

People. Products. Productivity.™

# **GP-DC**

**Pneumatic Tire Trucks** 19,000 · 21,000 · 23,000 · 25,000 · 28,000 lbs

## Yale® GP-DC Series

This series of pneumatic tire lift trucks provides low fuel consumption while offering superior traction, gradeability and drawbar pull on paved, gravel and unimproved surfaces. The DC Series has high under-clearance, productive travel/ lift speeds and excellent maneuverability to meet the demands of tough applications (lumber, pipe, pre-stressed concrete, block/brick, stevedoring and heavy cargo). Various attachments may be required for above applications.

Yale's ERGOCAB is ergonomically designed for maximum operator productivity.

# Cab features:

- full-length handrails
- three step entry on special floorboards
- open floor with low front dash
- all gauges, switches, key start and park brake to right of driver
- · two way adjustable steering column for height and tilt angle
- inch brake/brake/accelerator pedal arrangement
- · custom molded floor mat
- angled overhead guard bars
- 3-way adjustable right hand armrest
- wide angle side view mirrors
- blinking red warning lights on steer column
- side of operator Dash instrument panel with gauges, warning lights and LCD message center
- paddle lever actuators for hydraulic functions and combination paddle/rocker switches for optional attachments
- a full suspension vinyl seat

Enclosed cab option features:

- · curved tempered front and rear glass
- twin arm single 39" blade front wiper, rear wiper and top wiper with washer fluid spray
- ten high capacity outlet vents for heating
- optional air conditioning
- under cab sound insulation
- · cab filter for all incoming air
- front and rear screen demisting
- top cover laminated glass
- storage bins

# Cab Tilt

The entire cab tilts for complete service access to major powertrain components.

# **Cummins QSB 4.5L**

Cummins QSB 4.5 Tier 4i industrial turbo diesel with intercooler features advanced electronics, a High-Pressure Common-Rail fuel system that offers faster cycle times and higher productivity, and a cooed Exhaust Gas Recirculation (EGR) for low-emission levels. This is a four-cylinder engine, delivering performance comparable to some six-cylinder engines, without the excess bulk and weight.

The vertical exhaust is standard and has a large capacity cylindrical muffler.

# Air Cleaner

A Sy-Klone<sup>™</sup> pre-cleaner with a high air intake for extremely dusty environments has an oversized two-stage air filter and internal back-up filter including an air cleaner that has an electronic air filter restriction indicator.

# Cooling system

The Quad-Cooler radiator contains four separate cooling cores for the engine, transmission, hydraulics and charge air cooler. The radiator features high performance triangular waved, louvered fins at ten per square inch for reduced plugging from airborne containments. Radiator is easily accessible by lifting gas spring actuated louvered door on top of counterweight.

# **Drive Axle**

The heavy-duty planetary drive axle with secure pinion retention is made of ductile iron and is bolted to the frame. The drive shafts are fully floating allowing the truck and load weight to be carried by the axle housings. Heavy duty oil cooled wet disc brakes are standard.

Transmission A new Transmission providing 35% more torque than the previous generation offering, the ZF WG-161 three-speed automatic transmission has a fully reversing powershift transmission that produces smooth shifting, precise inching and fast acceleration. The key characteristics of the ZF transmission includes 3 forward and 3 reverse gears, a fully automatic gear shift control and is powershiftable with proportional valves. Inching capability is electronically controlled while a cushioned lock-up provides smooth shifting and dampens drive line shock loads. A simple push button calibration is provided. A standard steer column mounted lever provides the operator with manual shift capabilities and a dash-mounted indicator light displays the transmission mode status. A neutral start switch is standard. An optional Foot

