LIFT TRUCK ELECTRONIC SALES MANUAL



GP15N-GP35N/DP15N-DP35N 3,000 lb. – 7,000 lb. Capacity IC Pneumatic Forklifts

Last updated on 15 December 2014

CAT Lift Trucks

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ABOUT THIS LIFT TRUCK SALES MANUAL

Your Single Source For All Model-Related Selling Information

This document is **your SINGLE SOURCE of all data** needed to support your efforts to sell this product. It combines all "sales technical" data from available Price Pages (excluding prices), Sales Brochures, Mast Tables, and any other product-related information into this sole document.

IF YOU CAN'T FIND YOUR DESIRED INFORMATION IN THIS DOCUMENT, THEN THE INFORMATION:

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- Has not yet been analyzed and created for publication (and/or)
- Is of a proprietary nature (and/or)
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At the time of this publication, there are 30+ model families that either have or will have Lift Truck Sales Manuals associated with them. They are constantly being updated to provide you with the most comprehensive information for our products and improved to enable faster location of the information you seek.

Please note that this model's **Operation & Maintenance Manual** (OMM), **Service Manual** (SM), and **Parts Manual** (PM) will have additional information relating to their respective subject matter.

Your Participation To Improve This Document & Who To Contact

MCFA NEEDS YOUR HELP to make this the best single source of product selling information available to you and your fellow sales associates.

¹ If there is information you consistently need to enable you to sell lift trucks and you have not been able to find it in this document, please let MCFA know!

The MCFA Product Marketing group is responsible for creating this publication. You can contact them in the following ways:

- e-Mail mailto:sales.training@mcfa.com (click on address to create e-mail)
- Phone Via MCFA LiftCentral® at (877) 543-6757

The MCFA Product Marketing group thanks you in advance for your active participation!



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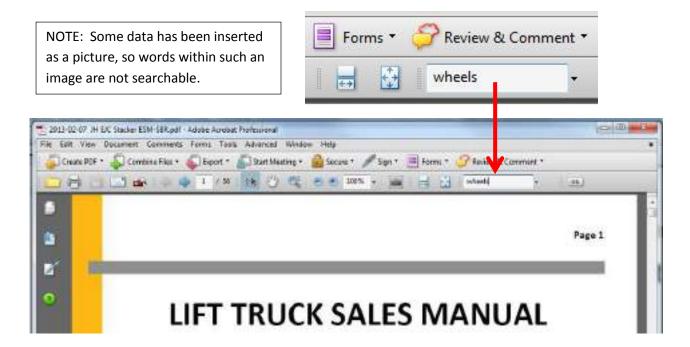
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This will probably be the easiest way to find information. Consider the category or name of the feature and simply click on the item in the Table of Contents to jump to that page.

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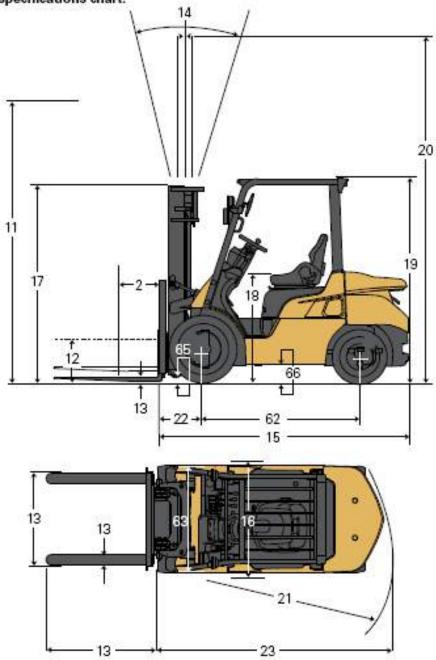




SPECIFICATIONS

Line Art

Call-out numbers shown in the diagram correspond to the first column of the specifications chart.





Primary Specifications

	Characteristics		***	GP	15N	GP	18N	GP2	BOCN	GP	20N	DP	20N	
1	Capacity at rated load center	lb	kg	3,000	1,500	3,500	1,750	4,000	2,000	4,000	2,000	4,000	2,000	
2	Capacity at load center - distance	in	mm	24	500	24	500	24	500	24	500	24 500		
3	Power - electric, diesel, gasoline or LP gas			gasoli	ne/LPG	gasoli	ne/LPG	gasoli	ne/LPG	gasoli	neAPG	diesel		
4	Tire type – cushion or pneumatic			pnec	imatic	pneu	matic	pneu	amatic	pnec	amatic	pneumatic		
5	Wheels (x=driven) - number front / rear			25	72	2×	/2	2x	/2	25	/2	2x/2		
	Dimensions			GP	15N	GP	18N	GP:	20CN	GP	20N	DP	20N	
6	Maximum fork height dop of fork) ⁰	in	mm	131	3,325	131	3,325	131	3,325	131.5	3,340	131,5	3,340	
7	Free fork height ¹¹	in	mm	4.5	115	4.5	115	4.7	120	5.5	140	5.5	140	
8	Forks - thickness × length × width *	in	mm	1.4 x 42.0 x 3.9	35× 1,070× 100	1,4×42,0×3.9	35x 1,070x 100	1.6×42.0×3.9	40x 1,070x 100	1.6×42.0×3.9	40× 1,070× 100	1.6×42.0×3.9	40× 1,070× 10	
9	Fork spacing – out-to-out minimum / maximum	in	mm	7.9 / 36.2	200 / 920	79/36.2	200/920	7.9 / 36.2	200/920	8.7 / 39.4	220 / 1,000	8.7 / 39.4	220 / 1,000	
10	Tilt - forward / backward		leg	6*	10"	6"	10"	6".	7 10°	6°	/ 10*	61	/ 10°	
11	Length to fork face	in	mm	89.0	2,260	90.4	2,295	92.5	2,350	98.0	2,490	98.0	2,490	
12	Width - with single drive tires	in	mm	41.9	1,065	41.9	1,065	41,9	1,065	45,3	1,150	45.3	1,150	
13	Width with dual drive tires			116			-			64.6	1,640	64.6	1,640	
14	Height – with lowered mast ⁽⁾	in	mm	84.5	2,140	84.5	2,140	84.5	2,140	84,5	2,145	84.5	2,145	
15	Seat height to SIP	in	77077	44,4	1,127	44.4	1,127	44,4	1,127	44.8	1,137	44.8	1,137	
16	Height - to top of overhead guard	in	22002	92.7	2.100	82.7	2,100	82.7	2.100	82.9	2.105	82.9	2,105	
17	Height - with extended mast "	in	mm	179	4,549	179	4,549	179	4,549	180	4,564	180	4,564	
18	Minimum outside turning radius	in	0000	76.8	1,950	78.0	1.990	79.5	2,020	86.6	2,200	86.6	2,200	
19	Load moment constant	in	mm	15.7	400	15.7	420	16.3	415	179	455	17.9	455	
ebotos	Minimum aisle – 90° stack – zero clearance without a load	in	mm	92.5	2.350	93.7	2.390	95.9	2.435		2.655	105	2.655	
THE	Performance		1000	***	1SN	- Constant	18N		EOCN		20N	-	2,000 P20N	
21	Travel speed - loaded / empty	meh	km/h	10.9/11.8	175/190	10.9 / 11.8	175/19.0	11.2 / 11.5	18.0/18.5	10.6 / 11.5	170/18.5	10.3 / 11.2	16.5/18.0	
22	Lift speed - loaded / empty	fpm	m/s	122 / 124	0.62/0.63	122 / 124	0.62/0.63	122 / 124	0.62/0.63	124 / 128	0.63/0.65	120 / 126	0.61/0.64	
23	Lowering speed - loaded / empty	fpm	m/s	98.4 / 98.4	0.50/0.50	98.4 / 98.4	0.50 / 0.50	98.4/98.4	0.50 / 0.50	98.4/98.4	0.50/0.50	98.4/98.4	0.50/0.50	
	Drawbar pull – loaded at 1 mph (1,6 km)	lb lb	N	3,910	17400	3,910	12400	3,870	17,200	4,920	21,900	3,960	17,600	
nitim		lb lb	N	4.560		200000		4,500		5,640		4,520	20,100	
25	Drawbar pull – loaded maximum		100	100000	20,300	4,560	20,300	17.77		11/2	25,100	3300		
26			%		9.0		0.0		8.0		9.0		6.0	
27	Gradeability – maximum loaded		ж.		3.0		5.0		6.0		7.0		2.0	
-	Weight				15N		18N		ROCN		20N		20N	
(Actions)	Empty	85	kg	5,650	2,560	6,070	2,750	6,750	3,040	7,370	3,340	7610	3,450	
29	Axie load – with rated load front / rear	Rb.	kg	7,710 / 940	3,620 / 440	8,460 / 1,110	3,980 / 520	9,370 / 1,380	4,390/650	9,950 / 1,420	4,660/685	10,060 / 1,550	4,720 / 730	
30	Axie load – without load front / rear	16	kg	2,490 / 3,160	1,130 / 1,430		1,080 / 1,670	2,390 / 4,360	1,080 / 1,960	3,240 / 4,130	1,470 / 1,870	3,340 / 4,270	1,510/1,946	
-	Chassis			The second second	15N	100000000000000000000000000000000000000	18N	The second state of	ROCN	n moved to	20N	DP20N		
31	Tire size – front, standard	2 3	in	6.5 × 1	0 - 10PR	6.5 × 1) - 10PR	6.5 × 10	/5.0 Solid	20 x 1	2 - 12PR	70 x 12 - 12PR		
32	Tire size – optional duals		in							70 x 1	2 - 12PR	70 x 12 - 12PR		
33	Tire size – rear tires		in.	5.0 x (3 - 10PR	5.0 x 8	- 10PR	5.0 x 8 /	3.0 Solid	6.0×9	9 - 10PR	6.0 x t	9 - 10PR	
34	Wheebase	in	(2202)	55.1	1,400	55.1	1,400	56.1	1,400	63.0	1,600	63.0	1,600	
35	Tread width - front (standard / optional duals)	in	77972	35.07-	890/-	35.0 /-	890/-	35.0/-	890/-	378/474	960 / 1,205	378/474	960 / 1,205	
36	Tread width - rear tires	in	/2002	35.4	900	35.4	900	35.4	900	38.6	980	38.6	980	
37	Ground clearance – at lowest point at mast	in	mm	4.3	110	4.3	110	4.3	110	4.6	117	4.6	117	
38	Ground clearance – at center of wheelbase	in	mm	6.0	152	6.0	152	6.0	152	6.6	167	6.6	167	
39	PRODUCTION OF THE PRODUCTION O	-11	11-72-72	foot-operat	ed, hydraulic	foot-operat	ed, hydraulic		ed, hydraulic	foot-operat	ed, hydraulic	10000	ed, hydraulic	
	Parking brake			11100	echanical	1,000,000,000	echanical	the state of the s	echanical	100000000000000000000000000000000000000	echanical		vechanical	
-4V	Powertrain			The state of the s	15N	-	18N	A STATE OF THE PARTY OF THE PAR	OCN	A STREET, SQUARE, SQUA	2014	The second second	20N	
41	Engine model				TIE .		16	- Vertical	21E	-	256	The state of the s	EG	
42	Engine moder	HP	kW	53.0	39.6	53.0	39.6	53.0	39.6	610	45.8	48.0	36.0	
43	Engine - continuous output S.A.E. gross		rpm Avv	121117	700		700		700		700		250	
44				110	149	110	149	110	149	129	175	131	0.000	
	Engine - maximum torque S.A.E. gross	lb-ft	N-m		CHOOL CO.				5.665.7		121712	1000-11	177	
45	The state of the s	cuin	rpm	100	000	1.50	000		000		600		800	
46	Cylinder / displacement	L	4 / 126	4/21	4 / 126	4/21	4/126	4/2.1	4 / 152	4/2.5	4/203	4/3.3		
47	Transmission – type			ershift		ershift		ershift		ershift		ershift		
48				/1		/1		/1	1/1			/1		
49	Battery	volts			12		12	12		12			12	
50	Relief pressure for attachments	psi	bar	2,610	180	2,610	180	2,610	180	2,610	180	2,610	180	
	Noise level - mean value at operator's ear Leg		RA)		3.5	2	3.5		3.5	1.0	6.5		5.5	



	Characteristics			GP	25N	DP:	25N	GP	28N	DP	28N	
1	Capacity at rated load center	b	kg	5,000	2,500	5,000	2.500	5,500	2,800	5,500	2.800	
2	Capacity at load center - distance	in	mm	24	500	24	500	24	500	24	500	
3	Power - electric, diesel, gasoline or LP gas			gasolic	ve/LPG	die	esel	gasolii	ne/LPG	diesel		
4	Tire type – cushion or pneumatic			-	matic	pneu	matic		imatic	pneumatic		
5	Wheels (x=driven) - number front / rear				/2	2x	/2		/2	2x/2		
	Dimensions				25N	-	25N	-	28N	-	28N	
6	Maximum fork height (top of fork) ¹⁰	io	mm	131.5	3,340	131.5	3,340	130.5	3,315	130.5	3,315	
7	Free fork height ¹¹	in	mm	5.5	140	5.5	140	5.7	145	5.7	145	
8	Forks - thickness x length x width 1	in	mm	1.6×42.0×3.9	40 x 1,070 x 100	1.6×42.0×3.9	40 x 1,070 x 100	1.8×42.0×4.9	45x 1,070x 125	18×42.0×4.9	45× 1,070× 12	
9	Fork spacing – out-to-out minimum / maximum	in	mm	8.7/39.4	220 / 1,000	8.7/39.4	220 / 1,000	9.8/39.4	250 / 1,000	9.8/39.4	250 / 1,000	
10	Tift - forward / backward	d	eg	6°	104	6° /	10°	6°	/10°	6°	/10°	
11	Length to fork face	in	mm	100	2,550	100	2,550	104	2.645	104	2,645	
12	Width - with single drive tires	in	mm	45.3	1,150	45.3	1,150	50.2	1,275	50.2	1,275	
13	Width - with dual drive tires			64.6	1,640	64.6	1,640	67.5	1,715	67.5	1,715	
14	Height - with lowered mast ⁶	in	mm	84.5	2,145	84.5	2,145	85.5	2,165	85.5	2,165	
15		in	mm	44.8	1,137	44.8	1,137	46.7	1,187	46.7	1,187	
16	Height - to top of overhead guard	in	מחות	82.9	2,105	82.9	2,105	83.7	2,125	83.7	2,125	
17	Height - with extended mast ¹¹	in	mm	180	4,564	180	4.564	178.5	4.536	178.5	4.536	
18		in	mm	87.8	2,230	87.8	2,230	91.1	2,315	91.1	2,315	
19		in	27707	179	455	179	455	19.3	490	19.3	490	
20		in	mm	106	2.685	106	2,685	110	2.805	110	2.805	
-	Performance	B) (17112		GP25N		DP25N	20112	111 - 12949	28N	DP28N		
21	Travel speed – loaded / empty	mph	kms/h	10.6 / 11.5	17.0 / 18.5	10.3 / 10.9	16.5/175	10.6 / 11.2	17.0 / 18.0	9.9 / 10.9	16.0 / 17.5	
22		fpm	m/s	124 / 128	0.63/0.65	120 / 126	0.61/0.64	98.4 / 102	0.50 / 0.52	96.5/100	0.49/0.51	
23	Lowering speed – loaded / empty	fpm	m/s	98.4 / 98.4	0.50 / 0.50	98.4 / 98.4	0.50 / 0.50	98.4 / 98.4	0.50/0.50	98.4 / 98.4	0.50 / 0.50 17,600 20,200	
24	Drawbar pull – loaded at 1 mph (1.6 km)	lb.	N	4,900	21,800	3,960	17,600	4,990	22,200			
25		b	N	5,670	25,200	4,520	20,100	5,800	25,800	4,540		
26			16		0.0		1.0		8.0		8.0	
27		%		49.0			7.0		3.0		2.0	
41	Weight		70	-	25N	10000	25N	270	28N	1,000	28N	
22	Empty	ъ	kg	7,990	3,620	8,210	3,720	9,090	4,120	9,330	4,230	
29		ь	kg	11,570 / 1,420	5,450/670	11,650 / 1,560	5,490 / 730	12,950 / 1,640	6,100 / 70	13,050 / 1,780	6,150 / 830	
30		B	ka	3,190/4,800	1,440/2,180	3,260 / 4,950	1,480 / 2,240	3,670 / 5,420	1,660 / 2,460	3,730 / 5,600	1,690 / 2,540	
30	Chassis	-	7.0	Mark Control of the Park of th	25N	WINDSHOP OF THE PERSON	25N	THE RESERVE AND PARTY OF THE PA	28N	THE RESERVE OF THE PARTY OF THE PARTY.	28N	
01	The state of the s	-										
31	Tire size – front, standard		n		- 12PR		2 - 12PR		15-12PR		15 - 12PR	
32			n		- 12PR		2 - 12PR		15-12PR		15 - 12PR	
33	Tire size - rear tires		n	6.0 x 9	- 10PR	6.0 x 9	- 10PR	6.5 × 10	0 - 10PR	6.5 × 1	0 - 10PR	
34	Wheelbase	in	mm	63.0	1,600	63.0	1,600	63.8	1,620	63.8	1,620	
35	Tread width - front (standard / optional duals)	in	מחווו	378 / 474	960 / 1,205	378/474	960 / 1,205	41.7 / 47.2	1,060 / 1,200	41.7 / 472	1,060 / 1,200	
	Tread width rear tires	in	mm	38.6	980	38.6	980	38.6	980	38.6	980	
36		in	777773	4.6	117	4.6	117	5.4	136	5.4	136	
-	Ground clearance – at lowest point at mast			2.0	167	6.6	167	7.4	189	7.4	189	
36		in	מחוח	6.6	107				ad burdenslie	foot-operated, hydraulic hand, mechanical		
36 37	Ground clearance – at center of wheelbase	in	mm		ed, hydraulic		ed, hydraulic	foot-operate	eu, nyaraunc			
36 37 38 39	Ground clearance – at center of wheelbase	in	מתח	foot-operate	17.57	foot-operate	ed, hydraulic echanical		echanical		echanical	
36 37 38 39	Ground clearance – at center of wheelbase Service brake	'n	mm	foot-operati hand, m	ed, hydraulic	foot-operate hand, m		hand, m		hand, m	echanical 28N	
36 37 38 39	Ground clearance – at center of wheelbase Service brake Parting brake Fowertrain	in	mm	foot-operati hand, m GP	ed, hydraulic echanical	foot-operate hand, m DP	echanical	hand, m GP	echanical	hand, m	Dibiologica de Paris	
36 37 38 39 40 41 42	Ground clearance – at center of wheelbase Service brake Parting brake Powertrain Engine model Engine — continuous output S.A.E. gross	HP	kW.	foot-operate hand, m	ed, hydraulic echanical 25 N 15 E 45.8	foot-operate hand, m DP 41 48.0	echanical 25N EG 36.0	hand, m GP K2 61.0	echanical 28N 25E 45.8	hand, m DP 4 48.0	28N EG 36.0	
36 37 38 39 40 41 42 43	Ground clearance – at center of wheelbase Service brake Parting brake Powertrain Engine model Engine – continuous output S.A.E. gross	HP at	kW rpm	foot-operate hand, m GP K3 61.0	ed, hydraulic echanical 25N 5E 45.8	foot-operate hand, m DP 41 48.0	echanical 25N EG 36.0	61.0 2,1	echanical 28N 25E 45.8 700	hand, m DP 4 48.0 2,	28N EG 36.0 250	
36 37 38 39 40 41 42 43 44	Ground clearance – at center of wheelbase Service brake Parting brake Powertrain Engine model Engine – continuous output S.A.E. gross	HP at b-ft	#W rpm N-m	foot-operation hand, m GP K3 61.0 2.1	ad, hydraulic echanical 25N 15E 45.8 700	foot-operate hand, m DP 41 48.0 2,1	echanical 25N EG 36.0 250	61.0 2.129	echanical 28N 25E 45.8 700 175	hand, m DP 4 48.0 2.	28N EG 36.0 250	
36 37 38 39 40 41 42 43 44 45	Ground clearance – at center of wheelbase Service brake Parting brake Powertrain Engine model Engine – continuous output S.A.E. gross Engine – maximum torque S.A.E. gross	HP at b-ft at	RW rpm N-m	foot-operation hand, mind of the foot of t	ad, hydraulic echanical 25N 15E 45.8 700 175	foot-operate hand, m DP: 41 48.0 2,3 131	echanical 25N EG 36.0 250 177	61.0 2,:	echanical 28N 25E 45.8 700 175 800	hand, m DP 4 48.0 2, 131	26N EG 36.0 250 177	
36 37 38 39 40 41 42 43 44 45	Ground clearance – at center of wheelbase Service brake Parting brake Powertrain Engine model Engine – continuous output S.A.E. gross Engine – maximum torque S.A.E. gross Cylinder / displacement	HP at b-ft	#W rpm N-m	foot-operate hand, m GP K3 61.0 2.1 129 1,/ 152	ad, hydraulic echanical 25N 15E 45.8 700 175 1008	foot-operate hand, m DP, 41, 48.0 2.1 131 1,4 4 / 203	echanical 25N EG 36.0 177 800 4/3.3	61.0 2,129 1,4 / 152	echanical 28N 25E 45.8 700 175 000 4/2.5	hand, m DP 48.0 2, 131 1, 4 / 203	28N EG 36.0 250 177 800 4/3.3	
36 37 38 39 40 41 42 43 44 45 46 47	Ground clearance – at center of wheelbase Service brake Parting brake Powertrain Engine model Engine – continuous output S.A.E. gross Engine – maximum torque S.A.E. gross Cylinder / displacement Transmission – type	HP at b-ft at	RW rpm N-m	foot-operate hand, m GP K3 61.0 2.1 129 1,1 4 / 152 power	ad, hydraulic echanical 25N 15E 45.8 700 175 1008 4/2.5 ershift	foot-operate hand, m DP 48.0 2.3 131 1,4 4 / 203 power	echanical 25N EG 36.0 250 177 800 4/3.3 seshift	610 2: 129 1,4/152 power	echanical 28N 25E 45.8 700 175 600 4/25 ershift	hand, m DP 48.0 2, 131 1, 4 / 203 pow	26N EG 36.0 250 177 800 4/3.3 ershift	
36 37 38 39 40 41 42 43 44 45 46 47	Ground clearance – at center of wheelbase Service brake Parting brake Powertrain Engine model Engine – continuous output S.A.E. gross Engine – maximum torque S.A.E. gross Cylinder / displacement Transmission – type Transmission – number of speeds forward / reverse	HP at b-ft at cuin	pm N-m	foot-operate hand, m GP 61:0 61:0 2:129 1,1 4 / 152 powr 1	ad, hydraulic echanical 25N 45.8 700 175 000 4/2.5 ershift / 1	foot-operate hand, m DP 41 48.0 2.3 131 1,4 4 / 203 power 1	echanical 25N EG 36.0 250 177 800 4/3.3 ershift /1	hand, m GP K3 61.0 2,: 129 1,: 4 / 152 powr 1	echanical 28N 25E 45.8 700 175 600 4/25 ershift /1	hand, m DP 44 48.0 2, 131 1, 4/203 powr 1	26N EG 36.0 250 177 800 4/3.3 ershift /1	
36 37 38 39 40 41 42 43 44 45 46 47	Ground clearance – at center of wheelbase Service brake Parting brake Powertrain Engine model Engine – continuous output S.A.E. gross Engine – maximum torque S.A.E. gross Cylinder / displacement Transmission – type Transmission – number of speeds forward / reverse Battery	HP at b-ft at cuin	RW rpm N-m	foot-operate hand, m GP 61:0 61:0 2:129 1,1 4 / 152 powr 1	ad, hydraulic echanical 25N 15E 45.8 700 175 1008 4/2.5 ershift	foot-operate hand, m DP 41 48.0 2.3 131 1,4 4 / 203 power 1	echanical 25N EG 36.0 250 177 800 4/3.3 seshift	hand, m GP K3 61.0 2,: 129 1,: 4 / 152 powr 1	echanical 28N 25E 45.8 700 175 600 4/25 ershift	hand, m DP 44 48.0 2, 131 1, 4/203 powr 1	26N EG 36.0 250 177 800 4/3.3	



