

# VX Series

Diesel and LP Gas Forklift Trucks

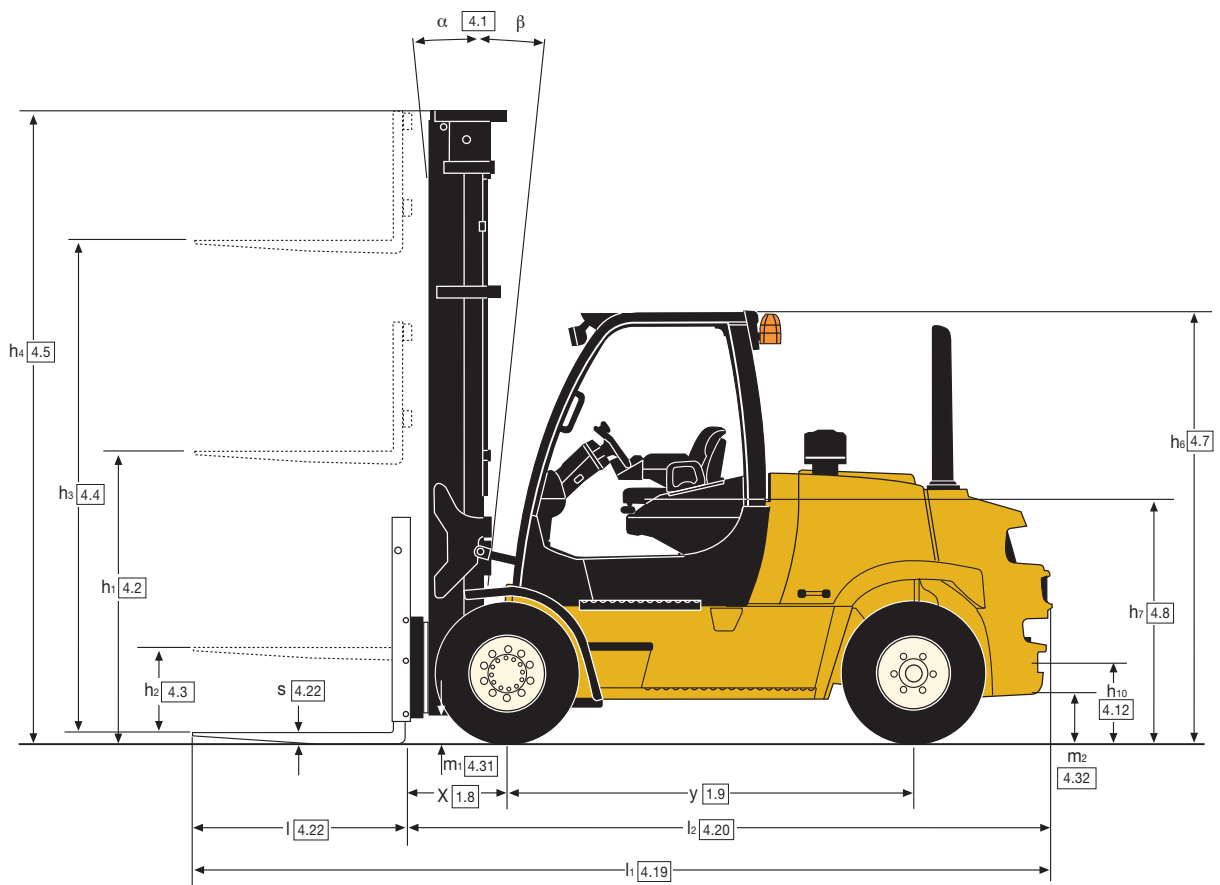
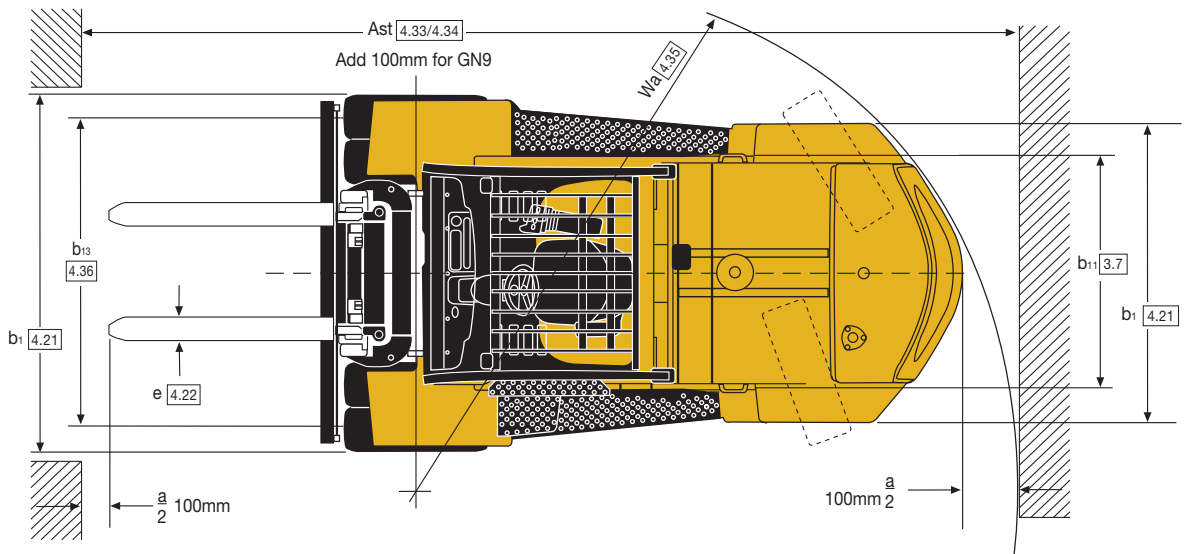
8,000kg and 9,000kg