**Diesel T4i Engine Specifications** 

Cummins QSB 4.5L Engine

Cylinders

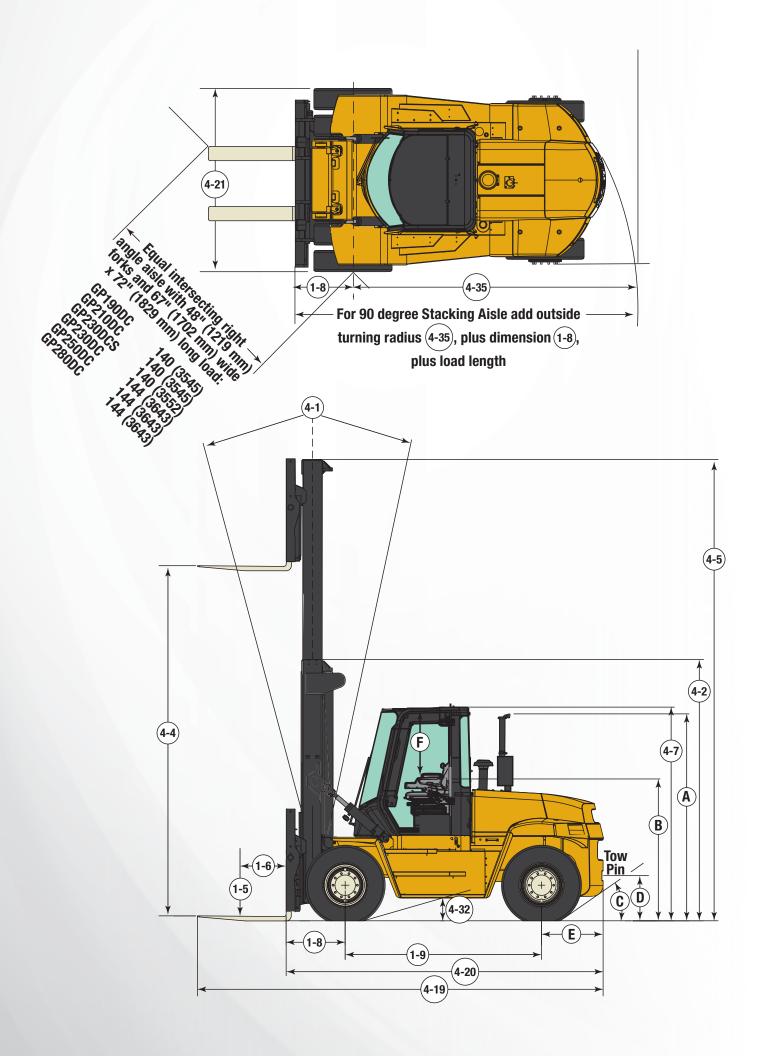
Displacement 275 cu.in./4.5 liter 460 lb.-ft @ 1500 RPM Torque Horsepower 164 hp @ 2300 RPM

Directional Control (FDC) provides direction change in lieu of a column shifter. A Transmission lock-out feature Transmission lock-out prevents high speed directional changes. An Engine and Transmission protection system provides protection for excessive engine coolant temperature, low engine oil pressure, and excessive engine inlet air temperatures.

# **Hydraulic System**

Variable displacement pump (VDP) technology is used for high efficiency and low fuel consumption. Standard hydraulic performance features a single 90 CC displacement variable displacement pump. Optional high performance hydraulic system features dual 60 CC variable displacement pumps (total of 120 CC) providing leading performance for high productivity. The main hydraulic valve integrates all hydraulic functions into one assembly. Electro mechanical solenoids allow precise control of oil flow during hoist and tilt functions and provide excellent load control. Diagnostic error codes allow for easy troubleshooting by a trained service technician.