Page 13

	Designation			qr.	MN	0.79944		6919		- 19	TRV	- 0/	969.	DESK		
10	Capacity at releyd food-person		N/	0,000	31,600	0,090	-8 000	6,000	2300	9,900	3,300	7000	A.800.	2000	31,899	
1	Capacity aritrad center - distance		Ace	. 24	166	29	500	- 31	800	24	209	24	300	36	890	
4	Ferover - ellectric, distret, gasoline or LF gas			94400	HST-FB	, de	epet.	94006	HILPS	- 6	read	94115	HAT.PG	16	inset	
4	Tire tripe - cyclinia or presentatio			2794	man	previous		provinces		preynatio		memoria		promote		
	(Sheets (coddyes) - sprober from / rear			26	12	\$172		\$1/2		2672		3	12	21/2		
	Phonone			QP.	NA.	07944		OFARK		04404		07994		serving		
	Macrosom from the ight drop of fresh."	- 20	. pen	1105	33/8	1968	6398	130.6	8350	OUR	3,390	1318	35,000	915	3.1W	
1	Free fox height *	- 20	298	1.7	145	6.7	145	5.9	159	5.0	180	5.5	750	5.0	159	
	Nortic - Michigans + Tanggh; a unital; 1		Print	18.042/864.9	45×1.070×128	10×420×43	des carres um	10×40,0×4%	80× 1,870× 138	20(420:40	80v 7,010v 525	201000000	80× 1,010v 12	A 20-40-40	50x1x070x12	
	Furth specing - out-to-out or himsen, I make num.	in	246	887394	25071,600	3.0 (29.4	251/1.000	9.6729.4	20071.000	99/394	280/1,000	88 (994	250/1,000	8.07264	2507 1.000	
10	Tits – forward (badroant)		reg.	47	107	91	100	87	18"	40	rie-		(10)	#	7.00	
n	Length to fork face	- in	(NO.	107	2.720	107	2720	108	2750	100	2.760	160	2,790	110	2.790	
12	1000s - with ringle oftie tites	- Pr	pen.	80.2	1279	902	1,378	90.2	1,279	80.2	1,278	90.8	1,790	10.8	1,390	
78	1998) - with dust shine tiess			ere.	1,705	676	1.718	679	1.718	615	1,356	825	2,716	426	1,246	
14	Weight - with lowered meet."	in in	pm.	10.5	2.146	15.5	2.005	90.5	2299	90.5	2.09	80.5	2,299	10.5	2.200	
42	2nd hours to 217		440	491.7	5.18E	457	1.567	96.7	1.997	49.7	3,760	40.7	5.187	367	1,187	
10	Height - to top of invertigal punit	in	2911	89.7	2.127	60.7	2.120	80.7	2129	80.7	2,100	54.5	2147	94.2	2,140	
¥t.	theight - with extended mary."	- in	010	1765	4.530	1765	4.50V	HIS.	4.509	190	4.500	100	4.506	180	4.584	
10	Minimum tradeble Kaming halfasi	le-	2000	40.7	2,280	43.7	2,885	98.7	Z480	96.7	2,480	96.0	2,449	863	2,440	
10	Lord moment constant	- 44	em	9.1	430	19.9	430	10.3	499	79.7	400	19.8	298	18.0	496	
20	Windows side - 80" mad: - 2010 cleanance without a load	én.	Pres	163	2,670	712	2.670	116	2029	9.0	2,620	116	21005	0.6	2,006	
	Participance			QF.	PHY	DW	3044	GPUN		OF	139	Qf	THE PARTY	01	POUR	
11	Travel speed - loaded / arrans	mph	Hryb	19.67 19.5	100/160	9.9710.0	16/6/378	19,9711.8	2007768	105/112	102/180	19.07 11.0	17671968	1937.103	937904	
22	Lift speed - loaded / langing	Spen.	min.	89.67400	9.6079.53	86.5 / 108	2.69,935	90-47-00	050/050	905/99	649/681	02.7 / 80.6	0.407644	BRITISER	0.01/000	
22	Limening speed - badled / ampty	Specia	reb	0847984	05073.50	9847984	0.59/0.58	90.4199.4	650/0.50	3647964	4.90/4.50	984/184	0.5674.50	981/984	0.897458	
18	Itsenbergust - looded at 1 mg/h chit turn	- 81	N	4,608	22.200	3,563	10808	48.00	20,500	3,630	76.00	1,010	20,800	0.818	16,100	
15	Drawter gulf - loaded maximum		N	5.600	25,600	2,540	29,202	9,319	22 606	4.90	28,409	5,910	23,800	8.140	18,000	
25	Gradestriks - haded at 1 mph [16km]		5	14	10	20.0		500		22.0		216		- 1	28.0	
IF.	Debaling - restrict betall	41		10.0		300		264		3	20 :		0.65			
	Weight		`		MAY.	DRIM		GPINN		20109		GPINN		DESKS		
26	Lagra		No.	8408 4,265		8,640 4,370		10.150 4.600		10.590 4.710		(0.340 4.600		11,560	4.800	
55	fulcions with rated had from from		No.	13.7967 (410.	6.501 / 87H	19.00077.750	6.8507.801	14,500.77,040	6.565 / 0.70	14,700 / 2,100	6,900 / 1,040	18.496 / 1.698	2280 / 940	45.500 / 2.100	2000/1000	
90	Existant - without lad front J res		10	2 600 / 6 Sep	1,300 / 2,500	8,629,15,729	Secretary Control of the Control of	3.790 / 6.360	1,71672,800	Activities and an incident and	Entertain Contract of Contract	3.500/most	1,680,73,085	2.629 / 6.779	of Bernard Control Control Control	
na.	Baselin .		the same of the sa	gar.	SHEY	0.0	2444	-	2166	And in case of the last of the	TPV	1.04	259	CONTRACTOR OF THE PARTY OF	Piping	
31	Tire size - from, mandard		in	26 + 0 + 1	15-1259	28 x 8 x 10 - 12/6		250 v 76 - 10F9		250 x 15 - 1079		250×15 - 10FR			16-19PR	
ar	Fire size - optional duals		10	28 + 3 +			15-1256	28 x 8 x 10 x 1288		28 + 0 × 16 - 1244				410.0		
-	Ten a tip - mar tippe			88×N			5 1670	44,110,200,100		38 1 0 - 10 - 1284		28 - 9 - 18 - 13 FR		05 + 9 + 19 - 10PR		
	electron per production		ja,			-		05 + 10 - 12FF								
32	Wester	in	PER	864	1,700	860	1,700	ML0	1,300	66.9	1,700	86.9	1,700	46.1	1,700	
8	Treed width - from Itrandeni / optional dualni		- tun	W7/401	1,880 / 1,200	M7/402	1,069,77,260	417/472	1,060 / 1,200	#7/47E	1,0407,1,000	#7/60	1,868 / 1,200		1,3687 (200	
30		- 10	peri	384	1885	366	OUP .	16.6	900	34.6	500	90.8	900	36,6	980	
ar.	Stound clearance — at to sumpoint at mass			5.4	100	1.4	-06	54	106	5.8	198	8.7	146	8.7	140	
36	Energickenses - a cores of wiseless		\$100	- 19	1900	14	100	34	- 40	74	169	411	300	100	267	
20				factoperate		A STATE OF THE PARTY OF THE PAR	ed hybrok:	foot-sparets		THE PERSON NAMED IN	ed fedtade	A STATE OF THE PARTY OF	ed Pydraulic		ed, lybudi	
80	Forting brain			hand, re	CONTRACTOR		scharloof		e francisk		MINNEY.		edignical		nerFehine!	
-	Proceedings			gr.		OR:		107	7074	100	130		155		rates	
	Englosmodel				94		69		196		EG		INE.		400	
44	Engine - communica nutaut S.A.E. gross	147	MA	110	46.6	480	36.0	ario.	48.8	48.0	360	860	48#	411	30.0	
40	San Control of the Co		ripen	The second secon	100	100000000000000000000000000000000000000	250		790	\$	250	1-2/	704		260	
44	Engine - reservoire totales C.A.C. gener	5-10	Title .	129	1766	100	187	128	LER.	101	107	129	875	131	677	
dS		N/W	ipei.		MA.		180		SMO		ent .		eos.		,iipo	
85	Cylinder / displacement	d 152	4/25	4/303 4/83		4/162 4/25		81300 E/3.0		41152	1/28	4/263	4/33			
321	Removation - type	11.		nst	powerpile		powerne		privately		powershift		powershift			
	harmonism - number of specific travard / severie		11.7		JK	1/1		125			11:		GX:			
41	And the first of the control of the			1 4	C C	12		12		10			12		12	
40 80			and tracked his													
46 80 60	Earth/s Exited precovers for effective miles These from - mean value at specific's per Lag	240	ter.	3,646	180	2,010	100	1360	188	1.640	180	1,510	ANV.	2,610	160	



Mast Tables

GP15N – Single Drive

ed.	12000	Maximum Fork Height		Overall Lowered		erall Lowered Overall Extended Height						Fre	elift		Tilt	Forks			Capacity shifter **	Total Weight with Standard	
Mast Ty	(M	FH)	(0	AL)		oad krest	w/o Load Backrest		w/ I Bac	Load krest		Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	Can	riage " Forks		
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	lb	kg	lb	kg		
	80	2030	59	1500	129	3260	104	2640	4.5	115	4.5	115	6° / 10°	3000	1500	2900	1450	5450	2470		
ш	102	2590	70	1780	151	3820	126	3200	4.5	115	4.5	115	6° / 10°	3000	1500	2900	1450	5540	2510		
	110	2790	74	1880	159	4020	134	3400	4.5	115	4.5	115	6° / 6°	3000	1500	2900	1450	5560	2520		
	119	3030	79	2000	168	4260	144	3640	4.5	115	4.5	115	6° / 10°	3000	1500	2900	1450	5600	2540		
×	130	3320	85	2140	180	4550	155	3930	4.5	115	4.5	115	6° / 10°	3000	1500	2850	1430	5650	2560		
SIMPLEX	140	3560	89	2260	189	4790	164	4170	4.5	115	4.5	115	6° / 10°	3000	1500	2800	1400	5690	2580		
ž	147	3750	95	2400	197	4980	172	4360	4.5	115	4.5	115	6° / 6°	3000	1500	2750	1380	5740	2600		
S	162	4120	102	2590	211	5350	187	4730	4.5	115	4.5	115	6° / 6°	3000	1500	2600	1330	5830	2640		
ш	177	4510	110	2790	226	5740	202	5120	4.5	115	4.5	115	6° / 6°	2900	1430	2550	1280	5870	2660		
ш	198	5030	121	3050	247	6260	222	5640	4.5	115	4.5	115	6° / 6°	2200	1000	1950	900	6000	2720		
	217	5530	130	3300	267	6760	242	6140	4.5	115	4.5	115	6° / 6°	1500	700	1300	600	6070	2750		
- 0	237	6030	140	3550	286	7260	262	6640	4.5	115	4.5	115	6° / 6°	8.00	*	*		6130	2780		
	111	2830	75	1900	160	4060	136	3440	26	670	50	1290	6° / 6°	3000	1500	2900	1450	5630	2550		
×	119	3030	79	2000	168	4260	144	3640	30	770	54	1390	6° / 10°	3000	1500	2900	1450	5650	2560		
H.	131	3330	85	2140	180	4560	155	3930	36	920	60	1540	6° / 10°	3000	1500	2850	1430	5690	2580		
DUPLEX	139	3550	89	2260	188	4780	164	4150	40	1040	65	1660	6° / 10°	3000	1500	2800	1400	5760	2610		
۵	147	3730	95	2400	196	4960	171	4340	46	1180	70	1800	6° / 6°	3000	1500	2750	1380	5800	2630		
	160	4060	102	2590	209	5290	184	4670	53	1360	78	1980	6° / 6°	3000	1500	2600	1330	5890	2670		
	147	3740	71	1800	196	4970	172	4350	22	570	47	1190	6° / 6°	3000	1500	2700	1350	5870	2660		
ш	159	4040	75	1900	208	5270	183	4650	26	670	50	1290	6° / 6°	2900	1450	2600	1330	5910	2680		
2000	171	4340	79	2000	220	5570	195	4950	30	770	54	1390	6° / 6°	2850	1430	2550	1280	5960	2700		
TRIPLEX	188	4780	85	2140	237	6010	213	5390	36	910	60	1540	6° / 6°	2700	1230	2450	1130	6020	2730		
7	201	5120	89	2260	250	6350	226	5730	40	1030	65	1660	6° / 6°	2100	980	1900	880	6070	2750		
2	217	5520	95	2400	266	6750	242	6130	46	1170	70	1800	6° / 6°	1500	700	1400	650	6200	2810		
533	237	6020	102	2590	286	7250	261	6630	53	1360	78	1980	6° / 6°	1000	480			6270	2840		
	256	6520	113	2850	306	7750	281	7130	63	1620	88	2240	6° / 6°					6350	2880		
	276	7030	121	3050	326	8260	301	7640	71	1820	96	2450	6° / 6°					6460	2930		

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP15N - Solid Drive

9	100000000000000000000000000000000000000	um Fork ight	Overall	Lowered	Ove	erall Exte	nded He	eight		Fre	elift		Tilt	Forks			Capacity shifter **	100000000000000000000000000000000000000	Weight
Mast Type	(M	FH)	(0	AL)		Load krest	-	Load krest	2000	oad krest		Load krest	F/B	@24 in Load	@ 500 mm Load	@24 in Load	@ 500 mm Load	Can	tandard riage ** Forks
-	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	dea	Center	Center kg	Center	Center kg	lb	kg
H	80	2030	59	1500	129	3260	104	2640	4.5	115	4.5	115	6° / 10°	3000	1500	3000	1450	5600	2540
ı	102	2590	70	1780	151	3820	126	3200	4.5	115	4.5	115	6° / 10°	3000	1500	3000	1450	5690	2580
ı	110	2790	74	1880	159	4020	134	3400	4.5	115	4.5	115	6° / 6°	3000	1500	3000	1450	5710	2590
	119	3030	79	2000	168	4260	144	3640	4.5	115	4.5	115	6° / 10°	3000	1500	3000	1450	5760	2610
×	130	3320	85	2140	180	4550	155	3930	4.5	115	4.5	115	6° / 10°	3000	1500	2900	1450	5780	2620
SIMPLEX	140	3560	89	2260	189	4790	164	4170	4.5	115	4.5	115	6° / 10°	3000	1500	2850	1430	5830	2640
M	147	3750	95	2400	197	4980	172	4360	4.5	115	4.5	115	6° / 6°	3000	1500	2800	1400	5870	2660
S	162	4120	102	2590	211	5350	187	4730	4.5	115	4.5	115	6° / 6°	3000	1500	2750	1350	5960	2700
	177	4510	110	2790	226	5740	202	5120	4.5	115	4.5	115	6° / 6°	2900	1430	2600	1300	6020	2730
	198	5030	121	3050	247	6260	222	5640	4.5	115	4.5	115	6° / 6°	2750	1350	2400	1100	6130	2780
	217	5530	130	3300	267	6760	242	6140	4.5	115	4.5	115	6° / 6°	1850	1000	1700	780	6220	2820
	237	6030	140	3550	286	7260	262	6640	4.5	115	4.5	115	6° / 6°	1150	650	1050	475	6290	2850
Г	111	2830	75	1900	160	4060	136	3440	26	670	50	1290	6° / 6°	3000	1500	3000	1450	5760	2610
×	119	3030	79	2000	168	4260	144	3640	30	770	54	1390	6° / 10°	3000	1500	3000	1450	5800	2630
Ę	131	3320	85	2140	180	4560	155	3930	36	910	60	1540	6° / 10°	3000	1500	2900	1450	5850	2650
DUPLEX	139	3540	89	2260	188	4780	164	4150	40	1030	65	1660	6° / 10°	3000	1500	2850	1430	590	2670
0	147	3730	95	2400	196	4960	171	4340	46	1170	70	1800	6° / 6°	3000	1500	2800	1400	5940	2690
	160	4060	102	2590	209	5290	184	4670	53	1360	78	1985	6° / 6°	3000	1500	2750	1350	6020	2730
	147	3740	71	1800	196	4970	172	4350	22	570	47	1190	6° / 6°	3000	1500	2750	1350	6000	2720
	159	4040	75	1900	208	5270	183	4650	26	670	50	1290	6° / 6°	3000	1500	2700	1330	6050	2740
×	171	4340	79	2000	220	5570	195	4950	30	770	54	1390	6° / 6°	2900	1430	2600	1300	6110	2770
TRIPLEX	188	4780	85	2140	237	6010	213	5390	36	910	60	1540	6° / 6°	2800	1380	2500	1250	6160	2790
P P	201	5120	89	2260	250	6350	226	5730	40	1030	65	1660	6° / 6°	2700	1330	2250	1030	6220	2820
Ŧ	217	5520	95	2400	266	6750	242	6130	46	1170	70	1800	6° / 6°	1850	1000	1750	800	6330	2870
	237	6020	102	2590	286	7250	261	6630	53	1360	78	1980	6° / 6°	1150	650	1050	480	6420	2910
	256	6520	113	2850	306	7750	281	7130	63	1620	88	2240	6° / 6°	750	450	600	280	6510	2950
	276	7030	121	3050	326	8260	301	7640	71	1820	96	2450	6° / 6°	350	280	250	130	6600	2990

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP18N - Single Drive

0	1000	um Fork. ight	Overall	erall Lowered Overall Extended Height						Fre	elifi		Tift	Rated Ca Fo		Rated 0	Capacity shifter **	Total \	Weight
Mast Typ	(M	FH)	(0	AL)		Load krest	w/o Load Backrest		w/Load Backrest		wfo Load Backrest		F/B	@24 in Load Center	mm Load Center	@24 in Load Center	mm Load Center	Can	tandard nage " Forks
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	Tb.	kg	b	kg	lb	kg
Г	80	2030	59	1500	129	3260	104	2640	4.5	115	4.5	115	6° / 10°	3500	1750	3400	1650	5890	2670
ı	102	2590	70	1780	151	3820	126	3200	4.5	115	4.5	115	6" / 10"	3500	1750	3400	1650	5980	2710
ı	110	2790	74	1880	159	4020	134	3400	4.5	115	4.5	115	6.16.	3500	1750	3400	1650	6000	2720
L	119	3030	79	2000	168	4260	144	3640	4.5	115	4.5	115	6° / 10°	3500	1750	3400	1650	6020	2730
×	130	3320	85	2140	180	4550	155	3930	4.5	115	4.5	115	6° / 10°	3500	1750	3400	1650	6070	2750
5	140	3560	89	2260	189	4790	164	4170	4.5	115	4.5	115	6" / 10"	3500	1750	3350	1650	6110	2770
SIMPL	147	3750	95	2400	197	4960	172	4360	4.5	115	4.5	115	6" / 6"	3500	1750	3300	1630	6160	2790
02	162	4120	102	2590	211	5350	187	4730	4.5	115	4.5	115	6" / 6"	3500	1750	3150	1580	6240	2830
ı	177	4510	110	2790	226	5740	202	5120	4.5	115	4.5	115	6" / 6"	3150	1450	2900	1330	6310	2860
1	198	5030	121	3050	247	6260	222	5640	4.5	115	4.5	115	6"/6"	2200	1000	1950	900	6420	2910
L	217	5530	130	3300	267	6760	242	6140	4.5	115	4.5	115	6"/6"	1500	700	1300	600	6490	2940
	237	6030	140	3550	296	7260	262	6640	4.5	115	4.5	115	6"/6"	1000	480			6570	2980
г	111	2830	75	1900	160	4060	136	3440	26	670	50	1290	6º / 6º	3500	1750	3400	1650	6050	2740
×	119	3030	79	2000	168	4260	144	3640	30	770	54	1390	6° 7 10°	3500	1750	3400	1650	6090	2760
4	131	3330	85	2140	180	4560	155	3930	36	910	80	1540	6° / 10°	3500	1750	3400	1650	6130	2780
DUPL	139	3550	89	2260	188	4780	164	4150	40	1030	65	1660	6° / 10°	3500	1750	3350	1650	6180	2800
0	147	3730	95	2400	196	4960	171	4340	46	1170	70	1800	6"/6"	3500	1750	3300	1630	6220	2820
	160	4060	102	2590	209	5290	184	4670	53	1360	78	1980	6"/6"	3500	1750	3150	1580	6310	2860
	147	3740	71	1800	196	4970	172	4350	22	570	47	1190	6*/6*	3500	1750	3250	1630	6290	2850
	159	4040	75	1900	208	5270	183	4650	26	670	50	1290	6" / 6"	3450	1730	3150	1580	6330	2870
	171	4340	79	2000	220	5570	195	4950	30	770	54	1390	6° / 6°	3400	1630	3050	1500	6400	2900
EX	188	4780	85	2140	237	6010	213	5390	36	910	60	1540	6"/6"	2700	1230	2450	1130	6440	2920
置	201	5120	89	2260	250	6350	226	5730	40	1030	65	1660	6"/6"	2100	980	1900	880	6490	2940
굗	217	5520	95	2400	266	6750	242	6130	46	1170	70	1800	6" / 6"	1500	700	1400	650	6620	3000
-	237	6020	102	2590	286	7250	261	6630	53	1360	78	1990	6.16.	1000	480			6710	3040
	256	6520	113	2850	306	7750	281	7130	63	1620	88	2240	6" / 6"	110		**		6800	3080
	276	7030	121	3050	326	8260	301	7640	71	1820	96	2450	6" / 6"					6880	3120

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP18N – Solid Drive

9	A COLUMN TO SHARE SHEET	um Fork light	Overall	Lowered	Ow	erall Exte	nded He	eight		Fre	elift		Tilt	A STATE OF THE PARTY OF THE PARTY OF	pacity w/ rks	THE PERSON NAMED IN	Capacity shifter **	A 500 W 100	Weight
Mast Type	(M	FH)	(0	AL)		Load krest		Load krest	100000	Load krest		Load krest	F/B	@24 in Load Center	@ 500 mm Load	@24 in Load Contor	@ 500 mm Load	Can	tandard riage " Forks
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	dea	Ib	Center kg	lb	Center kg	lb	kg
	80	2030	59	1500	129	3260	104	2640	4.5	115	4.5	115	6° / 10°	3500	1750	3500	1650	6050	2740
1	102	2590	70	1780	151	3820	126	3200	4.5	115	4.5	115	6° / 10°	3500	1750	3500	1650	6110	2770
1	110	2790	74	1880	159	4020	134	3400	4.5	115	4.5	115	6° / 6°	3500	1750	3500	1650	6130	2780
	119	3030	79	2000	168	4260	144	3640	4.5	115	4.5	115	6° / 10°	3500	1750	3500	1650	6180	2800
×	130	3320	85	2140	180	4550	155	3930	4.5	115	4.5	115	6° / 10°	3500	1750	3500	1650	6220	2820
SIMPLEX	140	3560	89	2260	189	4790	164	4170	4.5	115	4.5	115	6° / 10°	3500	1750	3350	1650	6270	2840
ξ	147	3750	95	2400	197	4980	172	4360	4.5	115	4.5	115	6° / 6°	3500	1750	3300	1650	6310	2860
S	162	4120	102	2590	211	5350	187	4730	4.5	115	4.5	115	6° / 6°	3500	1750	3200	1600	6400	2900
	177	4510	110	2790	226	5740	202	5120	4.5	115	4.5	115	6° / 6°	3450	1700	3100	1530	6440	2920
1	198	5030	121	3050	247	6260	222	5640	4.5	115	4.5	115	6° / 6°	3050	1400	2400	1100	6570	2980
1	217	5530	130	3300	267	6760	242	6140	4.5	115	4.5	115	6° / 6°	1850	1000	1700	780	6640	3010
	237	6030	140	3550	286	7260	262	6640	4.5	115	4.5	115	6° / 6°	1150	650	1050	480	6710	3040
	111	2830	75	1900	160	4060	136	3440	26	670	50	1290	6° / 6°	3500	1750	3500	1650	6200	2810
×	119	3030	79	2000	168	4260	144	3640	30	770	54	1390	6° / 10°	3500	1750	3500	1650	6220	2820
빌	131	3330	85	2140	180	4560	155	3930	36	910	60	1540	6° / 10°	3500	1750	3500	1650	6270	2840
DUPLEX	139	3550	89	2260	188	4780	164	4150	40	1030	65	1660	6° / 10°	3500	1750	3350	1650	6330	2870
	147	3730	95	2400	196	4960	171	4340	46	1170	70	1800	6° / 6°	3500	1750	3300	1650	6380	2890
	160	4060	102	2590	209	5290	184	4670	53	1360	78	1980	6° / 6°	3500	1750	3200	1600	6460	2930
	147	3740	71	1800	196	4970	172	4350	22	570	47	1190	6° / 6°	3500	1750	3300	1630	6440	2920
1	159	4040	75	1900	208	5270	183	4650	26	670	50	1290	6° / 6°	3500	1750	3200	1580	6490	2940
V	171	4340	79	2000	220	5570	195	4950	30	770	54	1390	6° / 6°	3450	1700	3100	1550	6530	2960
TRIPLEX	188	4780	85	2140	237	6010	213	5390	36	910	60	1540	6° / 6°	3300	1630	3000	1480	6600	2990
<u>a</u>	201	5120	89	2260	250	6350	226	5730	40	1030	65	1660	6° / 6°	2900	1330	2250	1030	6640	3010
F	217	5520	95	2400	266	6750	242	6130	46	1170	70	1800	6° / 6°	1850	1000	1750	800	6770	3070
	237	6020	102	2590	286	7250	261	6630	53	1360	78	1980	6° / 6°	1150	650	1050	480	6860	3110
1	256	6520	113	2850	306	7750	281	7130	63	1620	88	2240	6° / 6°	750	450	600	280	6930	3140
	276	7030	121	3050	326	8260	301	7640	71	1820	96	2450	6° / 6°	350	280	250	130	7040	3190

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP20CN – Single Drive

	100	um Fork ight	Overali	Lowered	Ox	erall Exte	nded He	eight.		Fire	elit		Titt	100 4000000	pacity w/	Rated 0 w/ Sides	Capacity shifter ***		Veight
Mast Type	(MA	FH)	(0.	AL)		oad krest		Load krest	377.7	Load krest		Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	with St Can and 42	iage
L	in	mm	in	mm	in	mm	in	mm	. Iri	mm	in	mm	deg	b	kg	. Ib	kg	16	kg
г	80	2040	59	1500	129	3260	104	2640	4.5	115	4.5	115	6" / 10"	3500	2000	3500	1950	6550	2970
ı	102	2600	70	1780	151	3820	126	3200	4.5	115	4.5	115	6" / 10"	3500	2000	3500	1950	6640	3010
ı	110	2800	74	1885	159	4020	134	3400	4.5	115	4.5	115	6.16.	3500	2000	3500	1950	6660	3020
ı	119	3040	79	2000	168	4260	144	3840	4.5	115	4.5	115	6" / 10"	3500	2000	3500	1950	6710	3040
8	130	3330	85	2140	180	4550	165	3930	4.5	115	4.5	115	6" / 10"	3500	2000	3500	1950	6750	3060
SIMPLEX	140	3570	89	2260	189	4790	164	4170	4.5	115	4.5	115	6" / 10"	3500	2000	3350	1930	6800	3080
茎	147	3760	95	2400	197	4960	172	4380	4.5	115	4.5	115	6° / 6°	3500	2000	3300	1900	6840	3100
90	162	4130	102	2590	211	5350	187	4730	4.5	115	4.5	115	60/60	3500	2000	3200	1830	6910	3130
	177	4520	110	2790	226	5740	202	5120	4.5	115	4.5	115	60160	3450	1950	3100	1780	6970	3160
ı	198	5040	121	3050	247	6260	222	5640	4.5	115	4.5	115	6.18.	3050	1400	2400	1100	7090	3210
	217	5540	130	3300	267	6750	242	6140	4.5	115	4.5	115	6" / 6"	1850	850	1700		7170	3250
	237	6040	140	3550	286	7260	262	6640	4.5	115	4.5	115	6º / 8º	1150	525	1050	*	7240	3280
	111	2840	75	1895	180	4060	136	3440	26	670	50	1300	6" / 6"	3500	2000	3500	1950	6730	3050
×	119	3040	79	1995	168	4260	144	3540	30	770	54	1400	6" / 10"	3500	2000	3500	1950	6750	3060
3	131	3330	85	2140	180	4580	155	3930	36	920	60	1540	6" / 10"	3500	2000	3500	1950	6800	3080
DUPLEX	139	3550	89	2280	188	4780	164	4150	40	1040	85	1860	6" / 10"	3500	2000	3350	1930	6840	3100
0	147	3740	95	2400	196	4960	171	4340	46	1180	70	1800	6" / 6"	3500	2000	3300	1900	6910	3130
	160	4070	102	2590	209	5300	184	4870	53	1380	78	1990	60/80	3500	2000	3200	1830	6990	3170
	147	3750	71	1800	196	4970	172	4350	- 22	570	47	1200	60/60	3500	2000	3300	1880	6970	3160
ı	159	4050	75	1900	208	5270	183	4650	26	670	50	1300	6" / 6"	3500	2000	3200	1830	6990	3170
	171	4350	79	2000	220	5570	195	4950	30	77	54	1400	6° / 6°	3450	1950	3100	1780	7080	3200
X	188	4790	85	2140	237	6010	212	5390	36	920	60	1540	6" / 6"	3300	1900	3000	1600	7130	3230
RIPLEX	201	5130	89	2260	250	6350	226	5730	40	1040	65	1660	6° / 6°	2900	1330	2250	1030	7170	3250
E.	217	5530	95	2400	266	6750	242	6130	46	1180	70	1800	6" / 6"	1850	930	1750		7280	3300
	237	6030	102	2590	288	7250	261	6630	53	1380	78	1990	60180	1150	580	1050		7370	3340
	256	6530	113	2850	306	7550	281	7130	64	1620	88	2250	6°/6°	750	350	600		7460	3380
	276	7040	121	3050	326	8060	301	7840	72	1830	96	2450	6"/6"	350	180	250		7570	3430



^{*} Contact CSM Group to obtain capacities.