- Powerful Engines
- Intellix Vehicle System Manager
- Canbus technology
- Techtronix 332 Series transmission
- Oil Immersed Brakes
- Yale Accutouch Mini Lever Module
- On-board Diagnostics

**Yale**   
People. Products. Productivity.

# Truck Dimensions



## GDP/GLP 80VX6 Single and Dual Drive mast details and capacity ratings (kg)

Model							GDP/GLP 80VX6					
Tyres							Single* / Dual Drive Wheel		Single* / Dual Drive Wheel		Single* / Dual Drive Wheel	
Width across tyres							with carriage		with carriage + sideshift		with carriage + sideshifting fork postioner	
Masts	OAH h1	FFH h2+s	MFH h3+s	h4	Tilt		600mm Load Centre		600mm Load Centre		600mm Load Centre	
					F	B	Capacity at max. height (kg)	Capacity to lift height (kg to mm)	Capacity at max. height (kg)	Capacity to lift height (kg to mm)	Capacity at max. height (kg)	Capacity to lift height (kg to mm)
					2 Stage LFL (V)	2712	105	3065	4225	5	9	8000
2962	105	3565	4725	5		9	8000	-	7570	-	7520	-
3462	105	4565	5725	5		9	8000	-	7540	-	7500	-
3962	105	5565	6725	5		9	8000	-	7520	-	7470	-
4212	105	6065	7225	5		9	7710	8000 to 5815	7240	7510 to 5815	7200	7460 to 5815
3 Stage FFL (E)	2702	1565	4615	5952	5	6	8000	-	7560	-	7530	-
	3002	1865	5515	6852	5	6	8000	-	7540	-	7510	-
	3152	2015	5965	7302	5	6	7940	8000 to 5915	7480	7530 to 5915	7450	7500 to 5915

\* No capacity deration when single drive tyres fitted. Single drive option available with superelastic tyres only; dual drive option features pneumatic tyres.

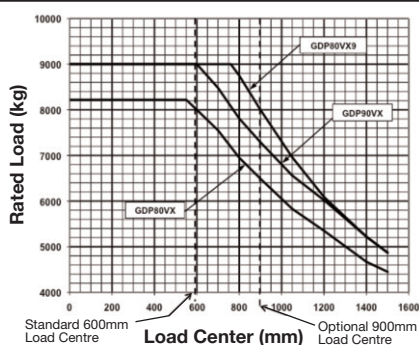
## GDP/GLP 80VX9 Dual Drive mast details and capacity ratings (kg) - Pneumatic tyres

Model							GDP/GLP 80VX9					
Tyres							Dual Drive Wheel		Dual Drive Wheel		Dual Drive Wheel	
Width across tyres							with carriage		with carriage + sideshift		with carriage + sideshifting fork postioner	
Masts	OAH h1	FFH h2+s	MFH h3+s	h4	Tilt		900mm Load Centre		900mm Load Centre		900mm Load Centre	
					F	B	Capacity at max. height (kg)	Capacity to lift height (kg to mm)	Capacity at max. height (kg)	Capacity to lift height (kg to mm)	Capacity at max. height (kg)	Capacity to lift height (kg to mm)
					2 Stage LFL (V)	2712	105	3065	4225	5	9	8000
2962	105	3565	4725	5		9	8000	-	7530	-	7490	-
3462	105	4565	5725	5		9	7880	8000 to 4415	7400	7510 to 4415	7360	7460 to 4415
3962	105	5565	6725	5		9	7000	8000 to 4415	6560	7490 to 4415	6520	7450 to 4415
4212	105	6065	7225	5		9	6490	8000 to 4415	6070	7480 to 4415	6040	7440 to 4415
3 Stage FFL (E)	2702	1565	4615	5952	5	6	7880	8000 to 4465	7410	7520 to 4465	7380	7500 to 4465
	3002	1865	5515	6852	5	6	7080	8000 to 4465	6650	7500 to 4465	6630	7480 to 4465
	3152	2015	5965	7302	5	6	6640	8000 to 4465	6220	7490 to 4465	6200	7470 to 4465