		Description		Units		English	Metric	English	Metric
·	1-1 Manufacturer			UI UI	1110	YALE	YALE	YALE	YALE
4	1-2	Model designation			GP190DC	GP190DC	GP210DC	GP210DC	
GENERAL	1-5	Rated load capacity			kg	19,000	8,618	21,000	9,525
	1-6	Load center		lbs. in	mm	24.0	610	24.0	610
ا	1-8	Load distance		in	mm	28.9	735	28.9	735
	1-9	Wheelbase	in	mm	106	2,700	106	2,700	
	2-1	Total truck weight without load		lbs.	kg	26,764	12,140	27,461	12,456
ည	2-2a	Axle loading with load	front	lbs.	kg	41,713	18,921	44,631	20,244
WEIGHTS	2-2b		rear	lbs.	kg	4,051	1,837	3,830	1,737
M	2-3a	Axle loading without load	front	lbs.	kg	13,248	6,009	13,170	5,974
	2-3b		rear	lbs.	kg	13,516	6,131	14,291	6,482
<b>'</b> 0	3-1	Tire type				Pneu	matic	Pneu	
畄	3-2	Tire size	front			10.00x	20 Bias	10.00x	20 Bias
WHEELS	3-3		rear			10.00x	20 Bias	10.00x	20 Bias
>	3-5	Number of tires, front / rear	(X driven )			4,	/2	4/	2
	4-1	Mast tilt, forward / back		degi	ee °	15°F /	/ 12°B	15°F /	12°B
	4-2	Height of mast lowered		in	mm	132	3,353	132	3,353
	4-3	Freelift (Top of Fork)		in	mm	0	0	0	0
	4-4	Lift height (Top of Fork)		in	mm	148	3,761	148	3,761
	4-5	Height of mast extended		in	mm	204	5,172	204	5,172
	4-7	Height to top of operator co	mpartment	in	mm	119	3,033	119	3,033
	4-19	Overall length		in	mm	215	5,464	215	5,464
တ္	4-20	Length to load face	in	mm	167	4,244	167	4,244	
DIMENSIONS	4-21	Overall width over drive tire	S	in	mm	97	2,463	97	2,463
ı.	4-22a	Fork	thickness	in	mm	3	75	3	75
Ξ	4-22b		width	in	mm	8	200	8	200
	4-22c		length	in	mm	48	1,220	48	1,220
	4-24	Carriage width		in	mm	92.5	2,350	92.5	2,350
	4-25a			in	mm	3	75	3	75
	4-25b			in	mm	89	2270	89	2270
	4-31	Ground clearance, under mast with load		in	mm	10	248	14	350
٠	4-32 4-33	Ground clearance, center of		in	mm	11 183	292	11	292 4,647
	4-35 4-35	Minimum aisle width (add lo Outside turning radius	au lengin)	in in	mm	154	4,647 3,914	183 154	3,914
ပ	8-7	Hydraulic tank capacity		gal	mm	26	100	26	100
MISC	8-8	Fuel tank capacity		gal	<u>'</u>	34	128	34	128
		PERFORM	IANCE	Ů	/ITH TIES			SB 4.5L EN	
	5-1a	Travel speed	with load	mph	km/h	19	30	19	30
	5-1b		without load	mph	km/h	19	31	19	31
	5-2a	Lifting speed	with load - Dual 105cc	ft/min	m/s	106	0.54	106	0.54
	5-2b		without load - Dual 105cc	ft/min	m/s	116	0.59	116	0.59
	5-3a	Lowering speed	with load	ft/min	m/s	98	0.50	98	0.50
	5-3b		without load	ft/min	m/s	94	0.48	94	0.48
Ж	5-6	Drawbar pull - Max		lbs.	kN	23,515	105	23,470	104
NS NS	5-7	Gradeability no load / rated	load - 1 mph (1.6 km/h)	0,	6	32/53	32/53	31/49	31/49
PERFORMANCE		PERFORMANCE			WITH	TIER 3 CUM	IMINS QSB	6.7L ENGINE	
년 년	5-1a	Travel speed	with load	mph	km/h	19	30	19	30
EB	5-1b		without load	mph	km/h	19	31	19	31
ш	5-2a	Lifting speed	with load - Dual 120cc	ft/min	m/s	108	0.55	108	0.55
	5-2b		without load - Dual 120cc	ft/min	m/s	136	0.69	136	0.69
	5-2a	Lifting speed	with load - Single 90cc	ft/min	m/s	93	0.47	93	0.47
	5-2b		without load - Single 90cc	ft/min	m/s	100	0.51	100	0.51
	5-3a	Lowering speed	with load	ft/min	m/s	98	0.50	98	0.50
	5-3b	Donathan II at	without load	ft/min	m/s	94	0.48	94	0.48
	5-6	Drawbar pull - Max	lbs.	kN	23,515	105	23,470	104	
	5-7	Gradeability no load / rated	10ad - 1 mpn (1.6 km/n)	9	6	32/53	32/53	31/39	31/49