^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

P20N – Single Drive

	1000	um Fork ight	Overall	Lowered	Ow	erall Exte	nded He	eight		Fre	elift		Tit	Rated Ca Fo		Rated 0	apacity shifter **	Total V	N'eight
Mast Type	84	FH)	(0	AL)	0000	Load krest	1000	Load krest	2000	Load krest		Load krest	F/B	@24 in Load Center	gg 500 mm Load Center	@24 in Load Center	gg 500 mm Load Center	Carr	tandard flage Forks
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb:	kg	lb	kg	lb	kg
	80	2040	59	1500	129	3270	104	2650	5.5	140	5.5	140	6° / 10°	4000	2000	3850	1950	7150	3240
- 0	102	2610	71	1790	151	3840	127	3220	5.5	140	5.5	140	6° / 10°	4000	2000	3850	1950	7260	3290
	119	3040	79	2000	168	4270	144	3850	5.5	140	5.5	140	6" / 10"	4000	2000	3850	1950	7320	3320
	131	3340	85	2150	180	4570	156	3950	5.5	140	5.5	140	6° / 10°	4000	2000	3850	1950	7370	3340
SIMPLEX	140	3580	80	2270	190	4810	165	4190	5.5	140	5.5	140	6° / 10°	4000	2000	3850	1950	7430	3370
<u>a</u>	148	3780	95	2410	198	5010	173	4390	5.5	140	5.5	140	6"/6"	4000	2000	3850	1950	7480	3390
\$	162	4140	102	2590	212	5370	187	4750	5.5	140	5.5	140	6° / 6"	4000	2000	3850	1950	7590	3440
	178	4540	111	2800	227	5770	203	5150	5.5	140	5.5	140	6" / 6"	3950	1950	3850	1900	7660	3470
- 1	198	5040	121	3050	247	6270	223	5650	5.5	140	5.5	140	6" / 6"	3850	1750	3150	1450	7790	3530
	218	5540	130	3300	287	6770	242	6150	5.5	140	5.5	140	6" / 6"	2950	1350	2050	950	7900	3580
	237	6040	140	3550	285	7270	262	6650	5.5	140	5.5	140	6" / 6"	2050	950	1300	600	7990	3620
- 8	112	2860	75	1910	161	4090	137	3480	26	680	50	1280	6° / 10°	4000	2000	3850	1950	7350	3330
\times	119	3040	79	2000	168	4270	144	3880	30	770	54	1370	6" / 10"	4000	2000	3850	1950	7370	3340
DUPLEX	131	3340	85	2150	180	4570	156	3960	38	920	80	1520	8" / 10"	4000	2000	3850	1950	7430	3370
9	140	3570	80	2270	189	4800	165	4190	40	1040	64	1640	6" / 10°	4000	2000	3850	1950	7500	3400
0	147	3740	95	2410	198	4970	172	4360	46	1180	70	1790	6"/6"	4000	2000	3850	1950	7540	3420
	159	4060	102	2590	209	5290	185	4680	53	1360	77	1970	6° / 6°	4000	2000	3850	1950	7660	3470
\neg	148	3770	72	1810	197	5000	173	4390	22	580	46	1180	60/60	4000	2000	3850	1950	7770	3520
- 1	160	4070	75	1910	209	5300	185	4690	26	680	50	1280	6" / 6"	4000	2000	3850	1950	7830	3550
(90)	170	4340	79	2000	220	5570	196	4960	30	770	54	1370	6"/6"	4000	1950	3850	1900	7880	3570
PLEX	188	4790	85	2150	237	6020	213	5410	36	920	80	1520	6"/6"	3950	1900	3700	1800	7940	3600
ā.	200	5100	90	2270	249	6330	226	5720	40	1040	54	1640	6"/6"	3850	1750	3050	1400	8010	3630
2	218	5540	96	2410	267	6770	243	6160	46	1180	70	1790	6" / 6"	2850	1300	2050	960	8180	3710
1	237	6030	102	2590	288	7260	262	8650	53	1380	77	1970	6"/6"	2050	950	1300	600	8290	3780
- 1	257	6540	113	2850	306	7770	282	7160	64	1620	87	2230	6"/6"	1400	650			8400	3810
	277	7040	121	3050	328	8270	302	7680	71	1820	95	2430	6" / 6"	(39)	*		13	8510	3880

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP20N - Solid Single Drive

東	1000	um Fork ight	Overall	Lowered	Ox	eral Exte	nded He	night		Fre	eift		Titt	Rated Ca Fo	CONTRACTOR OF STREET	Rated (w/ Side	Capacity shifter ***	- CANADA	// eight
MastTyp	(mn	FH)	(0	AL)		Load krest		Load krest	239	Load krest	1000000	Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	mm Load Center	Can	tandard riage * Forks
	ln.	mm	. In	mm	in.	min	in.	mm	in-	mm	in	mm	deg	lb	kg	16	Rg	b	kg
	80	2040	59	1500	129	3270	104	2650	5.5	140	5.5	140	6" / 10"	4000	2000	4000	1950	7370	3340
	102	2610	71	1790	151	3840	127	3220	5.5	140	5.5	140	6º / 10º	4000	2000	4000	1950	7460	3380
	119	3040	79	2000	168	4270	144	3650	5.5	140	5.5	140	8" / 10"	4000	2000	4000	1950	7520	3410
w	131	3340	85	2150	180	4570	158	3960	5.5	140	5.5	140	6" / 10"	4000	2000	4000	1950	7590	3440
SIMPLEX	140	3580	90	2270	190	4810	185	4190	5.5	140	5.5	140	6" / 10°	4000	2000	4000	1950	7630	3460
5	148	3780	95	2410	198	5010	173	4390	5.5	140	5.5	140	6" / 6"	4000	2000	4000	1950	7700	3490
<u>€</u>	162	4140	102	2590	212	5370	187	4750	5.5	140	5.5	140	6.16.	4000	2000	4000	1950	7790	3530
-	178	4540	111	2800	227	5770	203	5150	5.5	140	5.5	140	6.16	4000	2000	3850	1900	7880	3570
	198	5040	121	3050	247	6270	223	5650	5.5	140	5.5	140	6" / 6"	3900	1950	3700	1850	8010	3830
	218	5540	130	3300	267	6770	242	6150	5.5	140	5.5	140	61/6	3800	1800	2950	1350	8100	3070
	237	6040	140	3550	288	7270	262	8650	5.5	140	5.5	140	61 / 61	2750	1250	1950	900	8180	3710
	112	2860	75	1910	161	4090	137	3480	26	680	50	1290	6" / 10"	4000	2000	4000	1950	7570	3430
56	119	3040	79	2000	168	4270	144	3680	30	770	54	1370	8° / 10°	4000	2000	4000	1950	7590	3440
DUPLEX	131	3340	85	2150	180	4570	158	3980	36	920	60	1520	8" / 10"	4000	2000	4000	1950	7630	3460
15	140	3570	90	2270	189	4800	165	4190	40	1040	64	1640	61 / 101	4000	2000	4000	1950	7700	3490
0	147	3740	95	2410	196	4970	172	4360	46	1180	70	1790	6"/6"	4000	2000	4000	1950	7770	3520
	159	4080	102	2590	209	5290	185	4680	53	1380	77	1970	61/81	4000	2000	4000	1950	7850	3560
	148	3770	72	1810	197	5000	173	4390	22	580	48	1180	6"/6"	4000	2000	4000	1950	7990	3620
	180	4070	75	1910	209	5300	185	4690	26	680	50	1280	61/61	4000	2000	4000	1950	8030	3840
2	170	4340	79	2000	220	5570	195	4960	30	770	54	1370	6" / 6"	4000	2000	3850	1900	8070	3660
PLEX	188	4790	85	2150	237	6020	213	5410	36	920	60	1520	60/60	3950	1950	3700	1850	8160	3700
G.	200	5100	90	2270	249	6330	226	5720	40	1040	64	1640	6" / 6"	3850	1900	3800	1800	8230	3730
2	218	5540	95	2410	267	6770	243	6160	46	1180	70	1790	6.18.	3800	1800	3050	1400	8380	3800
1	237	6030	102	2590	266	7260	262	8650	53	1380	77	1970	61/8	2750	1250	1950	900	8490	3850
	257	6540	113	2850	306	7770	282	7160	64	1620	87	2230	6° / 6°	1950	900	1200	550	8630	3910
	277	7040	121	3050	326	8270	302	7860	71	1820	95	2430	6" / 6"	1300	600	650	300	8740	3960

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP20N - Dual Drive

8	Maximi He	um Fork ight	Overall	Lowered	Ow	erall Exte	nded He	eight		Fre	elift		Tilt	Rated Ca Fo	rks	Rated 0 w/ Side	2011110	200,000,000	Veight
Mast Ty	(M	FH)	(0	AL)		oad krest		Load krest		Load krest		Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	400000000000000000000000000000000000000	tandard nage * Forks
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	lb	kg	lb	kg
	80	2040	59	1500	129	3270	104	2650	5.5	140	5.5	140	6" / 10"	4000	2000	4000	1950	7370	3340
	102	2610	71	1790	151	3840	127	3220	5.5	140	5.5	140	8° / 10°	4000	2000	4000	1950	7460	3380
	119	3040	79	2000	168	4270	144	3650	5.5	140	5.5	140	6° / 10°	4000	2000	4000	1950	7520	3410
~	131	3340	85	2150	180	4570	158	3950	5.5	140	5.5	140	8" / 10"	4000	2000	4000	1950	7590	3440
EX	140	3580	90	2270	190	4810	165	4190	5.5	140	5.5	140	6° / 10°	4000	2000	4000	1950	7630	3460
SIMPL	148	3780	95	2410	198	5010	173	4390	5.5	140	5.5	140	80 / 80	4000	2000	4000	1950	7700	3490
5	162	4140	102	2590	212	5370	187	4750	5.5	140	5.5	140	6" / 6"	4000	2000	4000	1950	7790	3530
100	178	4540	111	2800	227	5770	203	5150	5.5	140	5.5	140	82/85	4000	2000	3850	1900	7880	3570
	198	5040	121	3050	247	6270	223	5650	5.5	140	5.5	140	6" / 6"	3800	1950	3700	1850	8010	3630
	218	5540	130	3300	287	6770	242	6150	5.5	140	5.5	140	Bº / Bº	3800	1800	2950	1350	8100	3670
	237	6040	140	3550	286	7270	262	6650	5.5	140	5.5	140	6° / 6°	2750	1250	1950	900	8180	3710
	112	2860	75	1910	161	4090	137	3480	26	680	50	1280	6" / 10"	4000	2000	4000	1950	7570	3430
×	119	3040	79	2000	168	4270	144	3660	30	770	54	1370	6° / 10°	4000	2000	4000	1950	7590	3440
DUPLEX	131	3340	85	2150	180	4570	156	3960	36	920	60	1520	6" / 10"	4000	2000	4000	1950	7630	3460
lä.	140	3570	90	2270	189	4800	165	4190	40	1040	64	1640	6" / 10"	4000	2000	4000	1950	7700	3490
-	147	3740	95	2410	198	4970	172	4360	48	1180	70	1790	80 / 80	4000	2000	4000	1950	7770	3520
	159	4060	102	2590	209	5290	185	4680	53	1360	77	1970	6° / 6°	4000	2000	4000	1950	7850	3560
	148	3770	72	1810	197	500D	173	4390	22	580	46	1180	B" / 6"	4D00	2000	4000	1950	7990	3620
	160	4070	75	1910	209	5300	185	4890	26	690	50	1280	8° / 6°	4000	2000	4000	1950	8030	3640
U	170	4340	79	2000	220	5570	196	4960	30	770	54	1370	6" / 6"	4000	2000	3850	1900	8070	3660
TRIPLEX	188	4790	85	2150	237	6020	213	5410	36	920	60	1520	8° / 6°	3950	1950	3700	1850	8160	3700
<u>a</u>	200	5100	90	2270	249	6330	226	5720	40	1040	64	1640	6"/6"	3850	1900	3600	1800	8230	3730
T.	218	5540	95	2410	287	6770	243	8160	46	1190	70	1790	82 / 80	3800	1800	3050	1400	8380	3800
	237	6030	102	2590	286	7260	262	6650	53	1360	77	1970	6° / 6°	2750	1250	1950	900	8490	3850
	257	6540	113	2850	308	7770	282	7.160	64	1620	87	2230	6° / 6°	1950	900	1200	550	8630	3910
	277	7040	121	3050	326	8270	302	7660	71	1820	95	2430	6"/6"	1300	600	650	300	8740	3960

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP20N – Solid Dual Drive

De .	200000000000000000000000000000000000000	um Fork ight	Overall	Lowered	Ove	erall Exte	nded He	eight		Fre	elift		Tilt	Rated Ca Fo	rks	Rated 0			Weight andard
Mast Ty	(MI	FH)	(0	AL)		_oad krest		Load krest	V MV	Load krest		Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	2000000	riage
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	lb	kg	lb	kg
	80	2040	59	1500	129	3270	104	2650	5.5	140	5.5	140	6° / 10°	4000	2000	4000	1950	7770	3520
	102	2610	71	1790	151	3840	127	3220	5.5	140	5.5	140	6° / 10°	4000	2000	4000	1950	7880	3570
	119	3040	79	2000	168	4270	144	3650	5.5	140	5.5	140	6° / 10°	4000	2000	4000	1950	7940	3600
~	131	3340	85	2150	180	4570	156	3950	5.5	140	5.5	140	6° / 10°	4000	2000	4000	1950	7990	3620
SIMPLEX	140	3580	90	2270	190	4810	165	4190	5.5	140	5.5	140	6° / 10°	4000	2000	4000	1950	8050	3650
/PI	148	3780	95	2410	198	5010	173	4390	5.5	140	5.5	140	6° / 6°	4000	2000	4000	1950	8100	3670
SIN	162	4140	102	2590	212	5370	187	4750	5.5	140	5.5	140	6° / 6°	4000	2000	4000	1950	8210	3720
-	178	4540	111	2800	227	5770	203	5150	5.5	140	5.5	140	6° / 6°	4000	2000	3850	1900	8270	3750
	198	5040	121	3050	247	6270	223	5650	5.5	140	5.5	140	6° / 6°	3900	1950	3700	1850	8400	3810
	218	5540	130	3300	267	6770	242	6150	5.5	140	5.5	140	6° / 6°	3800	1850	3500	1750	8510	3860
	237	6040	140	3550	286	7270	262	6650	5.5	140	5.5	140	6° / 6°	3700	1800	3400	1700	8600	3900
	112	2860	75	1910	161	4090	137	3480	26	680	50	1280	6° / 10°	4000	2000	4000	1950	7960	3610
×	119	3040	79	2000	168	4270	144	3660	30	770	54	1370	6° / 10°	4000	2000	4000	1950	7990	3620
DUPLEX	131	3340	85	2150	180	4570	156	3960	36	920	60	1520	6° / 10°	4000	2000	4000	1950	8050	3650
B	140	3570	90	2270	189	4800	165	4190	40	1040	64	1640	6° / 10°	4000	2000	4000	1950	8120	3680
0	147	3740	95	2410	196	4970	172	4360	46	1180	70	1790	6° / 6°	4000	2000	4000	1950	8160	3700
	159	4060	102	2590	209	5290	185	4680	53	1360	77	1970	6° / 6°	4000	2000	4000	1950	8270	3750
	148	3770	72	1810	197	5000	173	4390	22	580	46	1180	6° / 6°	4000	2000	4000	1950	8380	3800
	160	4070	75	1910	209	5300	185	4690	26	680	50	1280	6° / 6°	4000	2000	4000	1950	8450	3830
	170	4340	79	2000	220	5570	196	4960	30	770	54	1370	6° / 6°	4000	2000	3850	1900	8490	3850
ω.	188	4790	85	2150	237	6020	213	5410	36	920	60	1520	6° / 6°	3950	1950	3700	1850	8560	3880
TRIPLEX	200	5100	90	2270	249	6330	226	5720	40	1040	64	1640	6° / 6°	3850	1900	3600	1800	8630	3910
IR	218	5540	95	2410	267	6770	243	6160	46	1180	70	1790	6° / 6°	3800	1800	3500	1700	8800	3990
	237	6030	102	2590	286	7260	262	6650	53	1360	77	1970	6° / 6°	3500	1750	3300	1650	8910	4040
	257	6540	113	2850	306	7770	282	7160	64	1620	87	2230	6° / 6°	3300	1650	3150	1550	9020	4090
	277	7040	121	3050	326	8270	302	7660	71	1820	95	2430	6° / 6°	2750	1250	2500	1150	9130	4140



^{*} Contact CSM Group to obtain capacities.

^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP25N – Single Drive

je.		um Fork ight	Overall	Lowered	Ove	erall Exte	nded He	ight		Fire	elift		Trit	Rated Ca Fo	rks	Rated C w/ Sides	shifter **	100000	Veight
Mast Type	(M	FH)	(0	AL)		.oad krest	100.00	Load krest	200	Load krest	00.00	Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	with St Can and 42	lage
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	1b	kg	lio .	kg
	80	2040	59	1500	129	3270	104	2650	5.5	140	5.5	140	6" / 10"	5000	2500	4850	2400	7770	3520
Ш	102	2610	71	1790	151	3840	127	3220	5.5	140	5.5	140	6° / 10°	5000	2500	4850	2400	7850	3560
П	119	3040	79	2000	168	4270	144	3650	5.5	140	5.5	140	6" / 10"	5000	2500	4850	2400	7920	3590
3	131	3340	85	2150	180	4570	158	3950	5.5	140	5.5	140	6° / 10°	5000	2500	4850	2400	7990	3620
SIMPLEX	140	3580	90	2270	190	4810	165	4190	5.5	140	5.5	140	6° / 10°	5000	2500	4850	2400	8030	3640
<u>a</u>	148	3780	95	2410	198	5010	173	4390	5.5	140	5.5	140	6-16-	5000	2500	4850	2400	8100	3670
1	152	4140	102	259D	212	5370	187	4750	5.5	140	5.5	140	6' / 6'	5000	2500	4703	2350	8180	3710
0.2	178	4540	111	2800	227	5770	203	5150	5.5	140	5.5	140	6° / 6°	4950	2250	4600	2200	8270	3750
П	198	5040	121	3050	247	6270	223	5650	5.5	140	5.5	140	6' / 6'	3850	1750	3150	1450	8400	3810
П	218	5540	130	3300	267	6770	242	6150	5.5	140	5.5	140	80/80	2950	1350	2050	950	8490	3850
	237	6040	140	3550	286	7270	262	6650	5.5	140	5.5	140	6' / 6'	2050	950	1300	600	8580	3890
	112	2860	75	1910	161	4090	137	3480	26	680	50	1280	8º / 10°	5000	2500	4850	2400	7980	3810
×	119	3040	79	2000	168	4270	144	3860	30	770	54	1370	6° / 10°	5000	2500	4850	2400	7990	3620
	131	3340	85	2150	180	4570	156	3960	35	920	50	1520	617 101	5000	2500	4850	2400	8030	3840
DUPLE	140	3570	90	2270	189	4800	165	4190	40	1040	54	1640	617 101	5000	2500	4850	2400	8100	3670
0	147	3740	95	2410	198	4970	172	4360	48	1180	70	1790	8° / 8°	5000	2500	4850	2400	8180	3700
-	159	4060	102	2590	209	5290	185	4680	53	1360	77	1970	6" / 6"	5000	2500	4700	2350	8250	3740
П	148	3770	72	1810	197	5000	173	4390	22	580	48	1180	6.16.	5000	2500	4850	2400	8380	3800
П	160	4070	75	1910	209	5300	185	4690	26	680	50	1280	6° / 6°	5000	2500	4700	2350	8430	3820
	170	4340	79	2000	220	5570	196	4960	30	770	54	1370	6" / 6"	5000	2450	4600	2300	8470	3840
X	188	4790	85	2150	237	6020	213	5410	36	920	60	1520	6° / 6°	4700	2150	3950	1800	8580	3880
ď.	200	5100	90	2270	249	6330	226	5720	40	1040	54	1640	6") 6"	3850	1750	3050	1400	8630	3910
TRIPLEX	218	5540	95	2410	267	6770	243	6160	48	1180	70	1790	8° / 8°	2850	1300	2050	950	8780	3980
120	237	6030	102	2590	285	7260	262	6650	53	1360	77	1970	6" / 6"	2050	950	1300	600	8890	4030
	257	6540	113	2850	309	7770	282	7160	64	1620	87	2230	6° / 6°	1400	650		•	9020	4090
	277	7040	121	3050	328	8270	302	7860	71	1820	95	2430	80/80	TANADAR	1000			9130	4140



^{*} Contact CSM Group to obtain capacities.

^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP25N - Solid Single Drive

eo.	Maximi He	um Fork ight	Overail	Lowered	Ow	erall Exte	nded He	eight		Fre	elift		Titt	Rated Ca Fo	rks	Rated 0 w/ Side:	200,0000	771000	Neight
Mast Ty	(M	FH)	(0	AL)		Load krest	100000	Load krest	100000	Load krest	1000	Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	Can	tandard riage * Forks
	in.	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	. Ib	kg	Ib	kg
	80	2040	59	1500	129	3270	104	2650	5.5	140	5.5	140	6" / 10"	5000	2500	5000	2400	7960	3610
	102	2810	71	1790	151	3840	127	3220	5.5	140	5.5	140	6° / 10°	5000	2500	5000	2400	8070	3660
	119	3040	79	2000	188	4270	144	3850	5.5	140	5.5	140	6° / 10°	5000	2500	5000	2400	8140	3690
10	131	3340	85	2150	180	4570	156	3950	5.5	140	5.5	140	6° / 10°	5000	2500	5000	2400	8180	3710
EX	140	3580	90	2270	190	4810	165	4190	5.5	140	5.5	140	8" / 10"	5000	2500	5000	2400	8250	3740
SIMPL	148	3780	95	2410	198	5010	173	4390	5.5	140	5.5	140	6° / 6°	5000	2500	5000	2400	8290	3760
100	162	4140	102	2590	212	5370	187	4750	5.5	140	5.5	140	6" / 6"	5000	2500	4700	2350	8400	3810
100	178	4540	111	2800	227	5770	203	5150	5.5	140	5.5	140	6° / 6°	5000	2500	4600	2300	8470	3840
	198	5040	121	3050	247	6270	223	5650	5.5	140	5.5	140	6" / 6"	4850	2400	4400	2050	8830	3910
	218	5540	130	3300	267	6770	242	6150	5.5	140	5.5	140	6" / 6"	3950	1800	2950	1350	8710	3950
	237	6040	140	3550	288	7270	262	6850	5.5	140	5.5	140	6° / 6°	2750	1250	1950	900	8800	3990
	112	2860	75	1910	161	4090	137	3480	28	680	50	1280	61 / 101	5000	2500	5000	2400	8160	3700
×	119	3040	79	2000	168	4270	144	3660	30	770	54	1370	6" / 10"	5000	2500	5000	2400	8210	3720
DUPLEX	131	3340	85	2150	180	4570	156	3960	38	920	60	1520	6° / 10°	5000	2500	5000	2400	8250	3740
13	140	3570	90	2270	189	4800	165	4190	40	1040	64	1640	6" / 10"	5000	2500	5000	2400	8320	3770
0	147	3740	95	2410	198	4970	172	4360	48	1190	70	1790	6° / 6°	5000	2500	5000	2400	8360	3790
	159	4060	102	2590	209	5290	185	4680	53	1360	77	1970	6" / 6"	5000	2500	4800	2350	8470	3840
1	148	3770	72	1810	197	5000	173	4390	22	580	46	1180	81/81	5000	2500	5000	2350	8580	3890
	160	4070	75	1910	209	5300	185	4690	26	680	50	1280	6° / 6°	5000	2500	4700	2350	8650	3920
100	170	4340	79	2000	220	5570	196	4960	30	770	54	1370	6" / 6"	5000	2500	4600	2300	8890	3940
X	188	4790	85	2150	237	6020	213	5410	36	920	60	1520	6° / 6°	4950	2400	4500	2200	8780	3980
TRIPL	200	5100	90	2270	249	6330	226	5720	40	1040	64	1640	6" / 6"	4850	2350	4400	1950	8820	4000
臣	218	5540	95	2410	267	6770	243	6160	46	1180	70	1790	6' / 6'	3950	1800	3050	1400	9000	4080
e e	237	8030	102	2590	288	7260	262	8850	53	1380	77	1970	8" / 8"	2750	1250	1950	900	9110	4130
	257	6540	113	2850	306	7770	282	7160	64	1620	87	2230	61/61	1950	900	1200	550	9240	4190
	277	7040	121	3050	326	8270	302	7880	71	1820	95	2430	B" / B"	1300	800	850	300	9330	4230



^{*} Contact CSM Group to obtain capacities.