## GDP/GLP 90VX6 Dual Drive mast details and capacity ratings (kg) - Pneumatic tyres

Model							GDP/GLP 90VX6					
Tyres							Dual Drive Wheel		Dual Drive Wheel		Dual Drive Wheel	
Width across tyres							with carriage		with carriage + sideshift		with carriage + sideshifting fork postioner	
Masts	OAH h1	FFH h2+s	MFH h3+s	h4	Tilt		600mm Load Centre		600mm Load Centre		600mm Load Centre	
					F	B	Capacity at max. height (kg)	Capacity to lift height (kg to mm)	Capacity at max. height (kg)	Capacity to lift height (kg to mm)	Capacity at max. height (kg)	Capacity to lift height (kg to mm)
					2 Stage LFL (V)	2712	105	3065	4225	5	9	9000
2962	105	3565	4725	5		9	9000	-	8490	-	8440	-
3462	105	4565	5725	5		9	9000	-	8470	-	8420	-
3962	105	5565	6725	5		9	8720	9000 to 5315	8190	8450 to 5315	8140	8400 to 5315
4212	105	6065	7225	5		9	8120	9000 to 5315	7620	8440 to 5315	7570	8390 to 5315
3 Stage FFL (E)	2702	1565	4615	5952	5	6	9000	-	8500	-	8470	-
	3002	1865	5515	6852	5	6	8830	9000 to 5365	8320	8480 to 5365	8290	8450 to 5365
	3152	2015	5965	7302	5	6	8300	9000 to 5365	7810	8470 to 5365	7780	8430 to 5365

### Rated Load vs. Load Center



#### Truck Configuration

2 stage LFL mast at 5565mm.  
2230mm standard hook carriage with load backrest.

The ratings are computed using fork lengths as below:

	Load Centre (mm)	Fork length (mm)
All models	500 to 700	1200
	Over 700 to 1000	1500
	Over 1000 to 1200	1800
	Over 1220	2400