Manufacturer		Description				nits	English	Metric	English	Metric
Model designation		1-1	Manufacturer					YALE		YALE
Feb   Load distance	AL.	1-2	Model designation				GP230DCS	GP230DC	GP230DC	
Feb   Load distance	监		Rated load capacity		lhs	ka				
Feb   Load distance	ΪË									
1-9	ပ									
Part   Total muck weight without head   Bas   Sag   31,427   14,224   431,189   14,147   20,022   22,02   22,02   22,03   Ade loading with food   front   Bas   Sag   5,000   2,247   48,000   2,488   2,203   2,203   3,400   44,700   2,207   5,454   2,468   2,203   2,203   3,400   44,700   2,207   5,454   2,468   2,203   2,203   3,400   44,700   2,207   5,454   2,468   2,203   2,203   3,400   44,700   2,207   5,454   2,468   2,203   2,203   3,400   44,700   2,203   2,203   3,400   44,700   2,203   3,400   44,700   2,203   3,400   44,700   2,203   3,400   44,700   2,203   3,400   3,40										
Part										
2-80   rear   bs.   kg   16,675   7,584   10,330   7,416   0   0   0   0   0   0   0   0   0	တ								-	
2-80   rear   bs.   kg   16,675   7,584   10,330   7,416   0   0   0   0   0   0   0   0   0	ᇤ		Axie loading with load				·			
2-80   rear   bs.   kg   16,675   7,584   10,330   7,416   0   0   0   0   0   0   0   0   0	Ĭ		Ayla laading without laad							
The state   Penamatic   Pena	>		Axie loading without load							
Second Columbia			T:	rear	IDS.	ку				
4-1   Mast til, froward / Dack   degree   15°F / 12°B   15°F / 12°B / 12°F /	S			£						
4-1   Mast til, froward / Dack   degree   15°F / 12°B   15°F / 12°B / 12°F /	┃╙		THE SIZE							
Meght for nest lowered   15°F / 12°B   13°F / 12°B   13°F / 12°B   13°F / 12°B   143   3,628   143   143   3,628   143   143   3,628   143   143   143   143   143   143   144   141 tolejft (Top of Fork)   in mm   0   0   0   0   0   0   0   0   0	Ì≱		Number of times from / year	l .						
4-2   Height of mast lowered				(X uriveii )	dom					
4-3   Freelift (Top of Fork)								ı		
4-4										
4-5   Height of mast extended			· · · · ·						-	
4-7   Height to top of operator compartment										
4-19   Overall length				martmant						
Variable   Variable				прагипени						
A-21   Overall width over drive tires										
1	SS			<u> </u>						
1	S									
1			FUIK							
1	≧									
4-25a			, , ,							
4-255   Fork spread, max (out-out)   in mm   89   2270   89   2270     4-31   Ground clearance, under mast with load   in mm   14   350   14   350     4-32   Ground clearance, center of wheelbase   in mm   11   292   11   292     4-33   Minimum aisle width (add load length)   in mm   185   4,697   192   4,879     4-35   Outside turning radius   in mm   154   3,914   162   4,111     5-3   3-7   Hydraulic tank capacity   gal     26   100   26   100     5-1a   Travel speed   with load   mph   km/h   19   30   19   30     5-1b   without load   mph   km/h   19   31   19   31     5-2a   Lifting speed   with load   Dual 105cc   ft/min   m/s   79   0,40   79   0,40     5-3a   Lowering speed   with load   Dual 105cc   ft/min   m/s   98   0,45   89   0,45     5-3b   without load   ft/min   m/s   94   0,48   94   0,48     5-1a   Travel speed   with load   mph   km/h   19   30   19   30     5-3b   without load   ft/min   m/s   94   0,48   94   0,48     5-6   Drawbar pull -Max   without load   mph   km/h   19   31   19   31     5-1a   Travel speed   with load   mph   km/h   19   30   19   30     5-2a   Lifting speed   with load   mph   km/h   19   30   19   30     5-2a   Lifting speed   with load   mph   km/h   19   30   19   30     5-2a   Lifting speed   with load   mph   km/h   19   30   19   30     5-2a   Lifting speed   with load   mph   km/h   19   30   19   30     5-2a   Lifting speed   with load - Dual 120cc   ft/min   m/s   83   0,42   83   0,42     5-2b   without load - Dual 120cc   ft/min   m/s   77   0,39   77   0,39     5-2a   Lifting speed   with load - Single 90cc   ft/min   m/s   77   0,39   77   0,39     5-3a   Lowering speed   with load - Single 90cc   ft/min   m/s   94   0,48   94   0,48     5-6   Drawbar pull -Max   without load   ft/min   m/s   94   0,48   94   0,48     5-6   Drawbar pull -Max   without load   ft/min   m/s   94   0,48   94   0,48     5-6   Drawbar pull -Max   without load   ft/min   m/s   94   0,48   94   0,48     5-6   Drawbar pull -Max   without load   ft/min   m/s   94   0,48   94										
