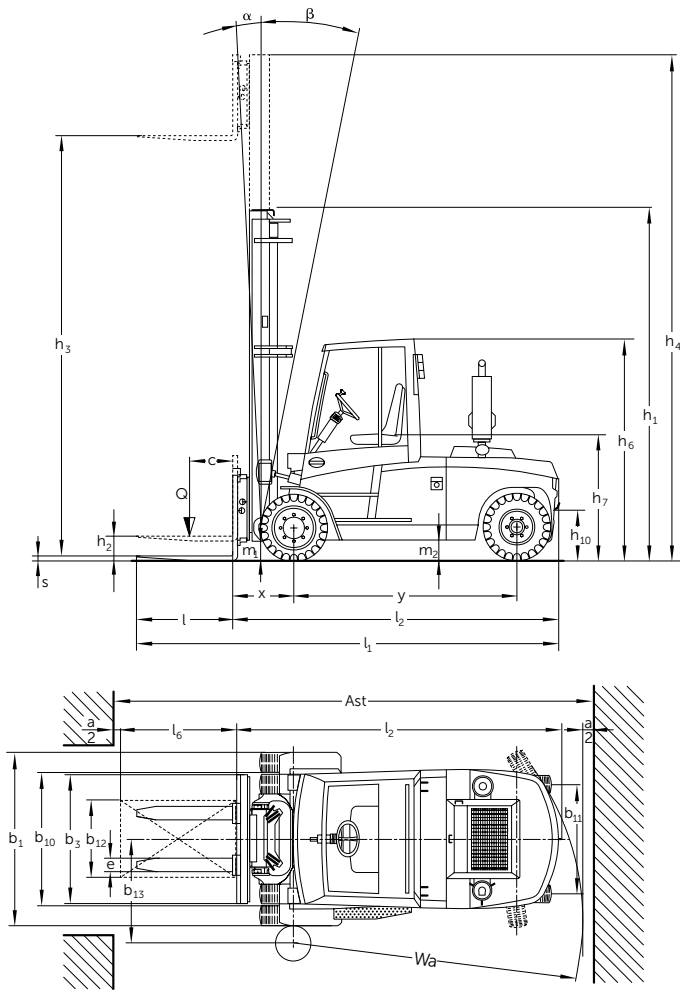
**Diesel and LPG forklifts with hydrodynamic drive (Torque Converter) (6,000/7,000/8,000/9,000 kg)**

Jungheinrich diesel fork lift trucks with hydrodynamic drives (torque converter) offer high throughputs for transport duties over medium to long-distance routes. In these situations, the advantages of this drive technology can be clearly seen: Smooth, judder-free operation and optimal efficiency at medium to high speeds.

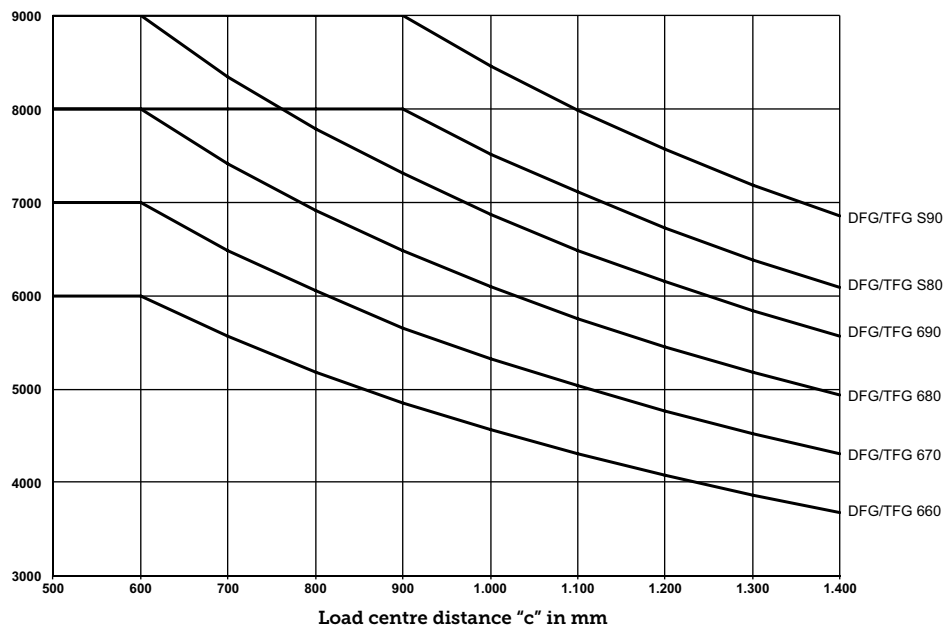
The high-performance industrial engines ensure high torque at low rpm, thus increasing fuel efficiency and reducing noise. These robust engines are specially designed for use in fork lift trucks. This ensures high reliability and long service lives, even