^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP25N – Dual Drive

9	100000000000000000000000000000000000000	um Fork ight	Overall	Lowered	Ov	erall Exte	nded He	eight		Fre	elift		Titt	Rated Ca Fo	rks	Rated 0 w/ Side	apacity shifter **		Weight
Mast Typ	(M	FH)	(0	AL)		Load krest	10000	Load krest	100000	Load krest	10000	Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	Can	tandard riage * Forks
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	lb	kg	lb	kg
	- 80	2040	59	1500	129	3270	104	2650	5.5	140	5.5	140	6° / 10°	5000	2500	4850	2400	8050	3650
	102	2610	71	1790	151	3840	127	3220	5.5	140	5.5	140	6° / 10°	5000	2500	4850	2400	8140	3690
	119	3040	79	2000	188	4270	144	3650	5.5	140	5.5	140	6" / 10"	5000	2500	4850	2400	8210	3720
2	131	3340	85	2150	190	4570	156	3950	5.5	140	5.5	140	6° / 10°	5000	2500	4850	2400	8270	3750
SIMPLEX	140	3580	90	2270	190	4810	165	4190	5.5	140	5.5	140	6" / 10"	5000	2500	4850	2400	8320	3770
분	148	3780	95	2410	198	5010	173	4390	5.5	140	5,5	140	81/81	5000	2500	4850	2400	8380	3800
5	162	4140	102	2590	212	5370	187	4750	5.5	140	5.5	140	64/6	5000	2500	4700	2350	8470	3840
	178	4540	111	2800	227	5770	203	5150	5.5	140	5.5	140	8" / 6"	4950	2450	4600	2300	8580	3880
	198	5040	121	3050	247	6270	223	5650	5.5	140	5.5	140	6° / 6°	4700	2350	4500	2200	8690	3940
	218	5540	130	3300	267	6770	242	6150	5.5	140	5.5	140	60/60	4600	2250	4250	2100	8780	3980
	237	6040	140	3550	286	7270	262	8650	5.5	140	5.5	140	6" / 6"	4400	2150	4150	2050	8870	4020
	112	2860	75	1910	161	4090	137	3480	26	680	50	1280	6" / 10"	5000	2500	4850	2400	8250	3740
×	119	3040	79	2000	168	4270	144	3660	30	770	54	1370	6" / 10"	5000	2500	4850	2400	8270	3750
DUPLEX	131	3340	85	2150	180	4570	158	3980	38	920	60	1520	6° / 10°	5000	2500	4850	2400	8320	3770
13	140	3570	90	2270	189	4800	165	4190	40	1040	64	1640	6° / 10°	5000	2500	4850	2400	8380	3800
0	147	3740	95	2410	196	4970	172	4360	46	1180	70	1790	8" / 6"	5000	2500	4850	2400	8450	3830
	159	4060	102	2590	209	5290	185	4680	53	1360	77	1970	6° / 6°	5000	2500	4700	2350	8540	3870
	148	3770	72	1810	197	5000	173	4390	22	580	46	1180	5"/6"	5000	2500	4850	2400	8670	3930
	160	4070	75	1910	209	5300	185	4890	28	880	50	1280	8º / 8º	5000	2500	4700	2350	8710	3950
1000	170	4340	79	2000	220	5570	196	4960	30	770	54	1370	6° / 6°	5000	2450	4600	2300	8760	3974
X	188	4790	85	2150	237	6020	213	5410	38	920	60	1520	8" / 6"	4700	2350	4500	2200	8850	4010
TRIPL	200	5100	90	2270	249	6330	226	5720	40	1040	64	1640	6° / 6°	4600	2300	4400	2150	8910	4040
田	218	5540	95	2410	267	6770	243	6160	46	1180	70	1790	6° / 6°	4400	2200	4150	2100	9070	4110
	237	6030	102	2590	286	7260	262	8650	53	1360	77	1970	6' / 6'	4250	2100	4050	2000	9180	4160
	257	6540	113	2850	308	7770	282	7160	64	1620	87	2230	6°/6°	3850	1750	3850	1750	9310	4220
	277	7040	121	3050	326	8270	302	7660	71	1820	95	2430	6' / 6'	2750	1250	2500	1150	9420	4270



^{*} Contact CSM Group to obtain capacities.

^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP25N – Solid Dual Drive

2	THE STATE OF	um Fork ight	Overall	Lowered	Ow	erall Exte	nded He	eight		Fre	elift		Tilt	Rated Ca Fo	rks	Rated C w/ Sides		100000	Weight
Mast Tys	(M	FH)	(0	AL)		Load krest		Load krest		Load krest		Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	mm Load Center	Can	tandard riage * Forks
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	lb	kg	lb	kg
	80	2040	59	1500	129	3270	104	2650	5.5	140	5.5	140	6° / 10°	5000	2500	5000	2400	8380	3800
	102	2610	71	1790	151	3840	127	3220	5.5	140	5.5	140	6" / 10"	5000	2500	5000	2400	8470	3840
Ш	119	3040	79	2000	168	4270	144	3650	5.5	140	5.5	140	6" / 10"	5000	2500	5000	2400	8540	3870
-	131	3340	85	2150	180	4570	158	3950	5.5	140	5.5	140	8° / 10°	5000	2500	5000	2400	8800	3900
i iii	140	3580	90	2270	190	4810	165	4190	5.5	140	5.5	140	6° / 10°	5000	2500	5000	2400	8650	3920
를	148	3780	95	2410	198	5010	173	4390	5.5	140	5.5	140	8" / 8"	5000	2500	5000	2400	8710	3950
SIMPLEX	162	4140	102	2590	212	5370	187	4750	5.5	140	5.5	140	60/60	5000	2500	4800	2350	8800	3990
	178	4540	111	2800	227	5770	203	5150	5.5	140	5.5	140	81/61	5000	2500	4600	2300	8890	4030
Ш	198	5040	121	3050	247	6270	223	5650	5.5	140	5.5	140	6° / 6°	4850	2400	4500	2200	9020	4090
Ш	218	5540	130	3300	267	6770	242	6150	5.5	140	5.5	140	60/60	4800	2250	4250	2100	9110	4130
	237	6040	140	3550	286	7270	262	6650	5.5	140	5.5	140	6" / 6"	4400	2150	4150	2050	9200	4170
	112	2860	75	1910	161	4090	137	3480	26	680	50	1280	6" / 10"	5000	2500	5000	2400	8580	3890
×	119	3040	79	2000	168	4270	144	3660	30	770	54	1370	6° / 10°	5000	2500	5000	2400	8600	3900
쁘	131	3340	85	2150	180	4570	156	3960	36	920	60	1520	8" / 10"	5000	2500	5000	2400	8850	3920
DUPLEX	140	3570	90	2270	189	4800	165	4190	40	1040	64	1640	6° / 10°	5000	2500	5000	2400	8710	3950
0	147	3740	95	2410	196	4970	172	4360	46	1180	70	1790	8" / 6"	5000	2500	5000	2400	8780	3980
Ш	159	4060	102	2590	209	5290	185	4680	53	1380	77	1970	6° / 6°	5000	2500	4800	2350	8870	4020
	148	3770	72	1810	197	5000	173	4390	22	580	46	1180	60/60	5000	2500	5000	2350	9000	4080
Ш	160	4070	75	1910	209	5300	185	4690	28	680	50	1280	8" / 8"	5000	2500	4700	2350	9040	4100
	170	4340	79	2000	220	5570	196	4960	30	770	54	1370	60/60	5000	2500	4600	2300	9090	4120
TRIPLEX	188	4790	85	2150	237	6020	213	5410	38	920	60	1520	6' / 6'	4950	2400	4500	2200	9180	4180
교	200	5100	90	2270	249	6330	226	5720	40	1040	64	1640	60 / 60	4850	2350	4400	2150	9240	4190
TA.	218	5540	95	2410	267	6770	243	8160	48	1190	70	1790	6° / 6°	4400	2200	4150	2100	9400	4280
1	237	6030	102	2590	286	7260	262	6650	53	1360	77	1970	6" / 6"	4250	2100	4050	2000	9510	4310
	257	8540	113	2850	308	7770	282	7160	84	1620	87	2230	80 / 80	3850	1750	3850	1750	9840	4370
	277	7040	121	3050	326	8270	302	7660	71	1820	95	2430	60/60	2750	1250	2500	1150	9750	4420



^{*} Contact CSM Group to obtain capacities.

^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP28N – Single Drive

東		um Fork ight	Overall	Lowered	Ove	eralli Exte	nded He	eight		Fre	elift		Tilt	Rated Ca Fo	rks	Rated 0 w/ Sider	Capacity shifter **	Total \	CONTRACTOR OF THE PARTY OF THE
Mast Type	(M	FH)	(0	AL)	3000	Load krest	10000	Load krest	100	Load :krest		Load krest	F/B	@24 in Load Center	mm Load Center	@24 in Load Center	@ 500 mm Load Center	with St Can and 42	iage
035	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	ib	kg	lb	kg	16	kg
8	80	2040	61	1530	129	3270	106	2690	-6	150	- 6	150	6° / 10°	5500	2750	5400	2850	8850	4010
	102	2600	72	1810	151	3830	128	3250	6	150	6	150	6" / 10"	5500	2750	5400	2650	8860	4060
	121	3070	81	2050	170	4300	147	3720	6	150	6	150	6° / 10°	5500	2750	5400	2650	9040	4100
J.	130	3310	86	2170	179	4540	158	3960	6	150	6	150	6° / 10°	5500	2750	5400	2850	9090	4120
SIMPLEX	139	3550	90	2290	189	4780	166	4200	6	150	6	150	6° / 10°	5500	2750	5400	2650	9180	4160
AP.	147	3740	96	2430	198	4970	173	439D	6	150	- 6	150	6'/6"	5500	2750	5400	2850	9220	4180
SIN	159	4040	103	2610	208	5270	185	4690	6	150	6	150	6° / 6°	5500	2750	5250	2800	9350	4240
	178	4540	113	2870	227	5770	205	5190	6	150	6	150	61/6"	5400	2750	5050	2500	944D	4280
	198	5040	123	3120	247	6270	224	5890	6	150	6	150	6° / 6°	5250	2650	4150	1900	9840	4370
	218	5540	133	3370	267	6770	244	8190	6	150	6	150	6° / 6°	5150	2550	2800	1200	9730	4410
-	237	6040	144	3640	287	7270	264	6690	6	150	6	150	6" / 6"	4500	2050	1500	700	9840	4460
	110	2810	76	1930	159	3830	137	3480	27	700	49	1260	6° / 10°	5500	2750	5400	2650	9070	4110
×	119	3040	81	2050	168	4060	146	3710	32	820	54	1380	6° / 10°	5500	2750	5400	2650	9110	4130
DUPLEX	129	3290	86	2170	178	4310	156	3960	37	940	59	1500	6" / 10"	5500	2750	5400	2650	9150	4150
5	139	3530	90	2290	188	4550	166	4200	41	1060	64	1620	6° / 10°	5500	2750	5400	2650	9240	4190
0	147	3740	96	2430	196	4760	174	4410	47	1200	69	1770	6" / 6"	5500	2750	5400	2650	9310	4220
	159	4050	103	2810	208	5070	188	4720	54	1380	76	1950	6° / 6°	5500	2750	5250	2600	9420	4270
	147	3730	72	1830	196	4750	173	4400	23	600	45	1160	60/60	5500	2750	5400	2650	9510	4310
	158	4030	76	1930	207	5050	185	470D	27	700	49	1280	6"/6"	5500	2750	5250	2800	9550	4330
100	171	4380	81	2050	220	5380	198	5030	32	820	54	1380	6° / 6°	5500	2750	5050	2500	9840	4370
TRIPLEX	186	4740	86	2170	235	5760	213	5410	37	940	59	1500	6"/6"	5400	2700	4950	2450	9710	4400
4	200	5100	90	2290	250	6120	227	5770	41	1060	64	1620	6° / 6°	5250	2600	4150	1900	9770	4430
E	216	5490	98	2430	265	6510	243	8160	47	1200	69	1770	61/60	5050	2500	2950	1350	9950	4510
	236	6010	103	2610	285	7030	263	6680	54	1380	76	1950	60/60	4500	2050	1750	800	10080	4570
	256	6510	113	2870	305	7530	283	7180	64	1640	87	2210	81/61	3300	1500		*	10210	4630
	277	7040	121	3070	326	8060	304	7710	72	1840	94	2410	6° / 6°					10320	4680

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP28N – Solid Single Drive

8	100000000000000000000000000000000000000	um Fork ight	Overail	Lowered	Ow	erall Exte	nded He	sight		Fre	elift		Tift	Rated Ca Fo	rks	Rated (w/ Side		1,000,000	Veight
Mast Typ	(M	FH)	(0	AL)		Load krest	377	Load krest		Load krest	- 300	Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	with St Can and 42	iage
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	lb	kg	lb	kg
	80	2040	61	1530	129	3270	106	2890	6	150	- 6	145	6° / 10°	5500	2750	5500	2850	9090	4120
	102	2600	72	1810	151	3830	128	3250	6	150	6	145	6° / 10°	5500	2750	5600	2650	9200	4170
	121	3070	81	2050	170	4300	147	3720	6	150	6	145	6° / 10°	5500	2750	5500	2650	9290	4210
×	130	3310	86	2170	179	4540	158	3960	6	150	8	145	8° / 10°	5500	2750	5500	2850	9330	4230
SIMPLEX	139	3550	90	2290	189	4780	166	4200	6	150	6	145	6° / 10°	5500	2750	5500	2650	9400	4260
ē	147	3740	98	2430	196	4970	173	4390	6	150	6	145	61/61	5500	2750	5500	2650	9460	4290
Ē	159	4040	103	2610	208	5270	185	4690	- 6	150	6	145	6° / 6°	5500	2750	5300	2650	9570	4340
	178	4540	113	2870	227	5770	205	5190	6	150	6	145	5" / 6"	5500	2750	5150	2550	9680	4390
	198	5040	123	3120	247	6270	224	5890	6	150	6	145	8° / 6°	5400	2700	4950	2450	9980	4470
ш	218	5540	133	3370	287	6770	244	8190	6	150	В	145	80 / 80	5300	3600	4600	2100	9970	4520
	237	6040	144	3640	287	7270	264	6690	6	150	6	145	60/60	5150	2500	2600	1200	10060	4560
	110	2810	76	1930	159	3830	137	3480	27	700	49	1260	6° / 10°	5500	2750	5500	2650	9290	4210
×	119	3040	81	2050	168	4060	146	3710	32	820	54	1380	6° / 10°	5500	2750	5500	2650	9350	4240
DUPLEX	129	3290	86	2170	178	4310	156	3960	37	940	59	1500	6" / 10"	5500	2750	5500	2650	9400	4260
9	139	3530	90	2290	188	4550	166	4200	41	1080	64	1620	6° / 10°	5500	2750	5500	2850	9480	4300
0	147	3740	96	2430	196	4760	174	4410	47	1200	69	1770	6" / 10"	5500	2750	5500	2650	9530	4320
	159	4050	103	2610	208	5070	186	4720	54	1380	76	1950	60/60	5500	2750	5300	2850	9880	4380
	147	3730	72	1830	196	4750	173	4400	23	600	45	1160	6º / 6º	5500	2750	5500	2650	9730	4410
ш	158	4030	76	1930	207	5050	185	4700	27	700	49	1260	6' / 6'	5500	2750	5300	2650	9790	4440
100	171	4360	81	2050	220	5380	198	5030	32	820	54	1380	6º / 6°	5500	2750	5150	2550	9880	4470
Ω.	186	4740	86	2170	235	5760	213	5410	37	940	59	1500	6" / 6"	5500	2750	5050	2500	9930	4500
TRIPLEX	200	5100	90	2290	250	6120	227	5770	41	1080	64	1620	8º / 6°	5400	2650	4950	2400	9990	4530
K	218	5490	98	2430	285	6510	243	8160	47	1200	69	1770	81/81	5250	2600	4600	2350	10190	4620
	236	6010	103	2610	285	7030	263	6680	54	1380	76	1950	6º / 6º	5050	2500	2850	1300	10300	4670
	258	8510	113	2870	305	753D	283	7180	84	1840	87	2210	8º / 8°	4950	2350	1650	750	10430	4730
	277	7040	121	3070	326	8060	304	7710	72	1840	94	2410	61/61	3400	1550	750	350	10570	4790



^{*} Contact CSM Group to obtain capacities.

^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP28N – Dual Drive

2)	100	um Fork ight	Overall	Lowered	Ow	erall Exte	nded He	eight		Fre	elift		Tilt	Rated Ca For	SUPPLIED OF	Rated 0 w/ Sides	Capacity shifter **	Total V	200 E 200 E
Mast Typ	(M	FH)	(0	AL)	11000	Load krest		Load krest		Load krest		Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	with St Carr and 42	lage
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	lb	kg	lb	kg
	80	2040	61	1530	129	3270	106	2690	6	150	Б	150	6" / 10"	5500	2750	5400	2650	9070	4110
	102	2800	72	1810	151	3830	128	3250	6	150	6	150	6° / 10°	5500	2750	5400	2650	9180	4160
	121	3070	B1	2050	170	4300	147	3720	6	150	8	150	6° / 10°	5500	2750	5400	2850	9280	4200
×	130	3310	86	2170	179	4540	156	3960	6	150	6	150	6° / 10°	5500	2750	5400	2650	9310	4220
SIMPLEX	139	3550	90	2290	189	478D	166	4200	6	150	В	150	8° / 10°	5500	2750	5400	2650	9400	4280
9	147	3740	96	2430	196	4970	173	4390	6	150	6	150	6" / 6"	5500	2750	5400	2650	9440	4280
00	159	4040	103	2610	208	5270	185	4690	- 6	150	В	150	8"/8"	5500	2750	5250	2600	9570	4340
	178	4540	113	2870	227	5770	205	5190	6	150	6	150	6° / 6°	5400	2750	5050	2500	9660	4380
	198	5040	123	3120	247	6270	224	5690	6	150	В	150	6' / 6'	5250	2650	4950	2400	9860	4470
	218	5540	133	3370	267	6770	244	6190	6	150	6	150	6, 16,	5150	2550	4700	2300	9950	4510
	237	8040	144	3640	267	7270	264	8890	- 6	150	8	150	8° / 8°	4850	2400	4800	2250	10080	4580
	110	2810	76	1930	159	3830	137	3480	27	700	49	1280	6° / 10°	5500	2750	5400	2850	9290	4210
×	119	3040	B1	2050	188	4060	146	3710	32	820	54	1380	6" / 10"	5500	2750	5400	2650	9330	4230
DUPLEX	129	3290	86	2170	178	4310	156	3960	37	940	59	1500	6° / 10°	5500	2750	5400	2650	9370	4250
5	139	3530	90	2290	188	455D	166	4200	41	1080	64	1620	6" / 10"	5500	2750	5400	2650	9460	4290
-	147	3740	98	2430	198	4760	174	4410	47	1200	69	1770	6° / 6°	5500	2750	5400	2850	9530	4320
	159	4050	103	2610	208	5070	186	4720	54	1380	76	1950	64/65	5500	2750	5250	2600	9640	4370
125.5	147	3730	72	1830	198	4750	173	4400	23	600	45	1160	8" / 6"	5500	2750	5400	2850	9730	4410
	158	4030	76	1930	207	5050	185	4700	27	700	49	1260	6º / 6º	5500	2750	5250	2600	9770	4430
×	171	4360	81	2050	220	5380	198	5030	32	820	54	138D	8" / 6"	5500	2750	5150	2500	9860	4470
m)	186	4740	88	2170	235	5760	213	5410	37	940	59	1500	6° / 6°	5400	2700	4950	2450	9930	4500
TRIPLEX	200	5100	90	2290	250	6120	227	5770	41	1060	64	1620	6' / 6'	5250	2600	4850	2400	9990	4530
臣	216	5490	96	2430	265	6510	243	6160	47	1200	69	1770	6, / 6,	5050	2500	4700	2300	10170	4610
	238	8010	103	2610	285	7030	263	8880	54	1390	76	1950	80 / 61	4850	2400	4500	2200	10300	4870
	256	6510	113	2870	305	7530	283	7180	64	1640	87	2210	6°/6°	3850	1750	3850	1750	10430	4730
	277	7040	121	3070	326	8060	304	7710	72	1840	94	2410	6' / 6'		*		2	10540	4780



^{*} Contact CSM Group to obtain capacities.

^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP28N – Solid Dual Drive

80		um Fork ight	Overall	Lowered	Ow	erall Exte	nded He	ight		Fre	elift		Titt	Rated Ca Fo	rks	Rated 0 w/ Sides	1000000	Total V	-
Mast Ty	(M	FH)	(0	AL)	100	Load krest	1000	Load krest		Load krest	100	Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	with St Carr and 42	iage
	in	mm	in	mm	in	9303	in	mm	in	mm	in.	mm	deg	lb	kg	lb	kg	lb	kg
	80	2040	81	1530	129	3270	106	2890	- 8	150	6	150	6° / 10°	5500	2750	5500	2650	9440	4280
ш	102	2600	72	1810	151	3830	128	3250	6	150	6	150	6" / 10"	5500	2750	5500	2650	9550	4330
1	121	3070	81	2050	170	4300	147	3720	6	150	6	150	6° / 10°	5500	2750	5500	2650	9640	4370
0	130	3310	86	2170	179	4540	158	3980	6	150	8	150	8° / 10°	5500	2750	5500	2650	9880	4390
SIMPLEX	139	3550	90	2290	189	4780	166	4200	6	150	6	150	6° / 10°	5500	2750	5500	2650	9770	4430
Ē.	147	3740	96	2430	196	4970	173	4390	- 6	150	8	150	8" / 8"	5500	2750	5500	2650	9820	4450
8	159	4040	103	2610	208	5270	185	4690	6	150	6	150	61/61	5500	2750	5300	2650	9950	4510
100	178	4540	113	2870	227	5770	205	5190	6	150	6	150	8' / 6'	5500	2750	5150	2550	10040	4550
	198	5040	123	3120	247	6270	224	5890	6	150	6	150	6° / 6°	5400	2700	4950	2450	10230	4640
1	216	5540	133	3370	287	6770	244	8190	6	150	8	150	80 / 80	5300	2600	4700	2300	10320	4660
	237	6040	144	3640	287	7270	264	6690	- 6	150	6	150	6° / 6°	5150	2500	4600	2250	10430	4730
	110	2810	76	1930	159	3830	137	3480	27	700	49	1260	6° / 10°	5500	2750	5500	2650	9660	4380
×	119	3040	81	2050	168	4060	146	3710	32	820	54	1380	6° / 10°	5500	2750	5500	2650	9710	4400
DUPLEX	129	3290	86	2170	178	4310	156	3960	37	940	59	1500	6" / 10"	5500	2750	5500	2650	9750	4420
5	139	3530	90	2290	188	4550	166	4200	41	1080	64	1620	6° / 10°	5500	2750	5500	2850	9840	4460
0	147	3740	96	2430	196	4760	174	4410	47	1200	69	1770	6" / 6"	5500	2750	5500	2650	9900	4490
	159	4050	103	2610	208	5070	186	4720	54	1380	76	1950	81/60	5500	2750	5300	2650	10010	4540
	147	3730	72	1830	196	4750	173	4400	23	600	45	1160	6° / 6°	5500	2750	5500	2650	10100	4580
1	158	4030	76	1930	207	5050	185	4700	27	700	49	126D	6" / 6"	5500	2750	5300	2650	10150	4600
	171	4360	81	2050	220	5380	198	5030	32	820	54	1380	6° / 6°	5500	2750	5150	2550	10230	4640
0	188	4740	86	2170	235	5760	213	5410	37	940	59	1500	6" / 6"	5500	2750	5050	2500	10300	4670
TRIPLEX	200	5100	90	2290	250	6120	227	5770	41	1060	64	1620	6' / 6'	5400	2650	4950	2400	10370	4700
民	218	5490	98	2430	285	6510	243	8160	47	1200	69	1770	8" / 6"	5250	2600	4700	2350	10540	4780
	236	6010	103	2610	285	7030	263	6680	54	1380	76	1950	6° / 6°	5050	2500	4500	2200	10680	4840
	258	8510	113	2870	305	7530	283	7180	84	1840	87	2210	8" / 6"	4950	2350	3850	1750	10810	4900
	277	7040	121	3070	326	8060	304	7710	72	1840	94	2410	6° / 6°	3400	1550	2750	1150	10920	4950

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP30N – Single Drive

e e		um Fork ight	Overall	Lowered	Ow	erall Exte	nded He	sight		Fre	elifi		Tit	Rated Ca Fo	rks	Rated 0 w/ Side	300000	Total V	
Mast Tyr	(M	FH)	(0	AL)	100000	Load krest		Load krest		Load krest		Loed krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 ntm Load Center	with St Carr and 42	iage
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	lb.	kg	lb	kg
	80	2040	61	1530	129	3270	106	2690	- 6	150	6	145	6° / 10°	6000	3000	5900	2900	9150	4150
	102	2600	72	1810	151	3830	128	3250	6	150	6	145	61/101	6000	3000	5900	2900	9260	4200
	121	3070	81	2050	170	4300	147	3720	6	150	6	145	61/101	6000	3000	5900	2900	9350	4240
	130	3310	86	2170	179	4540	156	3980	8	150	6	145	8° / 10°	6300	3000	5900	2900	9400	4260
SIMPLEX	139	3550	90	2290	189	4780	166	4200	6	150	6	145	6° / 10°	6000	3000	5900	2900	9460	4290
4p	147	3740	96	2430	198	4970	173	4390	6	150	6	145	8" / 8"	6000	3000	5800	2900	9530	4320
50	159	4040	103	2610	208	5270	185	4690	6	150	6	145	6" / 6"	6000	3000	5700	2800	9640	4370
100	178	4540	113	2870	227	5770	205	5190	6	150	6	145	6" / 6"	5950	2950	5500	2700	9750	4420
	198	5040	123	3120	247	6270	224	5690	6	150	6	145	8° / 6°	5700	2850	4400	2000	9930	4500
	218	5540	133	3370	267	6770	244	6190	6	150	6	145	8° / 6°	5800	2750	2850	1300	10040	4550
	237	6040	144	3640	287	7270	264	6690	- 6	150	6	145	6" / 6"	4500	2050	1850	800	10120	4590
	110	2810	76	1930	159	3830	137	3480	27	700	49	1260	6° / 10°	6000	3000	5900	2900	9350	4240
×	119	3040	81	2050	168	4060	146	3710	32	820	54	1380	6° / 10°	6000	3000	5900	2900	9420	4270
DUPLEX	129	3290	86	2170	178	4310	156	3950	37	940	59	1500	61/10	6000	3000	5900	2900	9460	4290
크	139	3530	90	2290	188	4550	166	4200	41	1060	84	1620	6° / 10°	6000	3000	5900	2900	9550	4330
0	147	3740	96	2430	196	4760	174	4410	47	1200	69	1770	6' / 6'	6000	3000	5800	2900	9600	4350
	159	4050	103	2610	208	5070	186	4720	54	1380	76	1950	8°/6°	6000	3000	5700	2800	9730	4410
	147	3730	72	1830	196	4750	173	4400	23	600	45	1160	6º / 6º	6000	3000	5800	2850	9820	4450
	158	4030	76	1930	207	5050	185	4700	27	700	49	1260	8' / 6'	6000	3000	5800	2800	9880	4470
9.2	171	4360	81	2050	220	5380	198	5030	32	820	54	1380	60/60	6000	3000	5500	2700	9930	4500
X	185	4740	86	2170	235	5760	213	5410	37	940	59	1500	5" / 6"	5900	2900	5400	2600	9990	4530
ã	200	5100	90	2290	250	6120	227	5770	41	1050	64	1620	6" / 6"	5700	2800	4250	1950	10080	4570
TRIPL	218	5490	96	2430	285	8510	243	6180	47	1200	89	1770	8° / 6°	5500	2750	2950	1350	10260	4850
	236	6010	103	2610	285	7030	263	6680	54	1380	76	1950	6' / 6'	4500	2050	1750	850	10370	4700
	258	8510	113	2870	305	7530	283	7180	64	1640	87	2210	81/6	3300	1500	•		10520	4770
	277	7040	121	3070	326	8060	304	7710	72	1840	94	2410	6' / 6"	*10		. 9		10630	4820



^{*} Contact CSM Group to obtain capacities.