4-31   Ground clearance, under mast with load   in mm   14   350   14   350     4-32   Ground clearance, center of wheelbase   in mm   11   292   11   292     4-33   Minimum aisle width (add load length)   in mm   185   4,697   192   4,879     4-35   Outside turning radius   in mm   154   3,914   162   4,111     4-35   Outside turning radius   in mm   154   3,914   162   4,111     4-35   Hydraulic tank capacity   gal     26   100   26   100     8-8   Fuel tank capacity   gal     34   128   34   128     PERFORMANCE   WITH TIER 4 INTERIM CUMMINS QSB 4.5L ENGINE     5-1a   Travel speed   with load   mph   km/h   19   30   19   30     5-2a   Lifting speed   with load - Dual 105cc   ft/min   m/s   89   0.45   89   0.45     5-3a   Lowering speed   with load   ft/min   m/s   98   0.50   98   0.50     5-3a   Lowering speed   with load   ft/min   m/s   94   0.48   94   0.48     5-7   Gradeability no load / rated load - 1 mph (1.6 km/h)   %   32/48   32/48   31/44   31/44     FERFORMANCE   Without load   mph   km/h   19   31   19   31     5-1a   Travel speed   with load   mph   km/h   19   30   19   30     5-1a   Travel speed   with load   mph   km/h   19   30   19   30     5-1a   Travel speed   with load   mph   km/h   19   30   19   30     5-2a   Lifting speed   with load   mph   km/h   19   31   19   31     5-2a   Lifting speed   with load   mph   km/h   19   30   19   30     5-2b   without load   mph   km/h   19   31   19   31     5-2a   Lifting speed   with load   5lingle 90cc   ft/min   m/s   77   0.36   71   0.36     5-3b   without load   ft/min   m/s   98   0.50   98   0.50     5-3a   Lowering speed   with load   ft/min   m/s   98   0.50   98   0.50     5-3b   without load   ft/min   m/s   98   0.50   98   0.50     5-3b   without load   ft/min   m/s   98   0.50   98   0.50     5-3b   without load   ft/min   m/s   98   0.50   98   0.50     5-3b   without load   ft/min   m/s   94   0.48   94   0.48     5-6b   Drawbar pull - Max   lbs.   kN   22,436   100   22,436   100										
4-32   Ground clearance, center of wheelbase   in   mm   11   292   11   292			,							
4-33   Minimum aisle width (add load length)   in   mm   185   4.697   192   4.879										
Note										
Second Column   Second Colum				au iongui)						
S-1a   Travel speed   with load   mph   km/h   19   30   19   30   30   31   31   31   31   31   31	ပ					1				
S-1a   Travel speed   with load   mph   km/h   19   30   19   30   30   31   31   31   31   31   31	SIN				_					
S-1a   Travel speed   with load   mph   km/h   19   30   19   30   30   5-1b   without load   mph   km/h   19   31   19   31   31   31   31   31				ANCE	ů					
S-1b   without load   mph   km/h   19   31   19   31   31   5-2a   Lifting speed   with load - Dual 105cc   ft/min   m/s   79   0.40   79   0.40   5-2b   without load - Dual 105cc   ft/min   m/s   89   0.45   89   0.45   89   0.45   5-3a   Lowering speed   with load   ft/min   m/s   98   0.50   98   0.50   98   0.50   5-3b   without load   ft/min   m/s   94   0.48   94   0.48   5-6   Drawbar pull - Max   lbs.   kN   22,436   100   22,436   100   22,436   100   5-7   Gradeability no load / rated load - 1 mph (1.6 km/h)   %   32/48   32/48   31/44   31/44   31/44		5-1a								
S-2a   Lifting speed   with load - Dual 105cc   ft/min   m/s   79   0.40   79   0.40			патогорова		· ·					
S-2b			Lifting speed		<u> </u>					
S-3a   Lowering speed   with load   ft/min   m/s   98   0.50   98   0.50			3-1							
S-3b			Lowering speed							
S-6   Drawbar pull - Max   Ibs.   kN   22,436   100   22,436   100   32/48   31/44			3-1							
Second   S	ш		Drawbar pull - Max							
5-2a         Litting speed         with load - Dual 120cc         It/min         m/s         102         0.52         102         0.52           5-2a         Lifting speed         with load - Single 90cc         ft/min         m/s         71         0.36         71         0.36           5-2b         without load - Single 90cc         ft/min         m/s         77         0.39         77         0.39           5-3a         Lowering speed         with load         ft/min         m/s         98         0.50         98         0.50           5-3b         without load         ft/min         m/s         94         0.48         94         0.48           5-6         Drawbar pull - Max         lbs.         kN         22,436         100         22,436         100	S			load - 1 mph (1.6 km/h)					-	