## VDI 2198 - General Specifications Diesel Powered

		Yale	Yale	Yale	Yale					
Characteristics	1.1 Manufacturer	Yale	Yale	Yale	Yale					
	1.2 Model designation	<b>GDP 80VX6</b> (Single Drive)	<b>GDP 80VX6</b> (Dual Drive Wheel)	<b>GDP 80VX9</b> (Dual Drive Wheel)	<b>GDP 90VX6</b> (Dual Drive Wheel)					
	Model - Manufacturer designation	Veracitor	Veracitor	Veracitor	Veracitor					
	Engine/Transmission	Cummins 3.3L / Techtronix 332	Cummins 3.3L / Techtronix 332	Cummins 3.3L / Techtronix 332	Cummins 3.3L / Techtronix 332					
	Brake Type	Oil immersed	Oil immersed	Oil immersed	Oil immersed					
1.3 Power: battery, diesel, LPG, electric mains		Diesel	Diesel	Diesel	Diesel					
1.4 Operation: manual, pedestrian, stand, seat, order picker		Seat	Seat	Seat	Seat					
1.5 Load capacity	Q (kg)	8,000	8,000	8,000	9,000					
1.6 Load centre	c (mm)	600	600	900	600					
1.8 Load distance (load face)	x (mm)	600	600	600	600					
1.9 Wheelbase	y (mm)	2450	2450	2450	2450					
Weights	2.1 Unladen weight	kg	11553	11259	12271	11728				
	2.2 Axle loading laden, front/rear	kg	17548 / 2006	17416 / 1844	17118 / 3030	18762 / 1967				
	2.3 Axle loading unladen, front/rear	kg	5585 / 5968	5453 / 5806	5155 / 6992	5304 / 6424				
Wheels & Tyres	3.1 Tyres: L = Pneumatic, V = Cushion, SE = Supercushion		SE	L	L	L				
	3.2 Tyre size-front		355/50-20 SE	8.25 X 15 -14PR	8.25 X 15 -14PR	8.25 X 15 -14PR				
	3.3 Tyre size-rear		300 X 15 SE	8.25 X 15 -14PR	8.25 X 15 -14PR	8.25 X 15 -14PR				
	3.5 Number of wheels, front/rear (X = driven)		2X/2	4X/2	4X/2	4X/2				
	3.6 Track width, front	b10 (mm)	1682	2003	2003	2003				
3.7 Track width, rear	b11 (mm)	1575	1536	1536	1536					
Dimensions	4.1 Mast tilt, forward $\alpha$ /back $\beta$	degrees	5F/9B	5F/9B	5F/9B	5F/9B				
	4.2 Height of mast, lowered	h1 (mm)	3962	3962	3962	3962				
	4.3 Free lift ▲	h2 (mm)	105	105	105	105				
	4.4 Lift height ▲	h3 (mm)	5565	5565	5565	5565				
	4.5 Height of mast, extended ✚	h4 (mm)	6725	6725	6725	6725				
	4.7 Height to top of overhead guard ○	h6 (mm)	2531	2531	2531	2531				
	Height to top of Cab	mm	2549	2549	2549	2549				
	4.8 Seat height ✕	h7 (mm)	1540	1540	1540	1540				
	4.12 Towing coupling height	h10 (mm)	476	476	476	476				
	4.19 Overall length	l1 (mm)	5083	5083	5224	5145				
	4.20 Length to face of forks	l2 (mm)	3883	3883	4025	3945				
	4.21 Overall width ☉	b2 (mm)	1990	2239	2239	2239				
	4.22 Fork dimensions	s/e/l (mm)	65 / 200 / 1200	65 / 200 / 1200	65 / 200 / 1200	65 / 200 / 1200				
	4.23 Fork carriage to DIN 15173. Class, A/B		IV A	IV A	IV A	IV A				
	4.24 Fork carriage width ▶	b3 (mm)	2030	2030	2030	2030				
	Fork Spacing -Std Carriage - Minimum inside to inside edge	mm	173	65	65	65				
	Fork Spacing -Std Carriage - Maximum outside to outside edge	mm	253	1990	1990	1990				
4.31 Ground clearance under mast, laden	m1 (mm)	173	173	173	173					
4.32 Ground clearance at centre of wheelbase	m2 (mm)	253	253	253	253					
4.33 Aisle width with pallets 1000mm x 1200mm wide	Ast (mm)	5490	5490	5611	5540					
4.34 Aisle width with pallets 800mm x 1200mm long	Ast (mm)	5672	5672	5763	5722					
4.35 Outer turning radius	Wa (mm)	3673	3673	3794	3723					
4.36 Inner turning radius	b13 (mm)	362	362	362	362					
4.37 90° intersecting aisle (With pallet W = 1200mm, L = 1000mm)	mm	3045	3045	3115	3074					
4.40 Step Height (from ground to running board)	mm	321	321	321	321					
Step Height (between intermediate steps between running board and floor)	mm	256	256	256	256					
Performance	5.1 Travel speed laden/unladen ●	km/h	15.0 / 23.1	15.0 / 23.1	23.1	23.7	23.1	23.7		
	5.2 Lifting speed laden/unladen (2LFL)	m/sec	0.43	0.45	0.43	0.45	0.42	0.45	0.42	0.45
	5.3 Lowering speed laden/unladen (2LFL)	m/sec	0.41	0.37	0.41	0.37	0.41	0.37	0.41	0.37
	5.5 Drawbar pull laden/unladen, @ 1.6 km/h	N	53	53	53	53	53	53	53	53
	5.6 Drawbar pull laden/unladen, @ 4.8 km/h	KN	37	37	37	37	37	37	37	37
	5.7 Gradeability laden/unladen, @ 1.6 km/h	%	29	30	29	30	29	30	29	30
	5.8 Gradeability laden/unladen, @ 4.8 km/h	%	20	30	20	30	19	30	18	30
	5.10 Service brake		Hydraulic	Hydraulic	Hydraulic	Hydraulic				
	7.1 Engine manufacturer/type		Cummins QSB3.3	Cummins QSB3.3	Cummins QSB3.3	Cummins QSB3.3				
	7.2 Engine output, in accordance with ISO1585	kW	82 @2400	82 @2400	82 @2400	82 @2400				
7.3 Governed speed	rpm	2430	2430	2430	2430					
7.4 Number of cylinders/displacement	cm3	4 / 3261	4 / 3261	4 / 3261	4 / 3261					
7.5 Fuel Consumption per VDI test cycle	l/hr	9.6	9.9	10.2	10.7					
Other	8.1 Drive control		Electronically Controlled Powershift	Electronically Controlled Powershift	Electronically Controlled Powershift	Electronically Controlled Powershift				
	8.2 Working pressure for attachments (nominal relief pressure)	bar	155	155	155	155				
	8.3 Oil flow for attachments (nominal) ✦	l/min	93	93	93	93				
	8.4 Average noise level at operator's ear (without / with cab) ★	dB(A)	79 / 77	79 / 77	79 / 77	79 / 77				
	Guaranteed sound power 2001/14/EC	dB	104	104	104	104				
	8.5 Towing coupling type		Pin	Pin	Pin	Pin				
	8.7 Hydraulic Tank - capacity (drain & refill)	litres	70.9	70.9	70.9	70.9				
	8.8 Fuel Tank - Capacity (Diesel)	litres	74.8	74.8	74.8	74.8				