in demanding applications. Environmentally friendly soot / particulate filters are available as an option for diesel fork lifts. A 3-way catalytic converter is standard for LPG fork lift trucks. These 6 to 9-tonne trucks are also well suited for all applications in respect to travel and operational comfort. The ergonomic arrangement of the whole workstation offers safety and comfort, protecting the health of the operator. Consequently, the high-performance trucks offer the best conditions for relaxed and focused operation.

# DFG/TFG 660/670/680/690/S80/S90



Capacity (kg)



# DFG/TFG 660/670/680/690/S80/S90

Standard mast types DFG 660/DFG 670/DFG 680/DFG 690/DFG S80/DFG S90/TFG 660/TFG 670/TFG 680/TFG 690/TFG S80/TFG S90											
	Lift $h_3$	Lowered mast height $h_1$				Free lift $h_2$	Extended mast height $h_4$				Mast tilt forward / back $\alpha/\beta$ (°)
	(mm)	(mm)				(mm)	(mm)				
		DFG 660 / DFG 670 / TFG 660 / TFG 670	DFG 680 / TFG 680	DFG 690 / DFG S80 / TFG 690 / TFG S80	DFG S90 / TFG S90		DFG 660 / DFG 670 / TFG 660 / TFG 670	DFG 680 / TFG 680	DFG 690 / DFG S80 / TFG 690 / TFG S80	DFG S90 / TFG S90	
Duplex ZT	3600	2710	3010	3160	3310	0	4510	4810	4960	5110	6/9
	4000	2910	3210	3360	3510	0	4910	5210	5360	5510	6/9
	4500	3160	3460	3610	3760	0	5410	5710	5860	6010	6/9
	5000	3410	3710	3860	4010	0	5910	6210	6360	6510	6/9
	5500	3660	3960	4110	4260	0	6410	6710	6860	7010	6/9
	6000	3910	4210	4360	4510	0	6910	7210	7360	7510	6/5
	6500	4160	4460	4610	4760	0	7410	7710	7860	8010	2/3
Duplex ZZ	3600	2875	3025	3175	3325	1800	4675	4825	4975	5125	6/9
	4000	3075	3225	3375	3525	2000	5075	5225	5375	5525	6/9
	4500	3325	3475	3625	3775	2250	5675	5725	5875	6025	6/9
	5000	3575	3725	3875	4025	2500	6075	6225	6375	6525	6/9
	5500	3825	3975	4125	4275	2750	6575	6725	6875	7025	6/9
	6000	4075	4225	4375	4525	3000	7075	7225	7375	7525	6/5
	6500	4325	4475	4625	4775	3300	7575	7725	7875	8025	2/3
Triplex DZ	4500	2585	2735	2885	3035	1500	5586	5736	5886	6036	6/5
	5000	2752	2902	3052	3202	1667	6086	6236	6386	6536	6/5
	5500	2918	3068	3218	3368	1833	6586	6736	6886	7036	6/5
	6000	3085	3235	3385	3535	2000	7086	7236	7386	7536	2/3
	6500	3252	3402	3552	3702	2167	7586	7736	7886	8036	2/3
	7000	3418	3568	3718	3868	2333	8086	8236	8386	8536	2/3
	7500	3585	3735	3885	4035	2500	8586	8736	8886	9036	2/3
	8000	3752	3902	4052	4202	2667	9086	9236	9386	9536	2/3