5-2a         Litting speed         with load - Dual 120cc         It/min         m/s         102         0.52         102         0.52           5-2a         Lifting speed         with load - Single 90cc         ft/min         m/s         71         0.36         71         0.36           5-2b         without load - Single 90cc         ft/min         m/s         77         0.39         77         0.39           5-3a         Lowering speed         with load         ft/min         m/s         98         0.50         98         0.50           5-3b         without load         ft/min         m/s         94         0.48         94         0.48           5-6         Drawbar pull - Max         lbs.         kN         22,436         100         22,436         100	ΔA					WITH		IMINS QSB	6.7L ENGINE	
5-2a         Litting speed         with load - Dual 120cc         It/min         m/s         102         0.52         102         0.52           5-2a         Lifting speed         with load - Single 90cc         ft/min         m/s         71         0.36         71         0.36           5-2b         without load - Single 90cc         ft/min         m/s         77         0.39         77         0.39           5-3a         Lowering speed         with load         ft/min         m/s         98         0.50         98         0.50           5-3b         without load         ft/min         m/s         94         0.48         94         0.48           5-6         Drawbar pull - Max         lbs.         kN         22,436         100         22,436         100	OR	5-1a			mph	km/h	19	30	19	30
5-2a         Litting speed         with load - Dual 120cc         It/min         m/s         102         0.52         102         0.52           5-2a         Lifting speed         with load - Single 90cc         ft/min         m/s         71         0.36         71         0.36           5-2b         without load - Single 90cc         ft/min         m/s         77         0.39         77         0.39           5-3a         Lowering speed         with load         ft/min         m/s         98         0.50         98         0.50           5-3b         without load         ft/min         m/s         94         0.48         94         0.48           5-6         Drawbar pull - Max         lbs.         kN         22,436         100         22,436         100	H.	5-1b		without load	mph	km/h	19	31	19	31
5-2b         without load - Dual 120cc         ft/min         m/s         102         0.52         102         0.52           5-2a         Lifting speed         with load - Single 90cc         ft/min         m/s         71         0.36         71         0.36           5-2b         without load - Single 90cc         ft/min         m/s         77         0.39         77         0.39           5-3a         Lowering speed         with load         ft/min         m/s         98         0.50         98         0.50           5-3b         without load         ft/min         m/s         94         0.48         94         0.48           5-6         Drawbar pull - Max         lbs.         kN         22,436         100         22,436         100	ā	5-2a	Lifting speed	with load - Dual 120cc	ft/min	m/s	83	0.42	83	0.42
5-2b         without load - Single 90cc         ft/min         m/s         77         0.39         77         0.39           5-3a         Lowering speed         with load         ft/min         m/s         98         0.50         98         0.50           5-3b         without load         ft/min         m/s         94         0.48         94         0.48           5-6         Drawbar pull - Max         lbs.         kN         22,436         100         22,436         100		5-2b		without load - Dual 120cc	ft/min	m/s	102	0.52	102	0.52
5-3a         Lowering speed         with load         ft/min         m/s         98         0.50         98         0.50           5-3b         without load         ft/min         m/s         94         0.48         94         0.48           5-6         Drawbar pull - Max         lbs.         kN         22,436         100         22,436         100		5-2a	Lifting speed	with load - Single 90cc	ft/min	m/s	71	0.36	71	0.36
5-3b         without load         ft/min         m/s         94         0.48         94         0.48           5-6         Drawbar pull - Max         lbs.         kN         22,436         100         22,436         100		5-2b		without load - Single 90cc	ft/min	m/s	77	0.39	77	0.39
5-6         Drawbar pull - Max         lbs.         kN         22,436         100         22,436         100		5-3a	Lowering speed	with load	ft/min	m/s	98	0.50	98	0.50
		5-3b		without load	ft/min	m/s	94	0.48	94	0.48
5-7 Gradeability no load / rated load - 1 mph (1.6 km/h) % 31/40 31/40 31/40 31/40		5-6	Drawbar pull - Max	lbs.	kN	22,436	100	22,436	100	
						%	31/40	31/40	31/40	31/40