★ Measured according to the test cycles and based on the weighting values contained in EN12053

▲ Top of forks

✕ Full suspension seat in depressed position

✚ Without load backrest

☉ Dual drive, except where specified

▶ Add 50mm for load backrest

○ h6 subject to +/- 5mm tolerance. 2549mm for Cab option

✦ Variable

● Top speed limited with single tyre option per tyre manufactures ETRTO recommendation. All single tyre orders need to be approved in advance by the Counterbalance SPED Department (spedapps@nmhg.com)

**Spec sheet truck based on:**

5505 Bottom of forks / 5565mm Top of forks, 2 stage LFL mast with 2030mm carriage, 1200mm forks.

## VDI 2198 - General Specifications LPG Powered

		Yale	Yale	Yale	Yale					
Characteristics	1.1 Manufacturer	Yale	Yale	Yale	Yale					
	1.2 Model designation	<b>GLP 80VX6</b> (Single Drive)	<b>GLP 80VX6</b> (Dual Drive Wheel)	<b>GLP 80VX9</b> (Dual Drive Wheel)	<b>GLP 90VX6</b> (Dual Drive Wheel)					
	Model - Manufacturer designation	Veracitor	Veracitor	Veracitor	Veracitor					
	Engine/Transmission	GM 5.7L V8 / Techtronix 332	GM 5.7L V8 / Techtronix 332	GM 5.7L V8 / Techtronix 332	GM 5.7L V8 / Techtronix 332					
	Brake Type	Oil Immersed	Oil Immersed	Oil immersed	Oil immersed					
	1.3 Power: battery, diesel, LPG, electric mains	LPG	LPG	LPG	LPG					
	1.4 Operation: manual, pedestrian, stand, seat, order picker	Seat	Seat	Seat	Seat					
	1.5 Load capacity	Q (kg)	8,000	8,000	8,000	9,000				
	1.6 Load centre	c (mm)	600	600	900	600				
1.8 Load distance (load face)	x (mm)	600	600	600	600					
1.9 Wheelbase	y (mm)	2450	2450	2450	2450					
Weights	2.1 Unladen weight	kg	11634	11340	12352	11809				
	2.2 Axle loading laden, front/rear	kg	17566 / 2069	17434 / 1907	18281 / 2042	18780 / 2030				
	2.3 Axle loading unladen, front/rear	kg	5603 / 6031	5471 / 5869	5385 / 6967	5322 / 6487				
Wheels & Tyres	3.1 Tyres: L = Pneumatic, V = Cushion, SE = Supercushion		SE	L	L	L				
	3.2 Tyre size-front		355/50-20 SE	8.25 X 15 -14PR	8.25 X 15 -14PR	8.25 X 15 -14PR				
	3.3 Tyre size-rear		300 X 15 SE	8.25 X 15 -14PR	8.25 X 15 -14PR	8.25 X 15 -14PR				
Dimensions	3.5 Number of wheels, front/rear (X = driven)		2X / 2	4X / 2	4X/2	4X / 2				
	3.6 Track width, front	b10 (mm)	1682	2003	2003	2003				
	3.7 Track width, rear	b11 (mm)	1575	1536	1536	1536				
	4.1 Mast tilt, forward $\alpha$ /back $\beta$	degrees	5F / 9B	5F / 9B	5F/9B	5F / 9B				
	4.2 Height of mast, lowered	h1 (mm)	3962	3962	3962	3962				
	4.3 Free lift $\blacktriangle$	h2 (mm)	105	105	105	105				
	4.4 Lift height $\blacktriangle$	h3 (mm)	5565	5565	5565	5565				
	4.5 Height of mast, extended $\blackplus$	h4 (mm)	6725	6725	6725	6725				
	4.7 Height to top of overhead guard $\circ$	h6 (mm)	2531	2531	2531	2531				
	Height to top of Cab	mm	2549	2549	2549	2549				
	4.8 Seat height $\times$	h7 (mm)	1540	1540	1540	1540				
	4.12 Towing coupling height	h10 (mm)	476	476	476	476				
	4.19 Overall length	l1 (mm)	5083	5083	5224	5145				