^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP30N - Solid Single Drive

1)		um Fork ight	Overall	Lowered	Ow	erall Exte	nded He	right		Fre	elift		Tilt	Rated Ca Fo	TO THE REAL PROPERTY.	Rated 0 w/ Side	Capacity shifter **	Total V	-
Mast Typ	(M	FH)	(0	AL)	1800	oad krest		Load krest		Load krest		Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	with St Carr and 42'	lage
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	lb	kg	lb	kg
	80	2040	61	1530	129	3270	106	2690	6	150	6	145	6" / 10"	6000	3000	6000	2900	9400	4260
	102	2800	72	1810	151	3830	128	3250	6	150	6	145	6° / 10°	6000	3000	6000	2900	9480	4300
	121	3070	81	2050	170	4300	147	3720	6	150	- 6	145	6" / 10"	6000	3000	6000	2900	9570	4340
×	130	3310	88	2170	179	4540	158	3960	6	150	8	145	6° / 10°	6000	3000	6000	2900	9820	4380
SIMPLEX	139	3560	90	2290	189	4780	166	4200	6	150	6	145	6° / 10°	6000	3000	6000	2900	9710	4400
9	147	3740	96	2430	196	4970	173	4390	6	150	6	145	6" / 6"	6000	3000	6000	2900	9750	4420
co.	159	4040	103	2610	208	5270	185	4690	6	150	В	145	8"/8"	6D00	3000	5800	2850	9880	4480
	178	4540	113	2870	227	5770	205	5190	6	150	6	145	6° / 6°	6000	3000	5600	2750	9990	4530
	198	5040	123	3120	247	6270	224	5690	6	150	В	145	61/6	5950	2900	5400	2650	10170	4610
	218	5540	133	3370	267	6770	244	6190	6	150	6	145	6° / 6°	5800	2800	4800	2100	10280	4650
	237	6040	144	3640	287	7270	264	6690	6	150	6	145	6" / 6"	5600	2700	2600	1200	10370	4700
	110	2810	76	1930	159	3830	137	3480	27	700	49	1280	81 / 101	6000	3000	6000	2900	9600	4350
\times	119	3040	81	2050	168	4060	146	3710	32	820	54	1380	6° / 10°	6000	3000	6000	2900	9640	4370
DUPLEX	129	3290	86	2170	178	4310	156	3960	37	940	59	1500	6" / 10"	6000	3000	6000	2900	9710	4400
3	139	3530	90	2290	188	455D	166	4200	41	1080	64	1620	6" / 10"	6000	3000	6000	2900	9770	4430
ted.	147	3740	98	2430	198	4760	174	4410	47	1200	69	1770	8° / 8°	6000	3000	8000	2900	9840	4460
	159	4050	103	2610	208	5070	186	4720	54	1380	76	1950	64/65	6000	3000	5800	2850	9970	4520
	147	3730	72	1830	198	4750	173	4400	23	800	45	1160	8' / 8'	6000	3000	6000	2900	10040	4550
	158	4030	76	1930	207	5050	185	4700	27	700	49	1260	61/61	6000	3000	5700	2850	10100	4580
v.	171	4360	81	2050	220	5380	198	5030	32	820	54	138D	8" / 6"	6000	3000	5600	2750	10170	4610
TRIPLEX	186	4740	88	2170	235	5760	213	5410	37	940	59	1500	6° / 6°	6000	3000	5500	2700	10230	4640
<u>a</u>	200	5100	90	2290	250	6120	227	5770	41	1060	64	1620	6' / 6'	5950	2900	5400	2600	10300	4670
H.	218	5490	98	2430	265	6510	243	6160	47	1200	69	1770	6° / 6°	5700	2800	4600	2550	10500	4760
	236	6010	103	2610	285	7030	263	6680	54	1380	76	1950	6" / 6"	5500	2700	2850	1300	10610	4810
	256	6510	113	2870	305	7530	283	7180	64	1640	87	2210	64/64	5150	2350	1650	750	10740	4870
	277	7040	121	3070	326	8060	304	7710	72	1840	94	2410	6" / 6"	3500	1600	750	350	10870	4930

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP30N - Dual Drive

90	Maximi He	um Fork ight	Overail	Lowered	Ow	erall Exte	nded He	eight		Free	elift		Titt	Rated Ca Fo	rks	Rated C w/ Sides		7010113	Weight
Mast Typ	(M	EH)	(0	AL)	679.1	Load krest	25000	Load krest		Load krest		Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	with St Can and 42	lage
	in	mm	īn	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	lb	kg	lb	kg
	80	2040	61	1530	129	3270	106	2690	- 6	150	- 6	145	6" / 10"	6000	3000	5900	2900	9370	4250
	102	2600	72	1810	151	3830	128	3250	- 6	150	8	145	6° / 10°	6000	3000	5900	2900	9480	4300
	121	3070	81	2050	170	4300	147	3720	6	150	8	145	6° / 10°	6000	3000	5900	2900	9570	4340
~	130	3310	86	2170	179	4540	156	3960	6	150	6	145	6° / 10°	6000	3000	5900	2900	9620	4360
SIMPLEX	139	3550	90	2290	189	4780	168	4200	6	150	8	145	8" / 10"	6000	3000	5900	2900	9880	4390
0	147	3740	96	2430	198	4970	173	4390	6	150	6	145	6° / 6°	6000	3000	5800	2900	9750	4420
50	159	4040	103	2610	208	5270	185	4690	6	150	8	145	6" / 6"	6000	3000	5700	2800	9860	4470
100	178	4540	113	2870	227	5770	205	5190	6	150	6	145	6° / 6°	5950	2950	5500	2700	9970	4520
	198	5040	123	3120	247	6270	224	5690	- 6	150	Б	145	6" / 6"	5700	2850	5250	2600	10150	4600
ш	218	5540	133	3370	267	6770	244	6190	6	150	6	145	6" / 6"	5600	2750	5150	2500	10260	4650
	237	6040	144	3640	287	7270	264	6890	- 6	150	8	145	8° / 8°	5250	2400	4950	2400	10340	4690
	110	2810	76	1930	159	3830	137	3480	27	700	49	1260	6" / 10"	8000	3000	5900	2900	9570	4340
×	119	3040	81	2050	168	4060	148	3710	32	820	54	1380	6" / 10"	6000	3000	5900	2900	9840	4370
DUPLEX	129	3290	88	2170	178	4310	156	3960	37	940	59	1500	6° / 10°	6000	3000	5900	2900	9680	4390
3	139	3530	90	2290	188	4550	166	4200	41	1060	64	1620	6" / 10"	6000	3000	5900	2900	9770	4430
0	147	3740	98	2430	198	4760	174	4410	47	1200	69	1770	60/60	6000	3000	5800	2900	9620	4450
	159	4050	103	2610	208	5070	186	4720	54	1380	76	1950	6° / 6°	6000	3000	5700	2800	9950	4510
	147	3730	72	1830	198	4750	173	4400	23	800	45	1160	81/81	6000	3000	5800	2850	10040	4550
	158	4030	76	1930	207	5050	185	4700	27	700	49	1260	6º / 6º	6000	3000	5700	2800	10080	4570
333	171	4360	81	2050	220	5380	198	5030	32	820	54	1380	6" / 6"	6000	3000	5500	2750	10150	4600
TRIPLEX	186	4740	88	2170	235	5760	213	5410	37	940	59	1500	6° / 6°	5900	2900	5400	2650	10210	4630
집	200	5100	90	2290	250	6120	227	5770	41	1080	64	1620	6° / 6°	5700	2800	5250	2800	10300	4670
压	216	5490	96	2430	265	6510	243	6160	47	1200	69	1770	6" / 6"	5500	2750	5050	2500	10480	4750
1	236	8010	103	2610	285	7030	263	8880	54	1380	76	1950	8" / 8"	5150	2400	4850	2400	10590	4800
	256	6510	113	2870	305	7530	283	7180	64	1640	87	2210	6" / 6"	3850	1750	3850	1750	10740	4870
	277	7040	121	3070	326	8060	304	7710	72	1840	94	2410	82/85		(*)			10850	4920



^{*} Contact CSM Group to obtain capacities.

^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP30N – Solid Dual Drive

9	Maximu He	um Fork ight	Overall	Lowered	Ow	erall Exte	nded He	eight		Fre	elift		Tilt	Rated Ca Fo	rks	Rated C w/ Sides	Capacity shifter "	Total V	
Mast Typ	(M	FH)	(0	AL)		.oad krest	1 100	Load krest		Load krest		Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	with St Carr and 42	iage
	in	mm	in	mm	. In	mm	in	mm	in	mm	in	mm	deg	lb	kg	lb	kg	lb.	kg
	80	2040	61	1530	129	3270	106	2690	6	150	6	150	6" / 10"	6000	3000	6000	2900	9750	4420
	102	2600	72	1810	151	3830	128	3250	6	150	6	150	6° / 10°	6000	3000	6000	2900	9880	4470
	121	3070	- 81	2050	170	4300	147	3720	6	150	6	150	6° / 10°	6000	3000	6000	2900	9950	4510
×	130	3310	86	2170	179	4540	156	3960	6	150	6	150	6° / 10°	6000	3000	6000	2900	8880	4530
X	139	3550	90	2290	189	4780	166	4200	6	150	6	150	6° / 10°	6000	3000	6000	2900	10080	4580
SIMPL	147	3740	96	2430	196	4970	173	4390	6	150	6	150	64/6	6000	3000	6000	2900	10120	4590
5	159	4040	103	2610	208	5270	185	4690	- 6	150	8	150	8" / 8"	6000	3000	5800	2850	10230	4640
	178	4540	113	2870	227	5770	205	5190	6	150	6	150	6" / 6"	6000	3000	5600	2750	10340	4690
	198	5040	123	3120	247	6270	224	5890	- 6	150	8	150	8" / 6"	5950	2900	5400	2650	10520	4770
	218	5540	133	3370	267	6770	244	8190	6	150	6	150	61/61	5800	2800	5150	2500	10630	4820
42.5	237	6040	144	3640	287	7270	264	6690	- 6	150	8	150	6° / 6°	5600	2700	4950	2400	10720	4860
	110	2810	76	1930	159	3830	137	3480	27	700	49	1260	6° / 10°	6000	3000	6000	2900	9950	4510
×	119	3040	B1	2050	188	4060	148	3710	32	820	54	1380	6° / 10°	6000	3000	6000	2900	10010	4540
Ш.	129	3290	86	2170	178	4310	156	3960	37	940	59	1500	6° / 10°	6000	3000	6000	2900	10060	4560
DUP	139	3530	90	2290	188	4550	166	4200	41	1060	64	1620	6" / 10"	6000	3000	6000	2900	10150	4600
0	147	3740	98	2430	198	4760	174	4410	47	1200	69	1770	6° / 6°	6000	3000	6000	2900	10190	4620
0	159	4050	103	2610	208	5070	186	4720	54	1380	76	1950	6" / 6"	6000	3000	5800	2850	10320	468D
100	147	3730	72	1830	198	4750	173	4400	23	600	45	1160	6º / 6º	6000	3000	6000	2900	10410	4720
	158	4030	76	1930	207	5050	185	4700	27	700	49	1260	61/61	6000	3000	5700	2850	1450	4740
0.0	171	4360	81	2050	220	538D	198	5030	32	820	54	1380	8" / 8"	6000	3000	5600	2750	10520	4770
$\tilde{\Box}$	186	4740	86	2170	235	5760	213	5410	37	940	59	1500	6° / 6°	6000	3000	5500	2700	10590	4800
TRIPLEX	200	5100	90	2290	250	6120	227	5770	41	1080	64	1620	60/60	5950	2900	5400	2800	10680	4840
E	216	5490	96	2430	285	6510	243	6160	47	1200	69	1770	6" / 6"	5700	2800	5050	2550	10850	4920
	238	6010	103	2610	285	7030	263	6880	54	1390	76	1950	8" / 8"	5500	2700	4850	2400	10980	4970
	256	6510	113	2870	305	7530	283	7180	64	1640	87	2210	6"/6"	5150	2350	3850	1750	11120	5040
	277	7040	121	3070	326	8060	304	7710	72	1840	94	2410	81/81	3500	1600	2750	1150	11230	5090

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP33N – Single Drive

9		um Fork ight	Overall	Lowered	Ove	erall Exte	nded He	eight		Fre	elift		Tilt	Rated Ca Fo	rks	100000000000000000000000000000000000000	Capacity shifter **	Total \	
Mast Typ	(MI	FH)	10	AL)	10000	Load krest	2000	Load krest	w/ Bac	Load krest	1200	Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	with St Carr and 42	iage
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	lb	kg	lb	kg
	80	2050	65	1850	129	3270	104	2760	-6	150	6	150	6" / 10"	6500	3250	6350	3150	9860	4470
П	103	2820	77	1940	152	3840	126	3330	6	150	6	150	6° / 10°	6500	3250	6350	3150	9970	4520
П	120	3050	86	2180	168	4270	144	3780	- 6	150	6	150	6° / 10°	6500	3250	6350	3150	10080	4580
J.	131	3350	91	2300	180	4570	155	4060	6	150	6	150	6° / 10°	6500	3250	6350	3150	10150	4600
SIMPLEX	140	3580	97	2450	189	4800	164	4290	- 6	150	6	150	6" / 10"	6500	3250	6350	3150	10190	4620
9	148	3770	99	2510	197	4990	171	4480	6	150	6	150	6° / 6°	6500	3250	6350	3150	10280	4660
急	159	4050	109	2770	208	5270	187	4780	- 6	150	6	150	6, 16,	6500	3250	6350	3150	10390	4710
	179	4550	119	3010	227	5770	202	5260	6	150	6	150	60 / 60	6500	3250	6250	3100	10540	4780
ш	198	5050	129	3260	247	6270	222	5760	6	150	6	150	6" / 6"	6400	3200	4850	2200	10680	4840
П	218	5550	139	3510	267	6770	242	6260	6	150	6	150	6" / 6"	6250	2850	2950	1350	10760	4880
	238	6050	148	3760	287	7270	262	6760	8	150	6	150	6° / 6°	4500	2050	1650	750	10850	4920
	110	2810	82	2080	159	4030	141	3580	33	940	51	1290	6" / 10"	6500	3250	6350	3150	10080	4570
×	120	3060	86	2180	169	4280	151	3830	37	960	55	1410	6" / 10"	6500	3250	6350	3150	10150	4600
LEX	131	3350	91	2300	180	4570	162	4120	42	1080	60	1530	8° / 10°	6500	3250	6350	3150	10230	4640
DUP	139	3550	97	2450	188	4770	170	4320	48	1220	66	1685	6" / 10"	6500	3250	6350	3150	10280	4660
O:	148	3770	104	2830	197	4990	179	4540	55	1400	73	1980	6° / 6°	6500	3250	6350	3150	10390	4710
ш	159	4050	109	2770	208	5270	190	4820	60	1540	78	2000	6" / 6"	6500	3250	6350	3150	10480	4750
	148	3780	77	1940	197	5000	171	4550	28	720	46	1170	6" / 6"	6500	3250	6350	3150	10540	4780
ш	159	4060	82	2060	208	5280	183	4830	33	840	51	1290	6° / 6°	6500	3250	6350	3150	10610	4810
	174	4440	86	2180	223	5660	197	5210	37	960	55	1410	6" / 6"	6500	3250	6250	3100	10680	4840
X	187	4750	91	2300	235	5970	209	5520	42	1080	60	1530	6° / 6°	6500	3200	6150	3000	10760	4880
TRIPLEX	200	5080	97	2450	248	6300	222	5850	48	1220	88	1680	6° / 6°	6400	3150	4950	2250	10940	4980
Ĕ	221	5630	104	2630	270	6850	244	6400	55	1400	73	1860	6' / 6'	6150	2800	2950	1350	11050	5010
(5)	238	6050	109	2770	287	7270	260	6820	60	1540	78	2000	8° / 6°	4500	2050	1750	850	11140	5050
	258	6560	116	2940	307	7780	281	7330	67	1720	85	2170	6° / 6°	3300	1500			11250	5100
П	277	7050	124	3140	326	8270	301	7820	75	1910	93	2370	6" / 6"	-		18	*:	11380	5150

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP33N - Solid Single Drive

90	Maximu He	um Fark ight	Overall	Lowered	Ow	erall Exte	nded He	eight		Fre	elift		Tilt		ipacity w/ rks	Rated 0 w/ Side:	5000000	Total V	
Mast Typ	(M)	FH)	(0	AL)		Load krest	4000	Load krest		Load krest	275.77	Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 rnm Load Center	with St Carr and 42	iage
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	Ib	kg	1b	kg
	80	2050	65	1650	129	3270	104	2760	6	150	6	150	6" / 10"	6500	3250	6500	3150	10190	4620
П	103	2820	77	1940	152	3840	126	3330	6	150	6	150	6° / 10°	6500	3250	8500	3150	10300	4670
П	120	3050	88	2180	188	4270	144	3760	8	150	8	150	8° / 10°	6500	3250	8500	3150	10390	4710
U	131	3350	91	2300	180	4570	155	4060	6	150	6	150	6° / 10°	6500	3250	6500	3150	10480	4750
ŭ,	140	3580	97	2450	189	4800	164	4290	8	150	8	150	6° / 10°	6500	3250	8500	3150	10520	4770
Ē	148	3770	99	2510	197	4990	171	4480	6	150	6	150	61/61	6500	3250	6500	3150	10610	4810
SIMPL	159	4050	109	2770	208	5270	187	4760	- 6	150	8	150	6" / 6"	6500	3250	6350	3150	10720	4880
7.0	179	4550	119	3010	227	5770	202	5260	6	150	6	150	6° / 6°	6500	3250	6350	3100	10870	4930
ш	198	5050	129	3260	247	6270	222	5760	- 6	150	Б	150	6" / 6"	6500	3250	6150	3050	11010	4990
ш	218	5550	139	3510	267	6770	242	6260	6	150	6	150	6"/6"	6350	3200	4600	2100	11090	5030
	238	8050	148	3780	287	7270	262	8760	6	150	8	150	8º / 8º	6250	3100	2600	1200	11180	5070
	110	2810	82	2080	159	4030	141	3580	33	940	51	1290	6" / 10"	6500	3250	6500	3150	10410	4720
×	120	3060	88	2180	189	4280	151	3830	37	960	. 55	1410	6" / 10"	6500	3250	6500	3150	10480	4750
9	131	3350	91	2300	180	4570	162	4120	42	1090	60	1530	6° / 10°	6500	3250	6500	3150	10570	4790
9.	139	3550	97	2450	188	4770	170	4320	48	1220	66	1685	6" / 10"	6500	3250	6500	3150	10610	4810
ರ	148	3770	104	2630	197	4990	179	4540	55	1400	73	1860	6º / 6º	6500	3250	6500	3150	10720	4860
	159	4050	109	2770	208	5270	190	4820	60	1540	78	2000	6" / 6"	6500	3250	6350	3150	10810	4900
	148	3780	77	1940	197	5000	171	4550	28	720	48	1170	81/6	6500	3250	6500	3150	10870	4930
ш	159	4060	82	2060	208	5280	183	4830	33	840	51	1290	60/60	6500	3250	6350	3150	10940	4960
400	174	4440	86	2180	223	5660	197	5210	37	960	55	1410	6" / 6"	6500	3250	6350	3150	11010	4990
X	187	4750	91	2300	235	5970	209	5520	42	1090	60	1530	6° / 6°	6500	3250	6250	3100	11090	5030
TRIPLEX	200	5080	97	2450	248	6300	222	5850	48	1220	66	1680	6º / 6º	6500	3200	6150	3000	11270	5110
区	221	5630	104	2630	270	6850	244	6400	55	1400	73	1860	6" / 6"	6300	3150	4600	2100	11380	5160
10	238	8050	109	2770	287	7270	260	8820	60	1540	78	2000	8º / 8º	6250	3100	2850	1300	11470	5200
	258	6560	116	2940	307	7780	281	7330	67	1720	85	2170	6° / 6°	5150	2350	1650	750	11580	5250
	277	7050	124	3140	326	8270	301	7820	75	1910	93	2370	6º / 6º	3500	1600	750	350	11890	5300

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP33N - Dual Drive

e e	100000	um Fork ight	Overall	Lowered	Ow	erall Exte	nded He	eight		Fre	elift		Tilt	Rated Ca Fo		Rated 0 w/ Side:	-	Total V	Veight
Mast Typ	(M	FH)	(0	AL)	1.500.0	Load krest	1000000	Load krest		Load krest		Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	with St Carr and 42	iage
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	lb	kg	lb	kg
	80	2050	85	1650	129	3270	104	2760	6	150	В	150	6" / 10"	8500	3250	6350	3150	10080	4580
	103	2620	77	1940	152	3840	126	3330	6	150	6	150	6° / 10°	6500	3250	6350	3150	10170	4610
	120	3050	88	2180	168	4270	144	3760	6	150	- 6	150	6° / 10°	6500	3250	6350	3150	10280	4650
v.	131	3350	91	2300	180	4570	155	4060	6	150	6	150	6" / 10"	6500	3250	6350	3150	10340	4690
SIMPLEX	140	3580	97	2450	189	4800	164	4290	6	150	8	150	6° / 10°	6500	3250	6350	3150	10390	4710
₽	148	3770	99	2510	197	4990	171	4480	6	150	6	150	64/64	6500	3250	6350	3150	10480	4750
20	159	4050	109	2770	208	5270	187	4760	- 6	150	8	150	6" / 6"	6500	3250	6350	3150	10590	4800
-	179	4550	119	3010	227	5770	202	5260	6	150	6	150	6° / 6°	6500	3250	6350	3150	10740	4870
	198	5050	129	3280	247	6270	222	5760	- 6	150	В	150	6" / 6"	6400	3200	6150	3000	10870	4930
	218	5550	139	3510	267	6770	242	8260	6	150	6	150	6' / 6'	6250	3100	5950	2900	10960	4970
	238	6050	148	3760	287	7270	262	6760	6	150	6	150	6° / 6°	5250	2400	5250	2400	11050	5010
1000	110	2810	82	2080	159	4030	141	3580	33	940	51	1290	6° / 10°	6500	3250	6350	3150	10280	4660
×	120	3060	88	2180	189	4280	151	3830	37	980	55	1410	8° / 10°	6500	3250	6350	3150	10340	4890
DUPLEX	131	3350	91	2300	180	4570	162	4120	42	1080	60	1530	6° / 10°	6500	3250	6350	3150	10430	4730
9	139	3550	97	2450	188	4770	170	4320	48	1220	66	1685	6° / 10°	6500	3250	6350	3150	10480	4750
0	148	3770	104	2630	197	4990	179	4540	55	1400	73	1860	6° / 6°	6500	3250	6350	3150	10590	4800
	159	4050	109	2770	208	5270	190	4820	60	1540	78	2000	6" / 6"	6500	3250	6350	3150	10680	4840
100	148	3780	77	1940	197	5000	171	4550	28	720	46	1170	81/81	6500	3250	6350	3150	10740	4870
	159	4060	82	2060	208	5280	183	4830	33	840	51	1290	6" / 6"	6500	3250	6350	3150	10810	4900
	174	4440	88	2180	223	5660	197	5210	37	980	55	1410	81/81	8500	3250	6350	3100	10870	4930
Ĭ.	187	4750	91	2300	235	5970	209	5520	42	1080	60	1530	6° / 6°	6500	3200	6150	3050	10960	4970
TRIPLEX	200	5080	97	2450	248	6300	222	5850	48	1220	66	1680	6" / 6"	6400	3150	6050	3000	11140	5050
2	221	5630	104	2630	270	6850	244	8400	55	1400	73	1860	6" / 6"	6150	3050	5800	2850	11250	5100
1.5	238	6050	109	2770	287	7270	260	6820	60	1540	78	2000	6°/6°	5250	2400	5250	2400	11340	5140
	258	6560	116	2940	307	7780	281	7330	67	1720	85	2170	6" / 6"	3850	1750	3850	1750	11450	5190
	277	7050	124	3140	326	8270	301	7820	75	1910	93	2370	87 / 81	*	11038001		110000	11580	5240



^{*} Contact CSM Group to obtain capacities.