# Technical data in line with VDI 2198

Identification			Jungheinrich						
			DFG 660	DFG 670	DFG 680	DFG 690	DFG S80	DFG S90	
1.1	Manufacturer (short form)								
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	6	7	8	9	8	9	
1.6	Load centre distance	c mm	600	600	600	600	900	900	
1.8	Load distance	x mm	680	680	700	700	700	700	
1.9	Wheelbase	y mm	2295	2295	2395	2545	2545	2745	
Weights	2.1	Service weight	kg	10500	11400	12400	14000	14400	15500
	2.2	Axle load, w. load, front / rear	kg	14900 / 1600	16400 / 2000	18100 / 2300	20500 / 2500	20400 / 2000	22500 / 2000
	2.3	Axle load, w.o. load, front / rear	kg	5000 / 5500	5500 / 5900	6000 / 6400	6800 / 7200	7200 / 7200	7800 / 7700
Wheels / chassis	3.1	Tyres	SE-L						
	3.2	Tyre size, at front	mm	355 / 65-15	8.25-15	8.25-15	300-15	300-15	300-15
	3.3	Tyre size, at rear	mm	8.25-15	8.25-15	8.25-15	300-15	300-15	300-15
	3.5	Wheels, number front/rear (x = driven wheels)		2x/2	4x/2	4x/2	4x/2	4x/2	4x/2
	3.6	Track width, front	b <sub>10</sub> mm	1590	1520	1520	1580	1580	1580
	3.7	Track width, rear	b <sub>11</sub> mm	1535	1535	1535	1495	1495	1495
	Basic dimensions	4.1	Tilt of mast/fork carriage forward/backward	$\alpha/\beta$ °	6/9				
4.2		Mast height (lowered)	h <sub>1</sub> mm	2710	2710	3010	3160	3160	3310
4.4		Lift	h <sub>3</sub> mm	3600					
4.5		Extended mast height	h <sub>4</sub> mm	4510	4510	4810	4960	4960	5110
4.7		Height of overhead guard	h <sub>6</sub> mm	2705					
4.8		Seat height/stand height	h <sub>7</sub> mm	1600					
4.12		Coupling height	h <sub>10</sub> mm	500					
4.19		Overall length	l <sub>1</sub> mm	4760	4770	4880	5035	5640	5840
4.20		Length incl. back of forks	l <sub>2</sub> mm	3560	3570	3680	3835	3840	4040
4.21		Total width	b <sub>1</sub> /b <sub>2</sub> mm	1820	2002	2002	2150	2150	2150
4.22		Fork dimensions	s/e/l mm	60 / 150 / 1200	60 / 150 / 1200	70 / 150 / 1200	70 / 150 / 1200	70 / 180 / 1800	70 / 180 / 1800
4.23		Fork carriage ISO 2328, class/type A, B		4A					
4.24		Fork carriage width	b <sub>3</sub> mm	1800	2000	2000	2100	2100	2100
4.31		Floor clearance with load under mast	m <sub>1</sub> mm	230					
4.32		Floor clearance centre wheelbase	m <sub>2</sub> mm	250					
4.33		Aisle width for pallets 1000 × 1200 sideways	Ast mm	5120	5130	5240	5545	5545	5795
4.34	Aisle width for pallets 800 × 1200 lengthways	Ast mm	5320	5330	5440	5745	5745	5995	
4.35	Turning radius	W <sub>a</sub> mm	3250	3250	3350	3650	3900	3900	
4.36	Smallest pivot point distance	b <sub>13</sub> mm	1270	1270	1320	1390	1490	1490	
Performance data	5.1	Travel speed, w. / w.o. load	km/h	22.4 / 22.5	22.4 / 22.6	22.4 / 22.5	22.4 / 22.6	22.3 / 22.6	22.3 / 22.6
	5.2	Lift speed, w. / w.o. load	m/s	0.5 / 0.6	0.4 / 0.6	0.4 / 0.6	0.4 / 0.6	0.4 / 0.6	0.4 / 0.6
	5.3	Lower speed, w. / w.o. load	m/s	0.6 / 0.36					
	5.5	Drawbar pull w. / w.o. load	N	49570 / 49570	49570 / 49570	49570 / 49570	49570 / 49570	49570 / 49570	52930 / 52930
	5.7	Gradeability laden/unladen	%	30.3 / 32	28.7 / 31	27.1 / 31	24.6 / 28	21.5 / 25	20.9 / 24
	5.9	Acceleration time w. / w.o. load	S	6 / 5	6 / 5	6 / 5	7 / 6	7 / 6	7 / 6
	5.10	Service brake		hydraulic					
Combustion engine	7.1	Engine manufacturer / type		Perkins 1104D E44TA	Perkins 1104D E44TA	Perkins 1104D E44TA	Perkins 1104D E44TA	Perkins 1104D E44TA	Perkins 1106D E66TA
	7.2	Engine output according to ISO 1585	kW	91	91	91	91	91	90
	7.3	Rated revolutions per minute	/min	2200					
	7.4	No. of cylinders		4	4	4	4	4	6
	7.4.1	Cubic capacity	cm <sup>3</sup>	4400	4400	4400	4400	4400	6600
	7.5	Fuel consumption acc. to VDI cycle	l/h	7.7	8.1	8.5	8.8	8.8	10.3
	Misc.	8.1	Type of drive control		hydrodynamic				
8.2		Working pressure for attachments	bar	160					
8.3		Oil flow for attachments	l/min	80					
8.4		Sound pressure level at operator's ear according to EN 12053	dB (A)	73	73	73	73	73	70