	4.20 Length to face of forks	l2 (mm)	3883	3883	4024	3945				
	4.21 Overall width $\odot$	b2 (mm)	1990	2239	2239	2239				
	4.22 Fork dimensions	s/e/l (mm)	65 / 200 / 1200	65 / 200 / 1200	65 / 200 / 1200	65 / 200 / 1200				
	4.23 Fork carriage to DIN 15173. Class, A/B		IV A	IV A	IV A	IV A				
	4.24 Fork carriage width $\blacktriangleright$	b3 (mm)	2030	2030	2030	2030				
	Fork Spacing -Std Carriage - Minimum inside to inside edge	mm	173	65	65	65				
	Fork Spacing -Std Carriage - Maximum outside to outside edge	mm	253	1990	1990	1990				
4.31 Ground clearance under mast, laden	m1 (mm)	173	173	173	173					
4.32 Ground clearance at centre of wheelbase	m2 (mm)	253	253	253	253					
4.33 Aisle width with pallets 1000mm x 1200mm wide	Ast (mm)	5490	5490	5611	5540					
4.34 Aisle width with pallets 800mm x 1200mm long	Ast (mm)	5672	5672	5763	5722					
4.35 Outer turning radius	Wa (mm)	3673	3673	3794	3723					
4.36 Inner turning radius	b13 (mm)	362	362	362	362					
4.37 90° intersecting aisle (With pallet W = 1200mm, L = 1000mm)	mm	3045	3045	3115	3074					
4.40 Step Height (from ground to running board)	mm	321	321	321	321					
Step Height (between intermediate steps between running board and floor)	mm	256	256	256	256					
Performance	5.1 Travel speed laden/unladen $\bullet$	km/h	15.0 / 20.5	15.0 / 21.5	20.5	21.5	20.5	21.5	20.5	21.5
	5.2 Lifting speed laden/unladen (2LFL)	m/sec	0.43	0.45	0.43	0.45	0.42	0.45	0.42	0.45
	5.3 Lowering speed laden/unladen (2LFL)	m/sec	0.41	0.37	0.41	0.37	0.41	0.37	0.41	0.37
	5.5 Drawbar pull laden/unladen, @ 1.6 km/h	N	53	53	53	53	53	53	53	53
	5.6 Drawbar pull laden/unladen, @ 4.8 km/h	KN	41	41	41	41	41	41	41	41
	5.7 Gradeability laden/unladen, @ 1.6 km/h	%	29	30	29	30	28	30	27	30
	5.8 Gradeability laden/unladen, @ 4.8 km/h	%	22	30	22	30	21	30	21	30
	5.10 Service brake		Hydraulic	Hydraulic	Hydraulic	Hydraulic				
	7.1 Engine manufacturer/type		GM 5.7L	GM 5.7L	GM 5.7L	GM 5.7L				
	7.2 Engine output, in accordance with ISO1585	kW	97 @ 2400	97 @ 2400	97 @ 2400	97 @ 2400				
7.3 Governed speed	rpm	2400	2400	2400	2400					
7.4 Number of cylinders/displacement	cm3	8 / 5735	8 / 5735	8 / 5735	8 / 5735					
7.5 Fuel Consumption per VDI test cycle	l/hr - kg/hr	18.7 / 9.5	19.8 / 10.1	20.8 / 10.6	20.8 / 10.6					
8.1 Drive control		Electronically Controlled Powershift	Electronically Controlled Powershift	Electronically Controlled Powershift	Electronically Controlled Powershift					
Other	8.2 Working pressure for attachments (nominal relief pressure)	bar	155	155	155	155				
	8.3 Oil flow for attachments (nominal) $\blacklozenge$	l/min	93	93	93	93				
	8.4 Average noise level at operator's ear (without / with cab) $\star$	dB(A)	83 / 81	83 / 81	83 / 81	83 / 81				
	Guaranteed sound power 2001/14/EC	dB	107	107	107	107				
	8.5 Towing coupling type		Pin	Pin	Pin	Pin				
8.7 Hydraulic Tank - capacity (drain & refill)	litres	70.9	70.9	70.9	70.9					