^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP33N – Solid Dual Drive

R	Maximi He	um Fork ight	Overall	Lowered	Ov	erall Exte	nded He	eight	0	Fre	elift		Tilt	Rated Ca For	rks	Rated C w/ Sides	shifter **	100000000000000000000000000000000000000	Veight
Mast Ty	(M	FH)	(0	AL)		oad krest		Load krest		Load krest		Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	with St Carr and 42°	nage
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	lb	kg	lb	kg
	80	2050	85	1850	129	327D	104	2760	6	150	8	150	6" / 10"	6500	3250	6500	3150	10430	4730
	103	2620	77	1940	152	3840	126	3330	6	150	6	150	6° / 10°	6500	3250	6500	3150	10540	4780
	120	3050	88	2180	168	4270	144	3760	6	150	6	150	6" / 10"	6500	3250	6500	3150	10630	4820
~	131	3350	91	2300	190	4570	155	4080	8	150	6	150	6° / 10°	6500	3250	6500	3150	10720	4860
SIMPLEX	140	3580	97	2450	189	4800	164	4290	6	150	6	150	6" / 10"	6500	3250	6500	3150	10760	4880
4	148	3770	99	2510	197	4990	171	4480	6	150	8	150	6º / 6º	6500	3250	6500	3150	10850	4920
E/2	159	4050	109	2770	208	5270	187	4760	6.	150	6	150	61/61	6500	3250	6350	3150	10960	4970
	179	4550	119	3010	227	5770	202	5260	6	150	6	150	6º / 6º	6500	3250	6350	3150	11120	5040
	198	5050	129	3280	247	6270	222	5760	6	150	В	150	6" / 6"	6500	3250	6150	3050	11250	5100
	218	5550	139	3510	267	6770	242	6260	6	150	6	150	6° / 6"	6350	3200	5950	2900	11340	5140
	238	6050	148	3760	287	7270	262	8760	6	150	8	150	6" / 6"	6250	3100	5250	2400	11420	5180
1	110	2810	82	2080	159	4030	141	3580	33	940	51	1290	6° / 10°	.6500	3250	6500	3150	10650	4830
×	120	3060	86	2180	169	4280	151	3830	37	960	55	1410	6° / 10°	6500	3250	6500	3150	10720	4860
DUPLE	131	3350	91	2300	180	4570	182	4120	42	1080	60	1530	6° / 10°	6500	3250	8500	3150	10810	4900
5	139	3550	97	2450	188	4770	170	4320	48	1220	66	1685	6° / 10°	6500	3250	6500	3150	10850	4920
0	148	3770	104	2630	197	4990	179	4540	55	1400	73	1860	6" / 6"	8500	3250	6500	3150	10980	4970
	159	4050	109	2770	208	5270	190	4820	60	1540	78	2000	60 / 60	6500	3250	6350	3150	11050	5010
45.5	148	3780	77	1940	197	5000	171	4550	28	720	46	1170	6"/6"	6500	3250	6500	3150	11120	5040
	159	4060	82	2080	208	5280	183	4830	33	840	51	1290	81/81	8500	3250	6350	3150	11180	5070
	174	4440	86	2180	223	5660	197	5210	37	960	55	1410	61/61	6500	3250	6350	3150	11250	5100
PLEX	187	4750	91	2300	235	5970	209	5520	42	1080	60	1530	61/61	6500	3250	6250	3100	11340	5140
ă.	200	5080	97	2450	248	6300	222	5850	48	1220	66	1680	6" / 6"	6500	3200	6150	3000	11510	5220
32	221	5630	104	2630	270	6850	244	6400	55	1400	73	1860	6° / 6°	6300	3150	5800	2850	11620	5270
	238	6050	109	2770	287	7270	260	6820	60	1540	78	2000	6" / 6"	6250	3100	5250	2400	11710	5310
	258	6560	116	2940	307	7780	281	7330	67	1720	85	2170	6° / 6°	5150	2350	3850	1750	11820	5360
	277	7050	124	3140	326	8270	301	7820	75	1910	93	2370	6"/6"	3500	1600	2750	1150	11930	5410

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP35N - Single Drive

0		um Fork ight	Overall	Lowered	Ove	erall Exte	nded He	eight		Fre	elift		Titt	Rated Ca Fo	pacity w ⁱ rks	Rated 0	-		Veight
Mast Type	(M	FH)	/(0	AL)		Load Krest	100	Load krest		Load krest	- 2007	Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	with St Carr and 42	iage
150	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	1b	kg	lb	kg	lb	kg
	80	2050	65	1650	129	3270	104	2760	8	150	- 6	150	6" / 10"	7000	3500	6850	3400	10080	4560
	103	2620	77	1940	152	3840	126	3330	6	150	6	150	6° / 10°	7000	3500	8850	3400	10170	4810
	120	3050	86	2180	168	4270	144	3760	В	150	6	150	6" / 10"	7000	3500	6850	3400	10280	4660
×	131	3350	91	2300	180	4570	155	4060	6	150	6	150	6° / 10°	7000	3500	8850	3400	10340	4890
SIMPLEX	140	3580	97	2450	189	4800	164	4290	6	150	6	150	6" / 10"	7000	3500	6850	3400	10410	4720
4	148	3770	99	2510	197	4990	171	4480	6	150	6	150	6" / 6"	7000	3500	6800	3400	10480	4750
8	159	4050	109	2770	208	5270	187	4760	- 6	150	6	150	81/60	7000	3500	8700	3300	10590	4800
	179	4550	119	3010	227	5770	202	5260	6	150	6	150	6º / 6°	7000	3500	6500	3200	10740	4870
	198	5050	129	3280	247	6270	222	5760	8	150	6	150	61/60	6900	3400	4850	2200	10870	4930
	218	5550	139	3510	267	6770	242	6260	6	150	6	150	6° / 6°	6250	2850	2950	1350	10960	4970
1500	238	6050	148	3760	287	7270	262	6760	8	150	6	150	6" / 6"	4500	2050	8	*	11070	5020
	110	2810	82	2080	159	4030	141	3580	33	940	51	1290	6° / 10°	7000	3500	8850	3400	10280	4860
×	120	3060	86	2180	169	4280	151	3830	37	860	55	1410	6° / 10°	7000	3500	6850	3400	10340	4690
DUPLEX	131	3350	91	2300	180	4570	182	4120	42	1000	60	1530	6° / 10°	7000	3500	6850	3400	10430	4730
5	139	3550	97	2450	188	4770	170	4320	48	1220	66	1685	6" / 10"	7000	3500	6850	3400	10480	4750
0	148	3770	104	2630	197	4990	179	4540	55	1400	73	1860	60/60	7000	3500	6800	3400	10610	4810
	159	4050	109	2770	208	5270	190	4820	60	1540	78	2000	6' / 6"	7000	3500	6700	3300	10680	4840
	148	3780	77	1940	197	5000	171	4550	28	720	46	1170	8° / 6°	7000	3500	6800	3350	10740	4870
	159	4060	82	2060	208	5280	183	4830	33	840	51	1290	6" / 6"	7000	3500	6700	3300	10810	4900
L/G	174	4440	86	2180	223	5680	197	5210	37	960	55	1410	8° / 8°	7000	3500	8500	3200	10870	4930
ŭ	187	4750	91	2300	235	5970	209	5520	42	1080	60	1530	6° / 6°	7000	3450	6350	3000	10960	4970
RIPLEX	200	5080	97	2450	248	6300	222	5850	48	1220	88	1680	61/60	6800	3350	4950	2250	11140	5050
5	221	5630	104	2630	270	6850	244	6400	55	1400	73	1880	6" / 6"	6150	2800	2950	1350	11270	5110
	238	6050	109	2770	287	7270	260	6820	60	1540	78	2000	6" / 6"	4500	2050	1750	850	11340	5140
	258	6560	116	2940	307	7780	281	7330	67	1720	85	2170	6" / 6"	3300	1500			11450	5190
	277	7050	124	3140	328	8270	301	7620	75	1910	93	2370	61/69			1.5		11580	5240

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP35N - Solid Single Drive

9	LA STATE OF THE PARTY OF THE PA	um Fork ight	Overall	Lowered	Öw	erall Exte	nded He	eight		Fre	elift		Titt	Rated Ca Fo	rks	Rated 0 w/ Sides	shifter "	Total V	CONTRACTOR OF THE PARTY OF THE
Mast Typ	(M	FH)	(0	AL)	100000	Load krest	2.75	Load krest		Load krest		Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	with St Carr and 42°	lage
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	1b	kg	lb	kg
	80	2050	85	1650	129	3270	104	2760	- 6	150	- 6	150	6" / 10"	7000	3500	7000	3400	10390	4710
	103	2820	77	1940	152	3840	126	3330	6	150	8	150	6° / 10°	7000	3500	7000	3400	10500	4760
П	120	3050	88	2180	188	4270	144	3760	6	150	В	150	8° / 10°	7000	3500	7000	3400	10610	4810
~	131	3350	91	2300	180	4570	155	4060	6	150	6	150	6° / 10°	7000	3500	7000	3400	10680	4840
SIMPLEX	140	3580	97	2450	189	4800	164	4290	6	150	В	150	8° / 10°	7000	3500	7000	3400	10740	4870
9	148	3770	99	2510	197	4990	171	4480	6	150	6	150	6° / 6°	7000	3500	7000	3400	10810	4900
<u>~</u>	159	4050	109	2770	208	5270	187	4760	- 6	150	В	150	8" / 6"	7000	3500	6800	3350	10920	4950
	179	4550	119	3010	227	5770	202	5280	6	150	6	150	$6^{\circ}/6^{\circ}$	7000	3500	6600	3250	11070	5020
	198	5050	129	3260	247	6270	222	5760	6	150	6	150	6" / 6"	7000	3500	635D	3150	11200	5080
ш	218	5550	139	3510	267	6770	242	6260	6	150	6	150	6' / 6'	6800	3350	4600	2100	11290	5120
	238	8050	148	3780	287	7270	262	6760	- 6	150	6	150	8º / 6º	6600	3250	2600	1200	11400	5170
	110	2810	82	2080	159	4030	141	3580	33	940	51	1290	6° / 10°	7000	3500	7000	3400	10610	4810
×	120	3060	86	2180	189	428D	151	3830	37	980	55	1410	6" / 10"	7000	3500	7000	3400	10680	4840
DUPLEX	131	3350	91	2300	180	4570	162	4120	42	1080	60	1530	6° / 10°	7000	3500	7000	3400	10760	4880
3	139	3550	97	2450	188	4770	170	4320	48	1220	66	1685	6" / 10"	7000	3500	7000	3400	10810	4900
0	148	3770	104	2630	197	4990	179	4540	55	1400	73	1860	8° / 6°	7000	3500	7000	3400	10940	4960
	159	4050	109	2770	208	5270	190	4820	60	1540	78	2000	6" / 6"	7000	3500	6800	3350	11010	4990
	148	3780	77	1940	197	5000	171	4550	28	720	46	1170	81/80	7000	3500	7000	3400	11070	5020
	159	4060	82	2060	208	5280	183	4830	33	840	51	1290	6° / 6°	7000	3500	6800	3350	11140	5050
	174	4440	88	2180	223	5660	197	5210	37	960	55	1410	8" / 6"	7000	3500	6600	3250	11200	5080
TRIPLEX	187	4750	91	2300	235	5970	209	5520	42	1080	60	1530	6° / 6°	7000	3500	6500	3150	11290	5120
교	200	5080	97	2450	248	6300	222	5850	48	1220	66	1680	6' / 6'	7000	3450	6350	3100	11470	5200
E	221	5630	104	2630	270	6850	244	6400	55	1400	73	1860	64/6	6700	3300	4600	2100	11600	5260
	238	6050	109	2770	287	7270	260	8820	60	1540	78	2000	8" / 8"	6600	3200	2850	1300	11870	5290
	258	6560	116	2940	307	7780	281	7330	67	1720	85	2170	6° / 6°	5150	2350	1650	750	11780	5340
	277	7050	124	3140	328	8270	301	7820	75	1910	93	2370	6" / 6"	3500	1600	750	350	11890	5390

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP35N - Dual Drive

8	Maximu He	um Fork ight	Overall	Lawered	Ow	erall Exte	nded He	eight		Fre	elift		Tilt	Rated Ca Fo	rks	Rated 0 w/ Side	2000000	0.000	Veight
Mast Tyj	(M	FH)	(0	AL)		Load krest	30000	Load krest	200	Load krest	277.5	Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	with St Carr and 42	riage
-	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	lb	kg	1b	kg
	80	2050	85	1650	129	3270	104	2760	6	150	- 6	150	6° / 10°	7000	3500	6850	3400	10280	4650
	103	2620	77	1940	152	3840	126	3330	6	150	6	150	6" / 10"	7000	3500	6850	3400	10370	4700
	120	3050	86	2180	168	4270	144	3760	6	150	6	150	6° / 10°	7000	3500	6850	3400	10480	4750
o.	131	3350	91	2300	180	4570	155	4060	6	150	8	150	8° / 10°	7000	3500	6850	3400	10540	4780
SIMPLEX	140	3580	97	2450	189	4800	164	4290	6	150	6	150	6° / 10°	7000	3500	6850	3400	10610	4810
Ē.	148	3770	99	2510	197	4990	171	4480	- 6	150	8	150	6' / 6'	7000	3500	6850	3400	10650	4840
5	159	4050	109	2770	208	5270	187	4760	6	150	6	150	6° / 6°	7000	3500	6700	3350	10790	4890
88,	179	4550	119	3010	227	5770	202	5260	- 6	150	6	150	6" / 6"	7000	3500	6500	3200	10940	496D
	198	5050	129	3280	247	6270	222	5760	6	150	6	150	6° / 6°	6900	3400	6250	3100	11070	5020
	218	5550	139	3510	287	6770	242	8280	6	150	8	150	80 / 80	6600	3200	6050	3000	11160	5080
	238	6050	148	3760	287	7270	262	6760	6	150	6	150	6º / 6º	5250	2400	5250	2400	11270	5110
	110	2810	82	2060	159	4030	141	3580	33	940	51	1290	6° / 10°	7000	3500	6850	3400	10480	4750
×	120	3060	88	2180	169	4280	151	3830	37	980	55	1410	6° / 10°	7000	3500	6850	3400	10540	4780
DUPLEX	131	3350	91	2300	180	4570	162	4120	42	1080	60	1530	6" / 10"	7000	3500	6850	3400	10630	4820
9	139	3550	97	2450	188	4770	170	4320	48	1220	66	1685	6° / 10°	7000	3500	8850	3400	10690	4840
	148	3770	104	2630	197	4990	179	4540	55	1400	73	1860	6" / 6"	7000	3500	6850	3400	10810	4900
	159	4050	109	2770	208	5270	190	4820	80	1540	78	2000	8º / 8º	7000	3500	8700	3350	10870	4930
	148	3780	77	1940	197	5000	171	4550	28	720	46	1170	6º / 6º	7000	3500	6800	3350	10940	4960
	159	4060	82	2060	208	5280	183	4830	33	840	51	1290	6" / 6"	7000	3500	6700	3300	11010	4990
3.3	174	4440	88	2180	223	5660	197	5210	37	980	55	1410	60/60	7000	3500	8500	3200	11070	5020
ă	187	4750	91	2300	235	5970	209	5520	42	1080	60	1530	6" / 6"	7000	3450	6350	3150	11160	5060
RIPLEX	200	5080	97	2450	248	6300	222	5850	48	1220	66	1680	80 / 80	6800	3350	6250	3050	11340	5140
8	221	5830	104	2630	270	6850	244	8400	55	1400	73	1860	8° / 8°	6350	3200	5950	2950	11470	5200
22	238	6050	109	2770	287	7270	260	6820	60	1540	78	2000	6º / 6º	5250	2400	5250	2400	11540	5230
	258	6560	116	2940	307	7780	281	7330	67	1720	85	2170	8' / 6'	3850	1750	3850	1750	11850	5280
	277	7050	124	3140	326	8270	301	7820	75	1910	93	2370	60/60		7.00			11760	5330

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

GP35N – Solid Dual Drive

	Maximo	um Fark ight	Overall	Lowered	Ow	erall Exte	nded He	eight		Fre	elift		Tilt	Rated Ca		Rated 0	Capacity	Total V	Maicht
Mast Type		FH)	(0	AL)		oad krest	2000	Load krest		Load krest	200,000	Load krest	F/B	@24 in Load Center	@ 500 mm Load Center	@24 in Load Center	@ 500 mm Load Center	with St	tandard rage
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	deg	lb	kg	lb	kg	lb	kg
	80	2050	65	1650	129	3270	104	2760	- 6	150	6	150	6" / 10"	7000	3500	7000	3400	10630	4820
1	103	2820	77	1940	152	3840	126	3330	8	150	6	150	6° / 10°	7000	3500	7000	3400	10740	4870
1	120	3050	88	2180	188	4270	144	3760	6	150	8	150	6° / 10°	7000	3500	7000	3400	10850	4920
	131	3350	91	2300	180	4570	155	4060	6	150	6	150	6° / 10°	7000	3500	7000	3400	10920	4950
ŭ	140	3580	97	2450	189	4800	164	4290	8	150	8	150	6° / 10°	7000	3500	7000	3400	10980	4980
<u>ā</u>	148	3770	99	2510	197	4990	171	4480	6	150	6	150	60 / 60	7000	3500	7000	3400	11050	5010
SIMPLE	159	4050	109	2770	208	5270	187	4760	- 6	150	8	150	6' / 6'	7000	3500	6800	3350	11160	5080
00	179	4550	119	3010	227	5770	202	5260	6	150	6	150	6° / 6°	7000	3500	6600	3200	11310	5130
1	198	5050	129	3260	247	6270	222	5760	- 6	150	- 6	150	6'/6'	7000	3500	6350	3100	11450	5190
1	218	5550	139	3510	267	6770	242	6260	6	150	6	150	6"/6"	6800	3350	6050	3000	11540	5230
1	238	8050	148	3780	287	7270	262	8760	6	150	8	150	8º / 8º	6600	3250	5250	2400	11850	5280
	110	2810	82	2080	159	4030	141	3580	33	940	51	1290	6" / 10"	7000	3500	7000	3400	10850	4920
×	120	3060	88	2180	189	4280	151	3830	37	960	.55	1410	6" / 10"	7000	3500	7000	3400	10920	4950
9	131	3350	91	2300	190	4570	162	4120	42	1090	60	1530	6° / 10°	7000	3500	7000	3400	11010	4990
DUPLE	139	3550	97	2450	188	4770	170	4320	48	1220	66	1685	6" / 10"	7000	3500	7000	3400	11050	5010
0	148	3770	104	2630	197	4990	179	4540	55	1400	73	1860	8º / 6º	7000	3500	7000	3400	11180	5070
	159	4050	109	2770	208	5270	190	4820	60	1540	78	2000	6" / 6"	7000	3500	6800	3350	11250	5100
	148	3780	77	1940	197	5000	171	4550	28	720	48	1170	6" / 6"	7000	3500	7000	3350	11310	5130
1	159	4060	82	2060	208	5280	183	4830	33	840	51	1290	6º / 6º	7000	3500	6800	3350	11380	5160
900	174	4440	86	2180	223	5660	197	5210	37	960	55	1410	6" / 6"	7000	3500	6600	3250	11450	5190
ă	187	4750	91	2300	235	5970	209	5520	42	1090	60	1530	6° / 6°	7000	3500	8500	3150	11540	5230
TRIPLEX	200	5080	97	2450	248	6300	222	5850	48	1220	66	1680	6"/6"	7000	3450	6350	3100	11710	5310
区	221	5630	104	2630	270	6850	244	6400	55	1400	73	1860	61/61	6700	3300	5950	2950	11840	5370
	238	8050	109	2770	287	7270	260	8820	60	1540	78	2000	8º / 8º	6600	3200	5250	2400	11910	5400
	258	6560	116	2940	307	7780	281	7330	67	1720	85	2170	6° / 6°	5150	2350	3850	1750	12020	5450
	277	7050	124	3140	326	8270	301	7820	75	1910	93	2370	61/61	3500	1600	2750	1150	12130	5500

^{*} Contact CSM Group to obtain capacities.



^{**} Capacity based on model equipment with MCFA OEM integral sideshifter

INTRODUCTION

Market Focus

Class V Market Opportunity

According to ITA information, class V is one of the larger of the lift truck classes as can be seen in the chart below. Because of this, it is imperative that Cat lift trucks offers a premium lineup of strongly competitive IC pneumatic, sit down, counterbalance lift trucks to gain even more presence in the market than it has built over the years. The data is tracked back all the way through 2004 in order to show more than just how the market has fared since the economic troubles that came in the late 2000s.

Over the last 10 years (even with the improvement of electric lift truck technology and stringent federal emissions regulations), the number of trucks sold has fluctuated greatly. Even with this fluctuation, the percentage of all lift trucks sold in the market that are class V has hovered around the same level, at 1/4 of all trucks sold.

Year	Total Class V ITA Factory Orders	Total ITA Factory Orders Across All Classes	Class V As a Percentage of All Orders
2004	65915	233935	28.17%
2005	70714	246539	28.68%
2006	72142	260500	27.69%
2007	72697	244440	29.74%
2008	51722	190318	27.17%
2009	21285	112519	18.92%
2010	43535	174967	24.88%
2011	59482	214057	27.79%
2012	58856	223002	26.39%
2013	57158	236613	24.15%
TOTAL	573506	2136890	26.83%



Class V by Product Type

So let's get a little more specific, as this manual is not about ALL of Class V. How do the trucks that will be described in this manual fit into the marketplace? How much of the 1/4 of all trucks consists of the small IC pneumatic trucks that are described in the following pages? Here you go:

The numbers below suggest that of the one quarter of ALL lift truck factory orders according to the ITA (total Class V sales determined above), around 75% of those orders have been small IC pneumatic capacity trucks. These are the trucks that are a huge population in the market and will be discussed in detail in this manual.

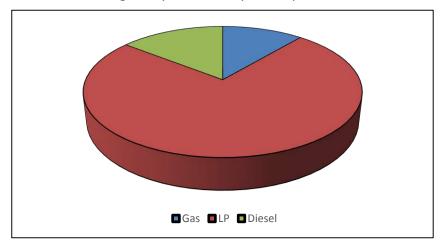
.

Year	SICP Truck Factory Orders	Total Class V Factory Orders	SICP Trucks as a Percentage of All Class V Orders
2004	48314	65915	73.24%
2005	50648	70714	71.62%
2006	51885	72142	71.92%
2007	54518	72697	74.99%
2008	37860	51722	73.20%
2009	16431	21285	77.20%
2010	33637	43535	77.26%
2011	45906	59482	77.18%
2012	44536	58856	75.67%
2013	43899	57158	76.80%
TOTAL	427634	573506	74.56%



SICP by Fuel Type

The small IC pneumatics are available in diesel, gasoline and LP configurations. Market data below (from 2004-2013) shows that a vast majority of the trucks in the market at this size are LP trucks, coming in at 74.39% of all SICP factory orders. At 318,116 actual orders over the time frame listed, these might be the single most important truck offering that you have at your disposal.



Fuel Type	Total Factory Orders	Percentage of Total SICP Orders
Gas	47804	11.18%
LP	318116	74.39%
Diesel	61714	14.43%
TOTAL	427634	100%



Target Industries/Applications

Obviously, there is a more than adequate market for IC pneumatic lift trucks, but where should you start? Below are some of the most common applications and industry segments that have regular use for the family of trucks that are covered in this manual. They represent the heaviest usage of IC lift trucks in the market today.

Industry	Description
Building Materials and Garden Supplies	This industry segment is a key player for class V. It ranks in the top 10 as far as ITA ranked market segments go. It is the most ripe retail market there is for these size trucks and includes the wood and lumber industry where they are extremely popular.
Fabricated Metal Industries	Prone to economic volatility, the fabricated metal products industry is consistently in the top 15 among ITA ranked industry groups. While vulnerable to economic fluctuation, it is also among the first to benefit from economic recovery. Due to its industrial nature, it favors class V trucks.
Stone, Clay, and Glass	While this industry is impacted by both seasonal and cyclical volatility, this group ranks top 20 among ITA industry groups. There is high demand for IC trucks, particularly class V, and there is a favorable long-term forecast for the industry segment.
Industrial Machinery and Equipment	This group is also prone to economic volatility but has consistently ranked in the top 10 of ITA industry groups. While the industry handles a lot of different materials and has a good spread across all five classes, it has a heavier concentration on class V lift trucks.
Miscellaneous Durable Goods	Wholesale trade and durable goods consists of a broad array of establishments that buy bulk merchandise in order to sell into the retail market.