# Technical data in line with VDI 2198

				Jungheinrich					
Identification			TFG 660	TFG 670	TFG 680	TFG 690	TFG S80	TFG S90	
	1.1	Manufacturer (short form)							
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	6	7	8	9	8	9	
1.6	Load centre distance	c mm	600	600	600	600	900	900	
1.8	Load distance	x mm	680	680	700	700	700	700	
1.9	Wheelbase	y mm	2395	2395	2495	2645	2645	2645	
Weights	2.1	Service weight	kg	10970	11570	12700	14200	14600	15200
	2.2	Axle load, w. load, front / rear	kg	14810 / 2160	16670 / 1900	18600 / 2100	20700 / 2500	20100 / 2500	22100 / 2100
	2.3	Axle load, w.o. load, front / rear	kg	5360 / 5610	5660 / 5910	5800 / 6100	6900 / 7300	7300 / 7300	7500 / 7700
Wheels / chassis	3.1	Tyres	SE-L						
	3.2	Tyre size, at front	mm	355/65-15	8.25-15	8.25-15	300-15	300-15	300-15
	3.3	Tyre size, at rear	mm	8.25-15	8.25-15	8.25-15	300-15	300-15	300-15
	3.5	Wheels, number front/rear (x = driven wheels)		2x/2	4x/2	4x/2	4x/2	4x/2	4x/2
	3.6	Track width, front	b <sub>10</sub> mm	1590	1520	1520	1580	1580	1580
	3.7	Track width, rear	b <sub>11</sub> mm	1535	1535	1535	1495	1495	1495
	Basic dimensions	4.1	Tilt of mast/fork carriage forward/backward	$\alpha/\beta$ °	6/9				
4.2		Mast height (lowered)	h <sub>1</sub> mm	2710	2710	3010	3160	3160	3310
4.4		Lift	h <sub>3</sub> mm	3600					
4.5		Extended mast height	h <sub>4</sub> mm	4510	4510	4810	4960	4960	5110
4.7		Height of overhead guard	h <sub>6</sub> mm	2705	2705	2705	2705	2705	2720
4.8		Seat height/stand height	h <sub>7</sub> mm	1600					
4.12		Coupling height	h <sub>10</sub> mm	500					
4.19		Overall length	l <sub>1</sub> mm	4860	4870	4980	5135	5740	5740
4.20		Length incl. back of forks	l <sub>2</sub> mm	3660	3670	3780	3935	3940	3940
4.21		Total width	b <sub>1</sub> /b <sub>2</sub> mm	1820	2002	2002	2150	2150	2150
4.22		Fork dimensions	s/e/l mm	60 / 150 / 1200	60 / 150 / 1200	70 / 150 / 1200	70 / 150 / 1200	70 / 180 / 1800	70 / 180 / 1800
4.23		Fork carriage ISO 2328, class/type A, B		4A					
4.24		Fork carriage width	b <sub>3</sub> mm	1800	2000	2000	2100	2100	2100
4.31		Floor clearance with load under mast	m <sub>1</sub> mm	230					
4.32		Floor clearance centre wheelbase	m <sub>2</sub> mm	250					
4.33		Aisle width for pallets 1000 x 1200 sideways	Ast mm	5220	5230	5440	5695	5695	5695
4.34	Aisle width for pallets 800 x 1200 lengthways	Ast mm	5420	5430	5640	5895	5895	5895	
4.35	Turning radius	W <sub>a</sub> mm	3350	3350	3550	3800	3800	3800	
4.36	Smallest pivot point distance	b <sub>13</sub> mm	1320	1320	1370	1440	1440	1440	
Performance data	5.1	Travel speed, w. / w.o. load	km/h	22.4 / 22.6					
	5.2	Lift speed, w. / w.o. load	m/s	0.4 / 0.48					
	5.3	Lower speed, w. / w.o. load	m/s	0.6 / 0.48	0.6 / 0.36	0.6 / 0.36	0.6 / 0.36	0.6 / 0.36	0.6 / 0.36
	5.5	Drawbar pull w. / w.o. load	N	45650 / 45650					
	5.7	Gradeability laden/unladen	%	27.5 / 30	27.5 / 31	26.5 / 30	23 / 27	20.2 / 23	17.6 / 20
	5.9	Acceleration time w. / w.o. load	S	6 / 5	6 / 5	6 / 5	7 / 6	7 / 6	7 / 6
5.10	Service brake		hydraulic						
Combustion engine	7.1	Engine manufacturer / type	GM V8 5,7L						
	7.2	Engine output according to ISO 1585	kW	85					
	7.3	Rated revolutions per minute	/min	2200					
	7.4	No. of cylinders		8					
	7.4.1	Cubic capacity	cm <sup>3</sup>	5700					
	7.5.1	Fuel consumption acc. to VDI cycle	kg/h	8	8.5	8.9	10.2	10.2	10.7
Misc.	8.1	Type of drive control	hydrodynamic						
	8.2	Working pressure for attachments	bar	160					
	8.3	Oil flow for attachments	l/min	80					
	8.4	Sound pressure level at operator's ear according to EN 12053	dB (A)	71					