	Description				its	English	Metric	English	Metric
	1-1	Manufacturer					YALE	YALE	YALE
Ą	1-2	Model designation			GP250DC	GP250DC	GP280DC	GP280DC2	
监	1-5	Rated load capacity		lbs.	kg	25,000	11,340	28,000	12,701
GENERAL	1-6	Load center	in	mm	24.0	610	24.0	610	
ပ	1-8	Load distance	in	mm	29.9	760	29.9	760	
	1-9	Wheelbase	in	mm	114	2,900	114	2,900	
	2-1	Total truck weight without lo	lbs.		31,575	14,322	33,074	15,002	
တ	2-2a	Axle loading with load	front	lbs.	kg kg	51,607	23,409	55,862	25,338
ᅵ돑ᅵ	2-2a 2-2b	Axie loading with load				4,968	2,253	5,212	2,364
WEIGHTS		Ayla landing without land	rear	lbs.	kg				
>	2-3a	Axle loading without load	front	lbs.	kg	14,797	6,712	14,634	6,638
	2-3b	The Land	rear	lbs.	kg	16,778	7,610	18,440	8,364
S	3-1	Tire type	£				matic		matic
WHEELS	3-2	Tire size	front				20 Bias		20 Bias
Ì≱	3-3	Numerous of times from the con-	rear			10.00x			20 Bias
	3-5	Number of tires, front / rear	(X uriveii )	dom			/2	4,	
	4-1	Mast tilt, forward / back		degr		15°F	ı	15°F /	
	4-2 4-3	Height of mast lowered Freelift (Top of Fork)		in	mm	143	3,628	143 0	3,628
		· · · · ·		in	mm	140	0 2 761	-	
	4-4 4-5	Lift height (Top of Fork)  Height of mast extended		in in	mm	148 215	3,761 5,468	148 215	3,761 5,468
	4-5 4-7		martmant		mm				
	4-7 4-19	Height to top of operator cor Overall length	прагипени	in	mm	119 224	3,033	119	3,033
	4-19	Length to load face	in in	mm	176	5,689	224 176	5,689	
DIMENSIONS		Overall width over drive tires			mm		4,469		4,469
S	4-21 4-22a		thickness	in	mm	97	2,463	97	2,463 75
		Fork		in	mm	3	75	3	
≧	4-22b 4-22c		width	in	mm	8 48	200 1,220	8 48	200
	4-22t 4-24	l ü		in	mm				1,220
		Carriage width		in	mm	92.5	2,350	92.5	2,350
	4-25a	Fork spread, min (in-in)		in	mm	3	75	3 89	75
	4-25b 4-31	Fork spread, max (out-out)  Ground clearance, under mast with load		in in	mm	89 14	2270	14	2270
	4-31		in	mm		350 292		350 292	
	4-32	Ground clearance, center of Minimum aisle width (add lo	in	mm	11 192	4,879	11 192	4,879	
	4-35	Outside turning radius	au iengui)	in	mm	162	4,079	162	4,079
ပ	4-33 8-7	Hydraulic tank capacity		gal	mm	26	100	26	100
MISC	8-8	Fuel tank capacity		gal	<u>'</u>	34	128	34	128
	0.0	PERFORM	ANCE	ů	/ITH TIES			SB 4.5L EN	
	5-1a	Travel speed	with load	mph	km/h	19	30	19	30
	5-1b	пачог ороса	without load	mph	km/h	19	31	19	31
	5-1b	Lifting speed	with load - Dual 105cc	ft/min	m/s	79	0.40	79	0.40
	5-2b	g opood	without load - Dual 105cc	ft/min	m/s	89	0.45	89	0.45
	5-3a	Lowering speed	with load	ft/min	m/s	98	0.50	98	0.50
	5-3b	opou	without load	ft/min	m/s	94	0.48	94	0.48
ш	5-6	Drawbar pull - Max	1	lbs.	kN	22,436	100	22,436	100
Ş	5-7	Gradeability no load / rated	load - 1 mph (1.6 km/h)		6	31/40	31/40	30/34	30/34
PERFORMANCE		PERFORM	<u> </u>					6.7L ENGINE	
OR	5-1a	Travel speed	with load	mph	km/h	19	30	19	30
Ŗ.	5-1b		without load	mph	km/h	19	31	19	31
ā	5-2a	Lifting speed	with load - Dual 120cc	ft/min	m/s	83	0.42	83	0.42
	5-2b		without load - Dual 120cc	ft/min	m/s	102	0.52	102	0.52
	5-2a	Lifting speed	with load - Single 90cc	ft/min	m/s	71	0.36	71	0.36
	5-2b		without load - Single 90cc	ft/min	m/s	77	0.39	77	0.39
	5-3a	Lowering speed	with load	ft/min	m/s	98	0.50	98	0.50
	5-3b		without load	ft/min	m/s	94	0.48	94	0.48
	5-6	Drawbar pull - Max		lbs.	kN	22,368	100	22,301	99
	5-7	Gradeability no load / rated	load - 1 mph (1.6 km/h)	9	6	30/37	30/37	30/34	30/34