$\star$  Measured according to the test cycles and based on the weighting values contained in EN12053

$\blacktriangle$  Top of forks  
 $\times$  Full suspension seat in depressed position

$\blackplus$  Without load backrest  
 $\blacklozenge$  Dual drive, except where specified  
 $\bullet$  Add 50mm for load backrest  
 $\circ$  h6 subject to +/- 5mm tolerance.  
 2549mm for Cab option  
 $\blacklozenge$  Variable

$\bullet$  Top speed limited with single tyre option per tyre manufactures ETRTO recommendation. All single tyre orders need to be approved in advance by the Counterbalance SPED Department (spedapps@nmhg.com)

**Spec sheet truck based on:**  
 5505 Bottom of forks / 5565mm Top of forks, 2 stage LFL mast with 2030mm carriage, 1200mm forks.

## VX Series

Models: GDP/GLP 80VX6, 80VX9, 90VX6

### Yale Veracitor VX Series

This series of trucks is designed to provide excellent performance and is optimized for lowest hourly cost of operation.

### Diesel Engines

The Yale Veracitor Cummins QSB3.3L diesel turbo charged engine features legendary Cummins reliability and Tier III emission compliance. The turbocharger uses the energy of the exhaust system to compress the intake air. This increases air density, allowing a more complete combustion of the fuel, which provides higher power. The engine also features exceptionally low noise levels, forged steel crankshaft, camshaft and con rods and oil-cooled forged aluminium pistons. The cast iron block is designed to increase rigidity and resist torsional stresses.

### Fuel System

The Cummins QSB3.3L turbocharged diesel engine incorporates a "High Pressure Common Rail" (HPCR) fuel system with full electronic control. The engine control module monitors critical engine operating parameters, accelerator throttle position and Vehicle System Manager messages, whilst adjusting engine fuel as necessary to achieve the required engine speed and torque output. Solenoid actuated injection nozzles, a full suite of sensors and full electronic engine control maximises engine performance while reducing engine noise and emissions.

### LPG Engines

The Yale Veracitor VX GM Vortec™ V8 engine features a rigid cast iron block and main bearing caps. The Nodular iron crankshaft is supported on four main bearings with a cast iron camshaft. Hydraulic valve lifters are utilized to eliminate the need for manual adjustment. The GM engines also feature an electronic throttle for precise performance and control.

### Fuel System

The GM LPG engine uses a mixer

system. The system uses a vaporizer built into the electronic pressure regulator to convert the fuel from a liquid to a gas and then precisely deliver the proper amount to the mixer via the electronic pressure regulator. An electronic throttle body regulates the fuel/air mixture to the intake manifold. The Engine Control Unit controls the electronic throttle body, electronic pressure regulator and spark advance to provide the necessary torque. The Engine Control Unit's inputs include manifold absolute pressure, intake air temperature, engine coolant temperature, engine oil pressure, accelerator pedal position, throttle position, engine speed, camshaft position, plus pre and post catalyst oxygen sensor signals.

### Transmissions

#### *Techtronix 332 transmission*

The standard Techtronix 332 transmission features three speeds forward and two speeds in reverse for excellent gradeability and drawbar pull while allowing top travel speeds for maximum productivity. First gear also offers increased drawbar pull for use on gradients. Whilst second and third gears provide maximum engine efficiency in applications where longer travel distances are common.

#### **Auto Deceleration (ADS)**

This is achieved through the controlled application of the clutch packs to slow the truck down without the need to apply the foot brake.

#### **Controlled Power Reversal (CPR)**

Tyre spin is significantly reduced by precisely regulating engine speed during full power reversal situations. Tyre wear is proportionally decreased, reducing the number of replacement tyres required.

#### **Controlled Roll Back (CRB)**

Roll back on gradients is limited to 75mm per second making load spotting and discharging of loads on ramps and gradients easier and more efficient.

#### *Techtronix 332+ Transmission*

The Techtronix 332+ has all the standard Techtronix 332 transmission features plus Dynamic Auto Deceleration System (DADS) and Auto Speed Hydraulics (ASH) with Automatic Inching Control which automatically increases engine RPM as hydraulic functions are actuated, while maintaining control over vehicle speed. The Throttle Response Management feature (TRM) provides travel speed as a direct result of pedal position, improving truck control.

A 100 mesh suction and 10 micron return line filtration system protect the transmission from abrasive contaminants.

#### **Auto-Speed Hydraulics (ASH) with Automatic Inching Control**

When lifting a load, the engine speed is automatically increased to provide full hydraulic power. The Intelix VSM™ maintains the travel speed (or prevents travel) until the operator activates the accelerator. No operator inching is required and productivity is increased by simplifying operator actions.

#### **Throttle Response Management (TRM)**

This feature allows the operator to manage his travel speed, according to the position of his foot on the accelerator pedal. For example, travel speed can be maintained both on the level and on a gradient, without the need to depress the pedal further. The system also compensates for hydraulic operation and drawbar pull.

#### **Dynamic Auto Deceleration System (DADS)**

This allows the operator to reduce the speed of the truck without using the brake. The rate of braking is determined by the programmable dashboard settings 1-10. The rate of deceleration can be controlled further by the rate at which the operator releases his foot from the accelerator pedal.

The transmission also features electronic shift control, smooth electronic inching, neutral start switch, and anti-restart protection.

## VX Series

Models: GDP/GLP 80VX6, 80VX9, 90VX6

A single pedal controls both inching and braking.

Optional dual inch/brake pedals are available for operators who prefer this design.

### Cooling System

The modular radiator system incorporates sections for engine coolant, transmission oil and engine intake air. A 500mm diameter blade pusher-type fan provides cooling airflow. A permanently lubricated water pump and a high capacity, cross-flow radiator ensure rapid heat dissipation. The sealed cooling system operates at a pressure of 1.0 bar and includes a coolant recovery tank for visual inspection of coolant level. The radiator is soft-mounted for durability.