Product Configuration

Models and Capacities

Model	Capacity (Pounds)	Wheelbase (Inches)	Engine	Fuel Type
GP15N	3,000	55.1	K21	Gas/LP
GP18N	3,500	55.1	K21	Gas/LP
GP20N	4,000	55.1	K21	Gas/LP
GP20CN	4,000	55.1	K21	Gas/LP
DP20N	4,000	63.0	Tier 4 Final 4EG	Diesel
GP25N	5,000	63.0	K25	Gas/LP
DP25N	5,000	63.0	Tier 4 Final 4EG	Diesel
GP28N	5,500	63.8	K25	Gas/LP
DP28N	5,500	63.8	Tier 4 Final 4EG	Diesel
GP30N	6,000	66.9	K25	Gas/LP
DP30N	6,000	66.9	Tier 4 Final 4EG	Diesel
GP33N	6,500	66.9	К25	Gas/LP
DP33N	6,500	66.9	Tier 4 Final 4EG	Diesel
GP35N	7,000	66.9	К25	Gas/LP
DP35N	7,000	66.9	Tier 4 Final 4EG	Diesel



Standards Compliance

In addition to relevant global and national health and safety standards, this family of lift trucks is designed according to the highest standards using the latest technologies.

ANSI/ITSDF

All trucks are manufactured in accordance with the American National Standards Institute/Industrial Truck Standards Development Foundation B56.1. These are the safety standards for low lift and high lift trucks.



NFPA 505

All trucks are manufactured in accordance with National Fire Protection Association (NFPA) 505, Fire Safety Standard for Powered Industrial Trucks, including type designations, areas of use, maintenance, and operation.



UL 558

All trucks listed in the standard price list for North American sale are manufactured in compliance with UL 558, Standard for Industrial Trucks, Internal Combustion Engine-Powered. Please note that some options ordered through the Custom Shop Modifications (CSM) group may void UL listing. Please inquire within the CSM group to determine the specific UL position on CSM options ordered. UL LPS and DS type ratings are available as price list options. These ratings provide additional safeguards against fire hazards compared to those required for the types LP and D. To determine



what classification your customer's application requires, refer to the Powered Industrial Trucks, Type Designations, Areas of Use, Maintenance and Operations, NFPA 505.



OSHA

All trucks are labelled in accordance with Occupational Safety and Health Administration (OSHA) Section 1910.178.



EMISSIONS: EPA & CARB

EPA stands for the U.S. Environmental Protection Agency (EPA), which measures and sets performance emission regulations for air, water and land pollution for the United States. EPA has adopted mandatory regulations with regards to engine emissions. These regulations require manufacturers of forklifts to certify that the engines meet a minimum standard for HC+NOx - hydrocarbon plus nitrogen oxides and carbon monoxide (CO) emissions. The California Air Resources Board (CARB) is a long-standing organization that oversees the activities of 35 local and regional air pollution control districts within California. These districts regulate industrial pollution sources and set mandates within the state.







COMPETITIVE COMPARISON

In 2013, Cat Lift Trucks brought competitive trucks in house to be tested against the Cat 2P5000 (the same model as the GP25N in every aspect other than nomenclature) in as many different tests as possible. Knowing the importance of the 5,000 lb. pneumatic tire trucks in our lineup, we were pleased to see that we have quite a story to tell in many categories. As part of the analysis of the competitive testing, we have drastically extrapolated the numbers in outrageous examples to help show just how much our



product can be differentiated over time given some of the advantages that we found through the testing.







Ramp Performance

When tested for ramp performance, the Cat truck had a clear advantage in speed up the ramp. This is a blatant advantage that can be exploited any time the end user has an application that either utilizes ramps to enter /exit warehouses or any time the environment that the truck will be working on has inclines or declines. The benefits of improved ramp performance can be sold to a number of potential purchase influencers such as the operator, operations managers and purchasing managers. This can be done by showing how the job can be made easier, productivity levels can be increased and



the way that increased productivity can justify up front purchase prices to the decision makers listed above, respectively.

It is possible to calculate the amount of productivity that can be had with these speed advantages with the specifics of the application site. Below are the test results at a 10% grade and also on a 14% grade.

	Test	Units	Cat Lift Trucks	Hyster	Toyota
		Km/h	13.30	12.30	11.70
Grade	Speed (Unloaded)	mph	8.31	7.69	7.31
10% (Km/h	9.70	9.10	9.00
	Speed (Loaded)	mph	6.06	5.69	5.63

These test results show that the Cat GP25N is **8% faster** unloaded and **6.5% faster** loaded than the comparable Hyster truck on a 10% grade. Compared to the comparable Toyota truck, the Cat lift truck was **13.6% faster** unloaded and **7.7% faster** loaded than their truck... these are substantial differences.

	Test	Units	Cat Lift Trucks	Hyster	Toyota
Grade	Speed (Unloaded)	Km/h	10.90	10.90	9.50
		mph	6.81	6.81	5.94
14% (Km/h	7.70	7.30	6.90
	Speed (Loaded)	mph	4.81	4.56	4.31

This chart shows substantial differences as well. The GP25N was the same speed unloaded and **5.4% faster** loaded than the Hyster and **14.6% faster** unloaded and **11.6% faster** loaded than the Toyota truck on the 14% grade.



Exaggerated Example:

So what do these numbers mean to our customers? Let's take a look at these values extrapolated out into an example that can really show the kind of difference that this advantage can make over time.

Let's pretend for a moment that these lift trucks were required to make the greatest climb that there is... to the



peak of Mt. Everest at 29,029 ft. of altitude all while carrying a rated load. So of course we know that Mt. Everest is not at a 10% grade, but using trigonometry, we can find that if it was, the total travel distance required to reach the peak would be 293,222 feet of travel. At the speeds tested in the first chart above, this would mean that in the time that it took the Cat truck to travel all the way to the peak, the Hyster truck would only be able to travel to 273,162 feet and the Toyota truck would only be able to travel to 270,643 feet. That is only 93% and 92% of the total climb, respectively. So whenever it comes to ramp performance, who is the king of the mountain?



Top Travel Speed

Top travel speed can directly impact productivity levels. When testing these trucks head to head, the Cat truck was clocked at a higher top speed than the competition. This can make a major difference in applications that have longer cycle times or a longer distance to travel when moving loads.

Test	Units	Cat Lift Trucks	Hyster	Toyota
	Km/h	19.30	18.70	18.30
Top Travel Speed (Unloaded)	mph	12.06	11.69	11.44
	Km/h	19.20	18.80	18.10
Top Travel Speed (Loaded)	Mph	12.00	11.75	11.31

The above chart tells us that when loaded, the Cat truck was 2.1% and 6% faster than the Hyster and Toyota comparable trucks respectively. Whenever unloaded, the truck was 3% and 5% faster than the Hyster and Toyota, respectively.

Exaggerated Example:



If we expand the numbers again to find out just how much more ground the Cat Lift Truck can cover than the leading competition, let's think about marathons. In the time that it would take our truck to cover the distance of a marathon (26.2 miles), the Hyster and Toyota trucks would only be able to travel 25.6 and 24.6 miles each. Doesn't sound like a huge advantage? What if during the course of a week, your lift truck travels one marathon while loading and unloading materials? That would mean that over the course of a year, the Cat GP15N would be able to travel more than 2 marathons more than the competition. Think about that... that means that while the competition is maxing out over the course of a year (based on 26.2 miles of travel a week), the Cat truck would be able to travel 57 more miles. That's a lot of ground covered, and a lot of product moved. How can a Cat lift truck carry your customers and their product across the finish line in first place?



Lift Speeds

When testing for lift speeds, Cat had an advantage again over Hyster and Toyota as can be witnessed by the chart below. You may be starting to notice a trend that is leading to our next comparison that is the most important of all.

Test	Condition	Cat Lift Trucks	Hyster	Toyota
	Unloaded	118.31	96.85	101.38
Lift Speed – 1 st stage (fpm)	Loaded	118.11	86.02	93.70
	Unloaded	131.30	109.65	113.58
Lift Speed – 2 nd Stage (fpm)	Loaded	130.71	98.23	107.28

As you can see, there are pretty substantial differences when tested head to head. That being said, let's look at another drastic example.

Exaggerated Example:

Lift speed can directly affect the number of cycles that your truck can run in a regular day to day application, but just how much of a difference can it make? If we pretend that we had all three of these trucks and they had an imaginary one stage mast that rose at a rate that is the average of the test results above (for 1st and 2nd stage), then the Cat truck would easily reach the top of the Willis Tower in Chicago (at 1,451 feet tall) first with or without a load... and by quite a margin. If the load was at the top of the tower, and the truck was getting it down, it would take the Cat truck 11 minutes to reach the top based on average lift speed... while it would take the Hyster 14.08 minutes and the Toyota 13.5 minutes. That's quite a difference. What about it the truck was lifting the load to the top of the tower? The Cat truck would take 11.7 minutes as compared to 15.75 minutes and 14.43 minutes of the Hyster and Toyota, respectively.





Fuel Consumption and Productivity Cycles

You may have noticed as mentioned in the above sections, all of the side by side performance testing leads up to one thing, which might be the single most important test of all... overall productivity. Some of our competitors have been harping on fuel efficiency for the last few years, and to be perfectly honest, they are good at talking about it. They often speak in straight fuel efficiency, which is determined by finding how much fuel is burned over a set amount of operation of the truck. We also tested this through the use of a standard VDI cycle and found the following:

Test	Cat Lift Trucks	Hyster	Toyota
Straight Fuel Consumption (lb/hr)	9.05	9.60	8.65
VDI Cycle	3.03	3.00	0.03
Productivity Cycles	42	36	38

Exaggerated Example:

So what exactly does the chart above mean? Quite simply it means that the Cat lift truck can get more work done in an hour than the competition. The 42 cycles may not seem to have a drastic advantage over the 36 and 38 cycles that Hyster and Toyota ran in the same amount of time respectively, but whenever you extend it over the course of time it makes a huge difference. For example, if you consider that the Cat truck can run 42 cycles in an hour, over a 10 hour shift, 5 days a week, for 52 weeks... the Cat truck can run 109,200 cycles, versus 93,600 by Hyster or 98,800 by Toyota. That is a difference of over 10,000 cycles over the course of a year whenever you do the math. Sure, whenever we ran the test the Toyota used less fuel in an hour, but the reality is that the Cat truck moved more than enough product to compensate for the slight difference in straight fuel consumption. It is time to stop asking how much fuel was burned and start discussing how much product was moved.





PRODUCTIVITY

K21 and **K25** Engines

The LP and gasoline configurations in this model family are equipped with the K21 or K25 engines that have an existing track record of performance and durability and have been engineered to meet the needs of the lift truck industry. The K21/K25 are designed for high performance, low noise and vibration, excellent fuel economy for the production provided and low emissions to meet the CARB/EPA requirements that were instituted in 2010.

The models and engines are as follows:

Model	Engine	НР	Torque
GP15N			
GP18N	K21		
GP20N		53 @ 2,700 RPM	110 lb-ft @ 2,000 RPM
GP20CN			
GP25N			
GP28N	K25		
GP30N		61 @ 2,700 RPM	129 lb-ft @ 1,600 RPM
GP33N			
GP35N			

These engines are equipped with two computers, the Engine Control Module (ECM) which delivers a precisely calculated mixture of air and fuel to the cylinders of the engine, and the Vehicle Control Module (VCM) which controls the Engine Protection System (EPS).

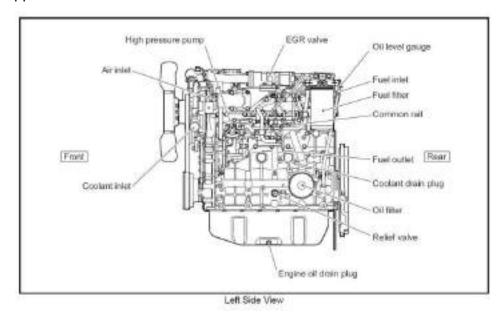
These engines use an overhead valve design in which a rocker shaft located in the cylinder block controls the valves and push rods transfer the movement to the valves. This design helps to reduce premature wear on the valve train. A velocity governor is pre-set at the factory to control engine speed and benefit by helping prevent the hydraulic pump and fan drive from being over-sped and providing controlled speed in applications that are high traffic or require limitations in operating speeds.

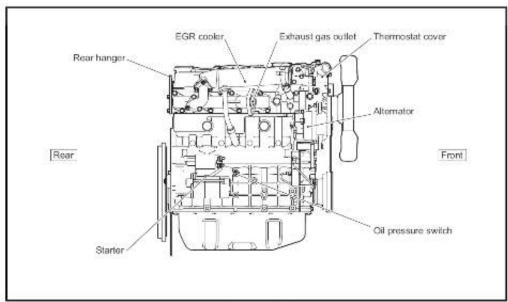
With these engines, there are three fuel configuration options... the end user can select the Gasoline, LP or dual fuel configuration. The dual fuel configuration includes a dash toggle switch that allows the user to switch between using gasoline or LP as the fuel source of the truck.



4EG Diesel Engine

These trucks are equipped with a tier 4 final, water cooled 4 stroke cycle diesel engine. The inline 4-cylinder 4EG uses a direct injection system with an overhead valve type mechanism. It is a 3.3L engine that has been tested to provide the performance and efficiency needed to provide productivity in even the harshest applications.



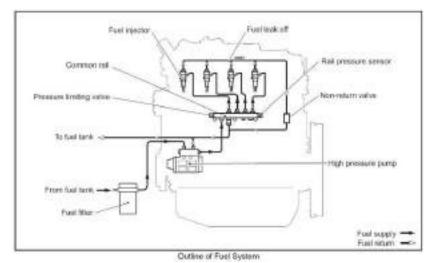


Right Side View



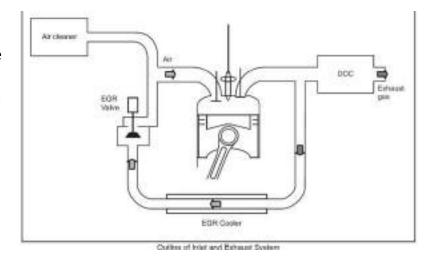
Emissions Compliant Fuel System

The fuel system of the truck is designed to meet stringent tier 4 final emissions standards. There are a number of ways that it is able to accomplish this without the use of a diesel particulate filter (DPF) or a selective catalyst reduction (SCR) system.



Common rail systems are a modern variant of direct fuel injection systems. The common rail, which can be seen near the center of this diagram is controlled by the ECM of the engine which opens each fuel injector in the given cylinder. This process helps to ensure that fuel/air mixture used for combustion in the engine is precisely tuned for minimal harmful emissions.

There are also two ways by which the exhaust of the engine is manipulated in order to minimize harmful emissions. The first is the utilization of a diesel oxidation catalyst (DOC). A diesel oxidation catalyst is a chamber through which exhaust leaving the truck will pass through. Whenever it does, the carbon monoxide, hydrocarbons and particulate matter (all harmful emissions) go through an oxidation process and are reduced to carbon dioxide and water, which are harmless.



The second way that exhaust is manipulated is that it is returned to the engine compartment for use in the combustion phase through a process called exhaust gas recirculation (EGR). As you can see in the diagram above, part of the engine exhaust is recirculated through a cooler, and then released through a valve to combine with air coming in from the air intake cleaner and is reused in the combustion process.



Powershift Transmission

The powershift transmission of the truck consists of one forward gears and one reverse gear. The changeover is accomplished with a powershift mechanism that employs hydraulically controlled multi-disc clutches. The transmission is equipped with a Power Take Off (PTO) that transmits power to the hydraulic pump and the parking brake circuit, without losing any power to the drive gear.

Clutch Drums



The transmission utilizes four hydraulically-actuated oil cooled clutch drum assemblies; two for forward direction, one for reverse, and one for the parking brake. They consist of six carbon fiber mating plates and five friction plates that transmit torque and motion from the input to the output shaft.

These drums help to dissipate frictional heat during normal operation.

Helical Gears

The angled teeth engage more gradually than common spur gear teeth, causing them to run more smoothly and quietly, as well as reducing stress from the high power transmission.





Transmission Control Valve

The flow to the clutch packs is controlled by a solenoid valve or an "electro-hydraulic shift" employed by the "drive by wire" system of the lift truck. The signal to this solenoid valve is controlled by the Vehicle Control Module of the truck, directing the truck to travel forward, in reverse, or disengage.

This transmission interlock is a key component to the PDS system because a signal will not be sent to engage the transmission unless the operator is properly seated in the truck.

Inching Valve

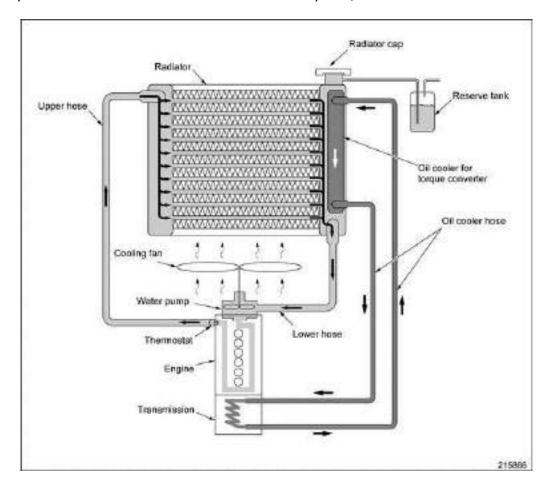


This valve controls the oil inflow to the clutch drum by the amount of force applied to the inching pedal. Half-clutch operation of the powershift transmission model is created as a result which allows the operator to "inch" while moving loads.



Transmission Oil Cooler

The transmission oil cooler is located in the radiator itself. The continuous circulation of the fluid allows for easy dissipation of the heat that can build in the clutch packs, which is transmitted into the radiator.



Torque Converter

The torque converter smoothly transfers the power from the engine and multiplies the torque sent to the transmission which can provide increased power on demand. These benefits are provided by the fluid connection of the converter, which is located between the engine and the transmission. It connects the engine flywheel to the transmission input shaft.



RELIABILITY

Durable Steel Frame

The robust steel frame of the truck is first designed using Finite Element Analysis (FEA) in which computers are able to model the truck frame and analyze where the stress will affect the frame the most whenever the truck is loaded. With the help of the FEA system, the frame is adjusted to help minimize, or in some cases, eliminate these stress points altogether so that whenever the frame is then built it is as strong as possible. More steel in the frame means more durability and a lower center of gravity which helps to provide higher residual capacity for the truck as well.





Mast and Carriage



The masts of these trucks incorporate modern engineering and design practices that allow them to provide the high rigidity, while maintaining excellent visibility. Engineers designed the masts to have more narrow flanges, in order to increase that visibility. To provide more strength however, they made the webs deeper and six load rollers provide more strength and support for forward and backward loading of the carriage, respectively. The specially shaped channels allow for the load rollers to contact them at two points, which increases the ability to handle side thrust forces between the mast channels. There are also two side thrust rollers to help maintain alignment with the mast.

If a tilt cylinder is not properly aligned, it can lead to eventual leaks and possible failure. Because of this, the cylinder rod ends mount to the mast of these trucks using spherical bushings which prevent misalignment. Each lift cylinder is also equipped with an internal drain that permits a controlled amount of hydraulic oil to flow above the piston, preventing corrosion of the cylinder rod.

Chains and hoses are canted at 45° so that the operator has a better view from their seat in a normal operating position. The diameter of the lift cylinders in the mast were also made smaller for visibility purposes as well.

The carriage was designed to increase visibility as well with square fork bars rather than rectangular, and more space in-between the fork bars.



Overhead Guard

The overhead guard of the truck is also designed using the Finite Element Analysis. The modern computational design process helps to ensure that the stress points on the overhead guard are kept to a minimum. The guard is one of the most vital parts of the truck whenever it comes to operator comfort and security because it encases the operator in the operator compartment. Because of this, it is imperative that it does not obstruct the vision of the operator during use of the truck. Keeping that in mind, the overhead guard was designed so that it does not use any



horizontal stability bars that might block vision when the operator is looking up at a load on his forks through the top of the overhead guard.

The overhead guard is also constructed using a welded, one-piece design instead of a bolt together system. Through rigorous testing, it was found that this helps to reduce wear down of the joints of the overhead guard over time and extensive use.



Low Profile Counterweight

The counterweight of the truck is a simple but crucial part of the integrity of the truck. It has many purposes and was designed specifically to best meet the needs of the truck.

- 1. Design provides for shorter turning radius (see specs)
- 2. Provides truck with maximum residual capacity due to strategic weight positioning
- 3. Provides housing for the muffler and radiator while providing airflow to the cooling system which is critical in high shuttle, dusty or dirty applications
- 4. Low profile allows for good visibility behind the truck from the operator compartment

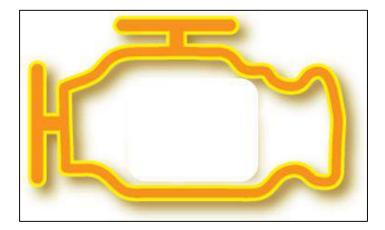




Engine Protection System

The Engine Protection System (EPS) is controlled by the Engine Control Module. It is invaluable, standard feature on Cat lift trucks because it immediately notifies the operator if there is a failure or something wrong with the way that the truck is running. The operator maintenance crews can quickly see to the issue reducing the chance for further damage to be done by continued usage, which immediately results in less downtime and cost of ownership on more expensive repairs. The EPS is capable of:

- Monitoring engine oil pressure, coolant temperature and transmission temperature
- Lowering max engine speed if coolant temperature reaches critical levels
- Slowing travel and hydraulic speeds if the truck is not performing at acceptable levels
- Notifying the operator of issues by way of display panel lights and diagnostic trouble codes (DTCs)



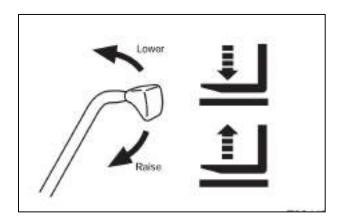


3-Section Hydraulic Control Valve with Cowl Mounted Levers

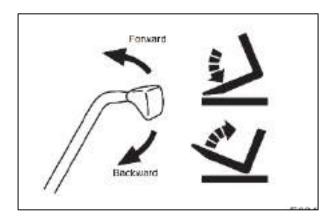
The standard configuration of the truck consists of three ergonomically shaped levers that are designed to match the natural swing of the arm of the operator. They are located in close proximity to the steering wheel so there is little movement required to move the right hand from the steering wheel while driving to the required lever. Each knob has a soft touch urethane cover for excellent grip.

As mentioned, there are three knobs, but in the standard configuration, only two are used, with the third lever available for use if there are added hydraulic functions or attachments.

The lever closest to the steering wheel is the lift lever. Lifting speed is controlled by the speed of the engine (position of the accelerator pedal) and the position of the lift lever and lowering speed is controlled only by the position of the lift lever regardless of engine speed. In order to lower the forks, the lever should be pushed forward (away from the operator) and to raise the forks, the lever should be pulled back (towards the operator). The lever will return to the neutral position when released.



The second lever is the tilt lever. The tilt speed is controlled by the speed of the engine (position of the accelerator pedal) and the position of the tilt lever. The lever will automatically return to the neutral position when released.



Both of the above levers can be directly affected by the mast interlock system. In order to deactivate the mast interlock system, the operator must sit on the operator seat while the key switch is in the (ON) position regardless of whether the engine is running or not, and then operate the tilt lever.



Vehicle Control Module

The Vehicle Control Module (VCM) is the computer of the truck that controls a number of input and output signals from the truck in order to make sure that everything is operating properly. It is easy to access and troubleshoot by way of laptop of your authorized Cat dealer's service technician. Below are the signals that the VCM can get through communication with the truck.

Principle Functions of the VCM			
No.	Item	Function	
1	Transmission Control	Power to the transmission forward and reverse solenoid is controlled by the Vehicle Control Manager (VCM) output according to the position of the FNR lever input to the VCM. When the operator leaves the normal operating position the VCM interrupts power output to the forward and reverse solenoid placing the transmission in the neutral position.	
2	Engine Control	Idle- up solenoid output is turned on to prevent engine stall when hydraulic pressure (main) exceeds preset level	
3	Ground Speed Control	Computes vehicle speed from vehicle pulse signal and transmits output	
4	Buzzer Output	Issues a buzzer control signal to the instrument panel when the seat belt is not fastened or operator leaves the normal operating position without applying parking brake.	
5	User Setting and Self-Diagnosis	VCM sensors input values can be checked.	
6	Fail-Safe and Error Archiving	When a fault is detected in the VCM itself or any peripheral device, the VCM takes appropriate action. An error due to a detected fault is indicated through the warning lamp in the controller etc. and recorded in the EEPROM with hour meter reading at the same time. The error is also communicated to a possible connected laptop of the dealer's service technician.	
7	Diagnostic Software	When the diagnostic software tool is connected by the authorized dealer, sensor signal status and past errors archived in the EEPROM can be monitored. Also, optional functions and various parameters can be monitored.	
8	Inter-Controller Communicator	CAN communication exchange of sensor signals, control signals, fault information, etc. is possible with instrument panel and other devices throughout the truck.	



Electrical System

These trucks operate using a 12V electrical system. The battery is maintenance free and is conveniently located on the left hand side of the chassis along with the relays and fuses. The fuses that are used are automotive style standard fuse that are grouped and conveniently located in boxes in close proximity to the battery and have labels for each fuse underneath the cover of the fuse box.







Hydraulic System

The hydraulic system works in such a way that it sucks up hydraulic oil from the hydraulic tank and distributes pressurized oil to work equipment and the steering system with the priority valve.

Pressurized oil is fed to each cylinder through the control valve of the system.