# Benefit from the advantages



Ergonomic operator workstation



180° rotating seat (optional)



Height and tilt-adjustable steering column



Excellent service accessibility

## Ergonomic cabin

Comfortable, performance orientated ergonomics:

- Easy truck entry and exit; low step position, easily seen from above.
- Operator cabin completely sealed from engine and suppressed against noise and vibration.
- Smoothly adjustable and mechanically cushioned comfort seat (air cushioning optional).
- Height and tilt adjustable steering column.
- Hydraulic levers fixed to the operator seat (SOLO-PILOT) automatically move with all seat adjustments.
- Travel direction switch on the steering column (optionally available on the accelerator or integrated into the MULTI-PILOT control lever).
- Extensive, comfortable leg room with combined brake/inch pedal.
- Excellent visibility through the mast due to the location of hydraulic cylinders hidden behind the mast profiles.
- Comfortable operation in all weather conditions with the comprehensively equipped standard cabin.
- Specially designed roof and cabin sides offering exceptional all-round visibility.
- 180 degrees swivelling (left) seat (optional).

## Powerful engines

The turbo diesel industrial engines are specially designed for the required drive power in fork lift truck applications.

- DFG 660–690 and S80: 4-cylinder-turbo diesel engine (4.4-l-Perkins) with electronic injection producing 91 kW at 2200 r.p.m. Maximum Torque: 490 Nm at 1400 r.p.m.

- DFG S90: 6-cylinder-turbo diesel engine (6.6-l-Perkins) with electronic injection producing 90 kW at 2200 r.p.m. Maximum Torque: 545 Nm at 1400 r.p.m.
- Exhaust emissions below allowable emission values in accordance with ISO 8178 (fulfils exhaust emission part 3a for diesel engines).
- Particle/soot filter (optional).
- 115 litre fuel tank integrated into chassis.

## Strong hydrodynamic drive

The hydrodynamic drive with electronically controlled 2 speed power shift transmission ensures an economic transmission of power. Other advantages:

- Precise and smooth power transmission.
- Automatic shift and electronically controlled shift lock at travel speeds of more than 4 km/h.
- Inch pedal (combined crawl-speed/brake pedal) for precise travel during full lift capacity.
- Travel comfort packet (optional) with automatic increase in rpm during lifting, hydrostatic handling and large multifunction display. Especially suited for reversing and manoeuvring.

## Service

Low service costs through good accessibility:

- Tilttable cabin – hinged at the rear and hydraulically operated.
- Simple access for daily maintenance (oil and water).
- Long service intervals of 500 hours.

## Intelligent electronics

- Splash-proof electronic drive and hydraulic controllers (as per IP 64) in CAN-Bus design.

- 12-volt battery with 135 Ah/115 A alternator.
- Precise control of hydraulic functions using electromagnetic valves.

## Precise steering

The maximum in steering comfort and highest safety through:

- Hydrostatic steering for extremely light and precise steering.
- Steering axle with integrated steer cylinder.

## Brake

Two independent brake systems on the front wheels:

- Foot brake: Hydraulic servo, maintenance free, encapsulated multi-disc, oil immersed brake with servo assistance.
- Parking brake: Electro-hydraulic disc brake operated via a button located on the display.

## Reliable hydraulics

- Fine filtration in the fluid return circuit.
- 180-l hydraulic tank integrated into the frame.
- Ventilation of hydraulic tank via filter.
- Pressure relief valves protect against excess pressure and overloading.

## Strong masts

- Slender mast profiles with lift cylinders concealed behind allow an extra-wide field of view.
- Optimised visibility through free-view fork carriage.
- Fork carriage in accordance with FEM/ISO-2328-4A.

## Additional equipment

Many custom build options and various attachments are available in order to adapt the truck to suit customer requests or different applications.



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The German production facilities in Norderstedt and Moosburg are certified. **ISO 9001**  
**ISO 14001**

Jungheinrich fork lift trucks meet European safety requirements.



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