### Drive Axle

The drive axles are designed to withstand heavy loads and absorb shocks. The wheel hubs rotate on large tapered roller bearings. The drive shaft transmits rotational torque to the drive axle from the engine and transmission. Transmission torque is distributed through planetary gear reduction and an industrial hypoid ring gear and pinion differential assembly.

The drive axle is a "self contained" assembly that is isolated from the transmission by the drive shaft and heavy-duty rubber isolators. The axle shafts utilise a "rolled fillet" root spline design for increased resistance to torsion stress. A magnetic sump plug is used to collect any metal particles that are circulating in the axle oil, preventing component wear.

### Brakes

Oil immersed disc brakes are standard and internal to the axle for environmental protection. The low pedal effort brakes require no adjustment and very little maintenance, yet provide an extremely long service life.

Metered hydraulic oil pressure is used to actuate the oil immersed disc brakes via a brake-pedal actuated modulating valve. This system yields consistent pedal

travel for optimum control. The independent, hand adjustable parking brake with push-button release has an audible alarm to indicate when the operator has left the truck without applying the park brake.

### Steering

Hydraulic Power Steering (hydrostatic steering) provides responsive control and eliminates mechanical linkages for reduced surface shock and simplified maintenance. The steering wheel is 30cm in diameter with a textured surface grip and spinner knob, and requires only four turns lock-to-lock. The center mounted steer cylinder is located within the confines of the steer axle for protection.

### Steer Axle

The steer axle is constructed of cast ductile steel and is mounted on phenolic bushings, allowing excellent stability and axle articulation. The steer axle system features tapered spindle bearings and non-adjustable tie rod end for durability.

### Chassis

The chassis designed by state-of-the-art finite element methods features 25mm thick frame members and contains a rugged, unitised frame structure with a low step for simple entrance to the operator's compartment. The ergonomically designed overhead guard is bar type for excellent visibility and reduced noise. Gull wing doors on both right and left sides provide excellent access.

### Operator's Compartment

The operator's compartment features Yale Accutouch minilever electro-hydraulic controls integrated into the operator's right-side armrest providing superior ergonomics. The automotive-style pedal arrangement has a large, single inch/brake pedal as standard. Rubber floor mats reduce noise and vibration. The floorplate can be removed without tools for excellent service access. Low step height and convenient hand grips

provide easy entry and exit to and from the truck and superior reverse driving position.

### Intellix Vehicle System Manager

This is the master truck controller, providing extensive monitoring and control of truck functions and systems. CANbus technology reduces wiring complexity and enables comprehensive communications between truck systems. The ergonomically positioned dash display transmits continual feedback to the operator and allows for communication of service codes. Comprehensive on-board diagnostics enable quick and easy troubleshooting. The electrical system features sealed connectors and 'Hall Effect' sensors for superior dependability.

### Hydraulic System

The hydraulic system incorporates a gear type pump with a cast iron body for quiet efficiency. The system is protected from overloads by a main relief valve for the lift circuit and a secondary relief valve for tilt and auxiliary functions. Oil is double filtered through a 100 mesh suction line strainer and 10 micron return line filter. The hydraulic tank is integrated into the frame. An emergency lowering valve is provided to allow the load to be lowered in the event of power loss. O-ring face seal fittings are used in all high pressure hydraulic connections.

### Masts

Yale Simplex LFL (Limited Free Lift) and Triplex FFL (Full Free Lift) masts are available. The mast features pre-lubed and sealed full radius load rollers that resist forward, rearward and lateral forces. Side-thrust wear pads allow for periodic adjustment for lateral clearances. The rolled mast channels are made of high strength steel to provide resistance to flaring of the mast channel. Wide (2.03m) hook-type carriages are standard equipment, providing great visibility and the fitting of a wide variety of forks and attachments. Pin-type carriages are also available.

## VX Series

Models: GDP/GLP 80VX6, 80VX9, 90VX6

### Options

- Powertrain protection system with engine shutdown
- Premium monitoring package
- Internal sideshift and integral sideshifting fork positioner
- Accumulator
- Keyless start (with auxillary key switch)
- LED brake and reversing lights
- Headlights and rear drive lights with halogen bulbs
- Headlights and rear drive lights with LED bulbs
- Traction speed limiter
- Return-to-set tilt
- Integral operator's cab
- Swivel full suspension vinyl and cloth seats
- Foot directional control pedal
- Impact monitor
- Operator password
- Alarm - reverse actuated 82-102 dB(A) - self adjusting
- LED amber strobe light - keyswitch activated
- Solid and radial tyres
- 4 function (2 aux.) hydraulic control valve
- 5° forward/6° backward tilt
- Fire extinguisher
- Lifting eyes



**Yale** 

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CE



**Safety.** This truck conforms to the current EU requirements. Specification is subject to change without notice.

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Truck shown with optional equipment