### **Hydrostatic Steering**

The hydrostatic system requires no mechanical drag link steering connections and components. Steering is actuated with a steer pump that controls a two-way cylinder bolted to the steer axle with eight bolts. The steer axle frame is made of high strength ductile cast steel. The adjustment free tie rods are made of T-1 steel. Tapered roller bearings are used with the heavy-duty spindles. Load sensing steering provides optimum performance at all engine speeds by giving priority to steering.

### Chassis

A rugged unitized frame structure is designed for tough, demanding applications with a low step height for easy entry and exit. Mast is mounted to the frame, not the drive axle.

### **Masts**

Yale Hi-Vis™ Simplex and Triplex masts afford operators outstanding visibility. Nested channel design incorporates full-face load rollers for durability. Rolled mast channels and formed cross-members provide high strength. Leaf-type chain provides superior strength.

## Carriage

The standard carriage is a pin type, 92.5" wide. Fork spacing ranges from 3" inside to inside, 89" outside to outside with a 3.0" diameter fork pin. The carriage is equipped with six angled load rollers.

### Brakes

Wet disc brake axle with dry disc park brake is standard.

### **Electrical**

24-volt system with single colored wiring numbered for easy identification. Standard 12-volt accessory converter for optional electrical devices.

## **Options**

Engines

Masts - various lift heights, 2-Stage and 3-Stage FFL

Sideshifting Carriages and Fork Positioners

Various fork options and lengths

Various mast tilt ranges

Multifunction Joystick

Column-mounted Direction Control Lever

Radial and Pneumatic-shaped Solid Tires

Enclosed Cab, with or without Air Conditioning

Various Inside-Cabin Options

Various Seat Options

2 and 3-point High Visibility Seat Belts

Powered Tilting Operator Compartment for Service Access

Visible Alarm / Amber Strobe Light

Audible Backup Alarm

Various Halogen and High Intensity Discharge (HID) Xenon Light kits

Lockable Fuel Cap

Lockable Battery Disconnect Switch

Hydraulic Accumulator

Various Traction Speed Limiters

Empty Seat Engine Shutdown - Adjustable from

3-15 minutes (preset to 15 minutes)

Liftina Eves

Steer Wheel Lug Protection

**Engine Block Heater** 

	POWERTRAINS	Units	Tier 4i	Tier 3*
1-3	Power type		Diesel	Diesel
7-1	Engine Manufacturer / model		Cummins QSB 4.5L	Cummins QSB 6.7L
7-1a	EPA Tier Compliance		Tier 4 interim	Tier 3
7-2a	Engine power output - Rated	hp (kW)	160 (119)	155 (116)
7-2b	Engine power output - Peak	hp (kW)	164 (122)	155 (116)
7-3	Governed speed	rpm	2,300	2,300
7-4	Number of cylinders / displacement	# /	4 / 4.5L	6 / 6.7L
7-5	Engine torque - Max	lb-ft (N-m)	460 (624)	443 (600)
7-5a	Turbocharger	Type	Variable Flow	Wastegate
7-9	Alternator output	Amps	120	70
8-0	Transmission Manufacturer / model		ZF WG-161	ZF WG-161
8-1	Transmission type & speeds		Powershift 3F x 3R	Powershift 3F x 3R
8.1a	Drive Axle Manufacturer / model		AxleTech	AxleTech
8-6	Battery voltage, rated capacity	V / CCA	24 / 900	24 / 900
5-10	Service brake		Oil immersed (wet) disc	Oil immersed (wet) disc
5-11	Park brake		Spring apply, dry disc	Spring apply, dry disc

\* Optional engine - Tier 3 (limited availability for US and Canada)

	MAST DIMENSIONS										
				A.3 Freelift   4   4   4   4   4   4   4   4   4	4.5 Overall Ex- tended Height						
	in mm		in	mm	in	mm	in	mm			
	2-STA	E NO FF	REE-LIFT	(NO FL)	Hi-Vis™						
	4.4 Lift height (Top of Fork)       4.2 Mast Lowered Height Lowered Height in mm         in       mm         2-STAGE NO FREE-LIFT (NO FL 147         3750       133         3353	3353	0	0	205	5196					
၂ဗ	183	47         3750         133         3353         0         0           33         4650         150         3803         0         0	0	240	6096						
둳	212	5400	165	4179	0	0	270	6846			
0-5	3-STA	E Hi-Vis	TM	150 3803 0 0 240 609 165 4179 0 0 270 684							
19	220	5589	120	3045	A.3 Freelift   A.5 Overall Extended Height   Top of Fork   mm   in   mm   mm   mm   mm   mm   mm	7030					
9	235	5989	126	3178	61	1557	293	7430			
	255	6489	132	3345	67	1724	313	7930			
	275	6989	139	3511	74	1890	332	8430			

	MAST DIMENSIONS										
4.4 Lift height (Top of Fork)			Mast d Height	4.3 Fi (Top o	reelift f Fork)	4.5 Overall Ex- tended Height					
	in	mm	in	mm	in	mm	in	mm			
	2-STAGE NO FREE-LIFT (NO FL) Hi-Vis™										
	148	3761	143	3628	0	0	216	5468			
	183	4661	161	4078	0	0	251	6368			
18	213	5411	176	4453	0	0	281	7118			
-58	244	6205 192		4853	0	0	312	7918			
ဗ္ဗ	3-STAGE Hi-Vis™										
GP230-280DC	220	5600	120	3045	56	1435	277	7030			
	236	6000	126	3178	61	1568	293	7430			
	255	6500	132	3345	68	1735	313	7930			
	275	7000	139	3511	74	1901	332	8430			

KEY TRUCK DIMENSIONS											
MODEL	Α		ı	В		C D		E		F	
	in.	mm	in.	mm	percent	in.	mm	in.	mm	in.	mm
GP190DC	116.8	2967	72.3	1837	70.0%	25.7	653	31.8	809	46.5	1181
GP210DC	116.8	2967	72.3	1837	70.0%	25.7	653	31.8	809	46.5	1181
GP230DCS	116.8	2967	72.3	1837	75.0%	25.7	653	31.8	809	46.5	1181
GP230DC	116.8	2967	72.3	1837	75.0%	25.7	653	31.8	809	46.5	1181
GP250DC	116.8	2967	72.3	1837	75.0%	25.7	653	31.8	809	46.5	1181
GP280DC	116.8	2967	72.3	1837	75.0%	25.7	653	31.8	809	46.5	1181



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