Hydraulic Tank

The hydraulic tank is located in the middle of the right side of the frame of the truck and is part of the frame structure itself. There are three pipes that are welded onto the tank cover, which are the suction pipe, pipe for the return line and the pipe for level gauge. At the top of each of these three pipes are a suction strainer, return filter, level gauge and a cap. This is done so that the parts of the tank can be removed as an assembly if the tank cover is removed.

Main Components 5 Terk cover 1 Hydrautic fane. 5 Section steamer Return titler J Cap Ports welded to tank on 5 Hydraulic pump 3 Element (a) Suction place 4 Levelgauge 9 Party suction line (b) Pipe for seturn kee 10 Party delivers line (b) Pipe for level out 11 Omin plug

The filter can be replaced or the strainer cleaned easily once the tank cover is removed.

The hydraulic tank cap has two air holes that serve as a vent for the air trapped inside the tank, which will fluctuate depending on the level of oil. There is also a filter element installed in the cap to serve as an air filter to prevent debris from entering the tank.



At the end of the return pipe is a return filter which is a cartridge type of 15 μ m with a built in relief valve. When that filter is clogged, the relief valve activates to divert unfiltered oil into the tank. Periodic replacement is needed.

Oil filter replacement is recommended once a month after the purchase of the lift truck or after conducting a major overhaul that includes replacing parts. The suction strainer is 100 mesh screen gauze and should be cleaned at every oil replacement.

There is also a drain plug at the bottom of the tank.



Gear Pump

The gear pump is a circumscribed gear pump that sends the hydraulic oil required to activate the hydraulic cylinder.

Priority Valve

Of the working oil that is discharged from the gear pump, only the amount that is required for steering operation is supplied to the steering control valve. The rest is forwarded for use by other equipment.

Whenever the truck is in neutral, almost all of the work of the fluid is routed to the other equipment mentioned above.

Hydraulic Control Valve

The hydraulic control valves of the standard truck move mechanically. When one of the control levers is operated, the spool valve starts to move up and down and exchanges pressure oils with the corresponding hydraulic cylinders.

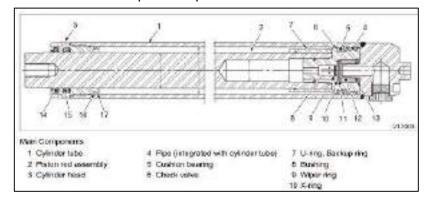
If a truck is equipped with fingertip controls, the hydraulic control is a solenoid valve. As the valve spools move in proportion to control input of the FC control box operated by the operator, the controller and electromagnetic proportional pressure control valve are used.

Because it is a sectioned valve, it is easy to upgrade to allow for more auxiliary functions. The most basic valve is a 3 section valve, which would consist of the tilt, lift, and one auxiliary function. All trucks come standard with these three basic functions. It is also possible to create a 4-way, or 5-way valve by adding the appropriate attachment valves and associated parts.

Lift Cylinders

Second Lift Cylinder For Simplex and Triplex Mast-

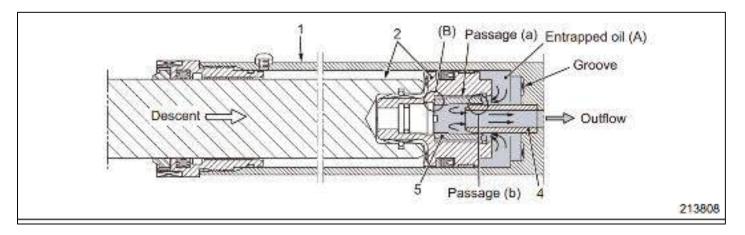
This lift cylinder has a check valve in the piston instead of a return pipe and is called an internal drain type cylinder. The bottom of the piston is provided with a cushion mechanism for soft landing.





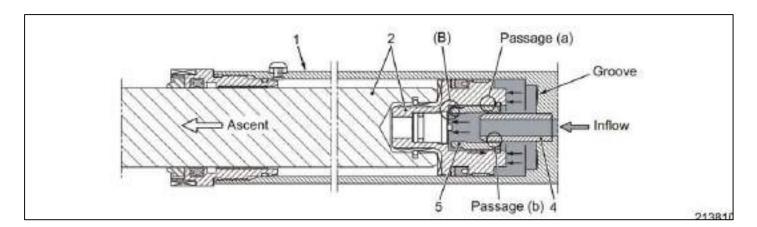
Action During Piston Descent -

The picture below shows a condition in which the piston rod assembly (2) is descending. The cushion bearing (5) is pushed upward by entrapped oil(A) and the piston and cushion bearing make surface contact (B). This blocks passage A in the diagram. The only outflow passage for entrapped oil is clearance (b) between the cushion bearing and the outside of the pipe. This passage (b) becomes narrower as the piston descends further. Therefore, the descending speed of the piston becomes gradually slower and impulsive contact is avoided.



Action During Initial Stage of Piston Ascent -

The illustration below shows what happens to the piston immediately after the assembly ascends. Oil that flows in acts on the center of the piston rod assembly slightly. At the same time, the cushion bearing (5) descends by being pushing by the inflowing oil. This action opens up area (B) causing passage (a) to open. Oil from passage (a) and passage (b) which open from the beginning, flow in the piston bottom, acting on the entire bottom surface of the piston and pushing the assembly upward.

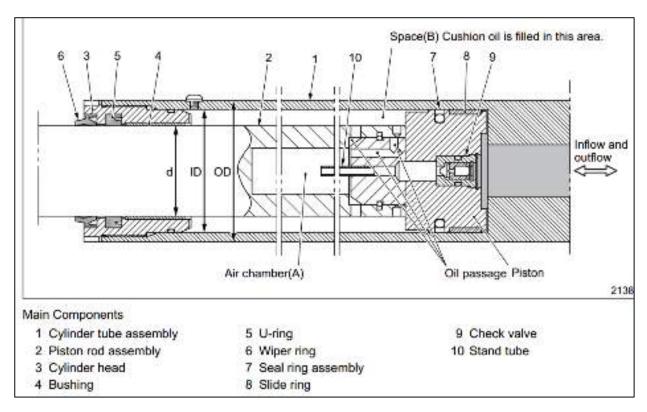




This cylinder is mounted on the center of the mast and is the first to act during the ascending stroke of the forks. The piston rod extends from the cylinder tube by pressure oil acting on the piston bottom.

For prevention of an impulsive approach of the piston and the cylinder head at the last stage of its ascent, cushion oil is always filled in space (B) between the cylinder tube and the piston rod. When the piston rod ascends, it ascends while pushing out cushion oil out to air chamber A at its last stage. This is how the last stage becomes smooth.

In the descending stroke of the piston rod, cushion oil in air chamber A is sucked into space B. The air chamber, stand tube and check valve are all involved in the cushioning action. Extra oil which leaks from around the piston and enters space B returns from the stand tube (10) to the cylinder bottom by way of the check valve (9) at the last stage of the cylinder's ascension. The stand tube always retains a certain amount of oil as cushion oil.





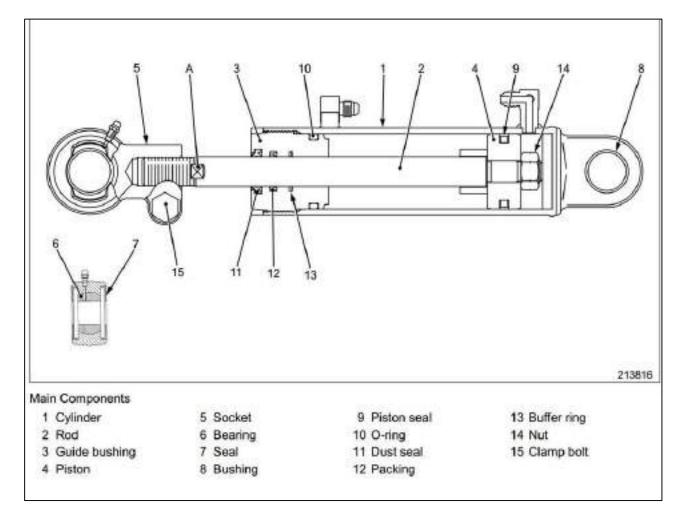
Flow Regulator Valve (For trucks with Fingertip Control Valve Only)

This is an adjustable valve that is located between the lift cylinders and the lift control valve. Its purpose is to limit the amount of return hydraulic fluid that is allowed to flow. The valve can be adjusted by an authorized service technician with an easily reachable screw on the valve. The end user is thus able to customize the lowering speed of the truck based on application if necessary.

Flow regulator valve should **NEVER** be adjusted to allow the forks to lower faster than the standard factory setting (which is the industry standard). This adjustment should only be made by an authorized Cat lift trucks dealer.

Tilt Cylinder

The tilt cylinder is a double action type and has the rod end threaded for adjusting the balance between the right and left sides when the mast is mounted. The tilt angle can be modified with an optional adjustment of the collar and socket.





Air Intake Process

The air intake is vital to the performance and efficiency of the engine as contaminated air will rob power and eventually damage an engine causing extremely costly repairs. Because of this, great attention was paid to provide the engine with clean air, free of debris with the system used.

The air intake vents were positioned high on the rear overhead guard levels in an attempt to reduce the potential for contaminants like dust and debris kicked up from the ground to enter the system.





Once the air enters the truck, it then travels through the second step of the air intake process, which is the air cleaner located on the right side of the engine compartment. Vanes around the filter element create a cyclone effect causing the larger dust particles to drop to the bottom of the air cleaner canister. Then, a dry paper element filters the remaining, finer particles from the air. This element is easily replaceable without the use of any tools.



Drive Axle

The drive axle on these trucks is the front axle. Designed for durability, it is a full-floating, banjo shaped design that can carry more weight than a semi-floating or non-floating axle assembly because the hubs have two bearings riding on a fixed spindle. The axle shaft itself does not carry any weight; it serves only to transmit torque from the differential to the wheels.





Steer Axle

The steer axle of the truck is one solid unit, which gives it superior strength and rigidity. It allows the truck to perform in the most strenuous environments because the solid steel unit withstands the stress that is exerted on the axle and the chassis of the truck. The design makes it extremely suitable as a connection piece between the two knuckles and the steering cylinder.

Hydrostatic Power Steering System

Directly related to the steer axle housing unit, the hydrostatic steering system is powered by hydraulic oil flow, which minimizes the effort needed for the operator to easily and smoothly steer the truck. Any kickback from the steer wheels into the steering wheel is eliminated by the system. It also removes the need for any mechanical linkage in the steering process which lowers the amount of maintenance needed. The precise steering control of the truck allows the operator to easily turn the steering wheel regardless of truck speed which aids with control and maneuverability in various scenarios and applications.



When the steering wheel is turned, hydraulic oil flows into a small oil pump inside the steering valve. At the core of the pump is a pump rotor called a "gerotor" which rotates coaxially with the steering wheel. Because of this, when the steering wheel is turned, the pump rotor also turns, which delivers pressure oil from the left or right port of the steering valve to the steering cylinder. At the same time, the steering cylinder return passage to the hydraulic control valve is opened to allow return flow. As this pressure and return oil flows back and forth from one side to another, the steering cylinder rod extends to the right or left, which activates the tie rod to turn the knuckle, which turns the rear wheels of the truck and alters the direction of travel.

The Kingpin layout of the hydrostatic steering is supported by needle bearings and a thrust bearing. Each of these has a function as the needle bearings are capable of handling radial forces (forces incurred when turning), and the thrust bearing helps to handle the axial forces (forces caused by the weight of the truck). It is an easy system to maintain as there is no special tooling required to pre-load the bearings. The Kingpin does require greasing as it helps to reduce the risk of premature wear by water and dust.

The steering control valve is also equipped with a solenoid valve that compensates deviation of the steering wheel knob position from the correct forward drive position. Whenever there is a difference, the valve is opened to allow drainage of some part of the supplied oil to return it to a correct forward drive position.



Cooling System

One of the biggest challenges with internal combustion lift trucks is making sure that the engine stays cool. These trucks are equipped with a corrugated, aluminum core radiator that provides excellent cooling because of the large surface area exposed on the fins.

As mentioned above, the core of the radiator is aluminum which horizontal flow. This aluminum core is more resistant to galvanic corrosion in the cooling system. It has also proven over time that it is more effective at transferring heat than traditional copper or brass radiators.

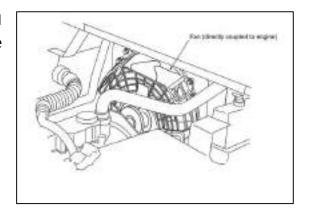
The side tanks of the radiator are plastic. One of these tanks includes a heat exchange unit for the powershift transmission.



Cooling Fan

The truck is equipped with a pusher that is directly coupled to the engine itself. Its purpose is to pull air from under the truck and out of the back of the counterweight helping to keep constant airflow through the engine compartment.

The fan is also covered with a plastic guard for safety reasons and to help minimize the chances of large debris from becoming tangled in the fan itself.





Two Pedal Brake System

Located directly to the left of the accelerator pedal of the truck are two brake pedals that activate the dual brake pedal system. One is a standard brake pedal (it is the middle pedal) and the inching pedal (on the far left) is intended to allow the operator to apply the brake without disengaging the transmission while using hydraulic functions. Remember, as mentioned in the hydraulic system section, some functions (lift, tilt forward and backwards) are directly affected by not only the lever being activated, but also by the engine output affected by the accelerator pedal.

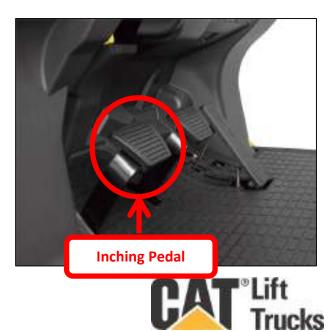
The brake assembly is a large 12.2 inch (10 inch on GP15N-GP20CN) for high lining to drum contact area. The brake shoes are made of non-asbestos material with very good cold and warm frictional characteristics. This is to help ensure consistent brake feel throughout the shift. Whenever the brakes are applied, a self- energizing mechanism transfers turning force from the leading shoe to the training shoe. This presses both shoes against the drum with greater strength and provides more breaking force. The self-energizing shoes help reduce the amount of force needed to be applied to the pedal, which can help reduce the amount of operator fatigue over the course of a shift.

When travelling in reverse, there is a self-adjusting mechanism as well that is activated. As the clearance between the shoes and the drum increases, an adjustment screw is turned one notch by the lever of the adjuster to reposition the shoes closer to the drum.

Inching Pedal

As mentioned before, the inching pedal is to the left of the standard brake pedal. It simultaneously applies the brakes without disengaging the transmission. It does this by disengaging the clutch, or "inching" by letting the clutch slip as the brakes are released. This can give advantages such as slow, controlled acceleration where it is needed most, such as when working on a grade or in tight areas that require high maneuverability.

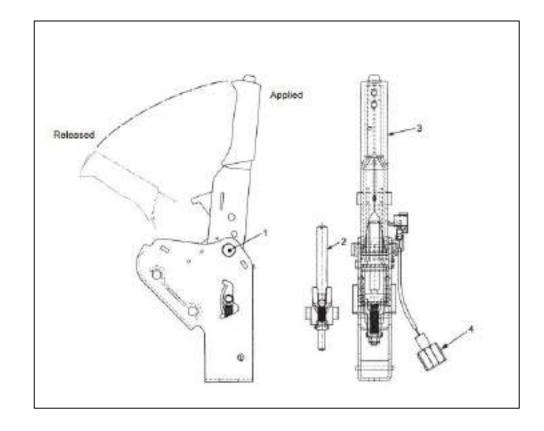
*It is important to note that if the inching pedal is continuously ridden while travelling, there will be damage to the transmission and/or premature wear of brake components.



Parking Brake System

The parking brake lever is conveniently located to the left of the steering column. It is a dual action parking brake, which means that the operator must depress the button on top of the lever in order to release the brake. This helps minimize the chances that the operator might accidentally release the brake unintentionally. There is also a sensor in the parking brake that communicates with the PDS system.







Tires

This family of trucks comes standard with air filled pneumatic tires. They provide good traction and added operator comfort by cushioning the overall ride for the operator. The only exception to this is the 2 ton compact model (GP20CN) that comes standard with solid pneumatics. Solid pneumatics for the rest of the lineup are available as optional upgrades.



	Tire Size				
Models	Drive Tires	Steer Tires			
GP15N-GP18N	6.5x10-10PR	5.0x8-8PR			
GP20CN (Solid Pneumatics Standard)	6.5x10/5.00	6.0x9-10PR			
GP20N-GP25N	7.0x12-14PR	6.0x9-10PR			
GP28N-GP30N	28x15-14PR	6.5x10-10PR			
GP33N-GP35N	250x15-16PR	6.5x10-12PR			



Easy Maintenance

These trucks are designed to perform with maximum productivity and efficiency for the end user. In order to accomplish this, it is important that the truck is given every opportunity to do so. To ensure this peak performance, as with any machine, maintenance is a vital step. These trucks are designed to allow for regular maintenance to be completed with relative ease minimizing down time and saving the owner money.

- Daily Checks Daily checks are made that much easier and less time consuming because of the
 ease of gaining access to all of the major components of the truck. The engine cover opens wide
 and allows access to check fluid levels and carry out the visual inspections needed before the daily
 shift.
 - 1. Move the steering column using the yellow lever on the left of the column.
 - 2. Move the seat forward as far as possible and fold the seat down using the spring-loaded locking pin located near the left side hip restraint. NOTE: It is not necessary to fold down the seat on diesel and gasoline models (unless they are equipped with a cab) because there is no obstruction by way of propane tank.



- 3. Raise the engine cover by pulling the latch located on the front left side of the cover. A single gas-assisted spring permits the cover to be raised with minimal effort and keeps it in a raised position.
- 4. For even more access, there are NO TOOLS REQUIRED to remove the floor plate and the steel side covers. They can be quickly and easily removed and replaced if needed.
- 5. The brake master cylinder reservoir is made of translucent molded plastic which makes it possible to verify fluid levels with a quick visual check.
- 6. These trucks use fuses that are easily accessible. Inside the fuse box, there is also a tool to remove them as well as a labeled guide with an explanation of the function of each fuse.



500 Hour Service Intervals

Extended service intervals mean that this truck will have less down time and less money spent on the planned maintenance of the truck over its lifetime.

* This may vary based on application.



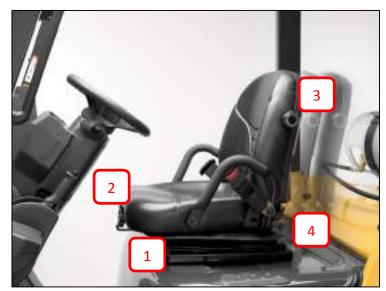
Preventative Maintenance Interval	Number of Preventative Maintenance Sessions	Labor @ \$80	Parts @ \$20	Estimated Total Preventative Maintenance Expense
200	50	\$4,000	\$1,000	\$5,000
250	40	\$3,200	\$800	\$4,000
500	20	\$1,600	\$400	\$2,000

SUPERIOR OPERATOR COMFORT

Full Suspension Vinyl Seat

The standard vinyl seat* for this model provides adjustment in numerous planes to allow the operator to put himself in an extremely comfortable position.

- Front and Back Adjustment Lever positioned on the front right side of the seat can adjust the seat forward and backwards up to 6.5" to accommodate operators at various heights
- 2. Suspension Adjustment Knob located on the front of the seat can be turned (clockwise to increase support, counterclockwise to decrease support) to adjust the suspension of the seat



- 3. **Lumbar Support Adjustment** Knob on the left side of the seat can adjust the lumbar support to the preference of the operator
- 4. **Fold Down Pin** Pin located on the left side of the seat just to the rear of the steel wrapped hip restraint allows the seat to fold down

Orange Seatbelt

The **standard orange seat belt** allows for easier visible confirmation that the belt is being used properly during operation of the truck.



^{*}Seat shown in picture is cloth version of standard seat.

Noise Reduction Features

There are a number of standard features that are built into the truck that limit noise and vibration. This helps to keep the operator comfortable, thus increasing his efficiency and output. They include:

- 1. Rubber mounted key components isolate noise and vibration transfer to the steel frame
 - a. Hydraulic control valves, transmission, engine, radiator, exhaust system, and secondary lift cylinders on the mast
- 2. Fully insulated steel engine hood limits the amount of noise and vibration directly under the operators compartment
- 3. Helical transmission gears reduce drivetrain noise
- 4. Closed wheel wells reduce noise from the engine
- 5. Hydraulic accumulator in the transmission control valve promotes smooth shifts and direction changes up to 2.5 mph, reducing shocks in the powertrain



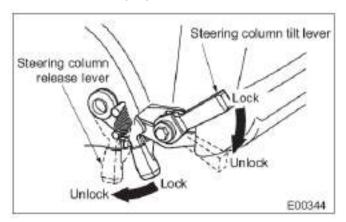


Tilt Steer Column with Mechanical Quick Return

The tilt steering column is equipped with a two lever system that is designed to adjust and lock with a wide range. The forward position allows for extra clearance when opening and closing the engine cover. After daily inspections (or any other reason to open the hood), the operator can return the steering column to the pre-set position customized to their comfort level using the "memory" function.

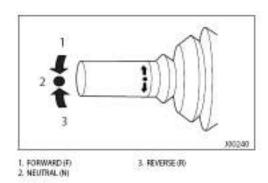
- 1. Black release lever provides desired position within 12° to be locked (pull down to position, push up to lock
- 2. Yellow release lever allows column to move 13° forward (lift)





Electronic Direction Control

The electronic directional control lever on the left side of the steering column allows the operator to easily shift between forward and reverse travel without ever having to lose contact with the steering wheel. A change in direction is as simple as a flick of the finger.







Three Point Entry System

The three-point entry system of all Cat lift trucks IC sit down forklifts allows the user to easily access the operator's compartment. The driver of the lift truck can be in and out with little effort and a consistent method of entry and exit that is more conducive to productivity.

1. Elongated Grab Bar

- a. 18" long to allow easy reachability for operators of all heights
- b. Mounted inside operator compartment to reduce chance of damage

2. Low Entry Step with Anti-slip Step Plates

- a. Open step frame allows for easy entry
- b. Natural step height provides a proper step-up and step-down



3. Wrapped Steel Hip Restraint

- a. Offers third point of contact for secure entry/exit while climbing into truck
- b. Provides multiple points to hold onto while climbing into truck

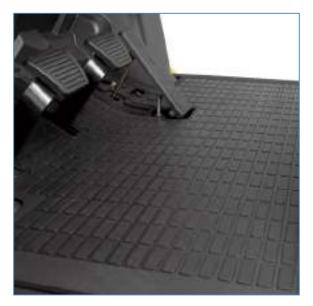








Floor Mat



The raised, 4 mm thick floor mat of the truck is designed to provide traction in the operator's compartment and channels water or any other spills away from the feet of the user. It also is one of the many features that help to isolate the vibration and noise of the truck.

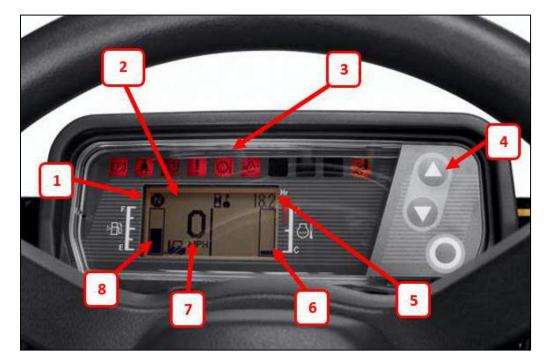


INCREASED OPERATOR AWARENESS

Premium LCD/LED Display Panel

The light emitting diode (LED) and liquid crystal display (LCD) meter panel provides a number of important indicator lights and information to the operator. These indicators are crucial to the operator whenever it comes to knowing how the truck is currently running (speedometer, travel direction indicator, etc.), what problems need to be addressed with the truck (maintenance requirement indicator icons), and general reference points (fuel level indicator and clock).

- 1. Travel Direction
- 2. Service Interval
- Warning Icons (See Next Page)
- 4. Operator Button
- Clock Time/ Hour Meter
- 6. Water Temperature Gauge
- 7. Speedometer
- 8. Fuel Gauge





Meter Panel Indicator Lights

Symbol	Name	Illuminated Condition and Models Applicable*
₽₩	Low Coolant Level Warning	When coolant level is low. (Optional)
<u>Z</u>	Clogged Air Cleaner Element Warning	When air cleaner is clogging. (Optional)
B	Low Fuel Level Warning	When diesel levels are low.
(P)	Parking Brake Warning/Brake Fluid Level Warning	When parking brake is activated/ When brake fluid is low.
	Seat Belt Warning	When seat belt is not fastened.
==	Battery Charge Warning	When battery charging system is not working properly.
!	Multi-Purpose Warning	When a minor fault occurs or operating cautions are being issued.
ା	Torque Converter Fluid Temperature Warning	When torque convertor fluid temperature is not normal. (Only available on models with ProShift®)
∞	Low Engine Oil Pressure Warning	When engine oil pressure is low.
	Engine Warning (Check)	When the engine has experienced a fault.
*	ProShift [®]	When protective function against sudden travelling direction change is activated. (Optional)
	Mast Interlock Indicator	When PDS is activated.



Mast Visibility

Narrow mast channels provide the large window of vision for the operator while in normal operating position. The 3° canted rollers provide stability of the load on these narrower mast channels. The cross members of the truck are designed to make sure that the operator has good visibility through the mast. The carriage is designed with square fork bars instead of rectangular ones, providing more space, and therefore more visibility, between the bars.





LED Forward Work Lights

Light emitting diode (LED) work lights are mounted on the mast of the truck. LED lamps provide the truck with the latest development in light technology. Benefits of the LED lamps include brighter light, longer life, and a cooler light source than traditional bulbs used by forklift manufacturers. There is no filament in these lights which eliminates the typical weak point of ordinary lamp breakage.

The vertical pattern of the light emission projects where the operator needs it; illuminating the forks of the truck as well as the racks in front of the truck. The LED light also minimizes glare off of the mast.

The standard lights of this series of trucks further minimize cost of ownership in a number of ways:

- Longer bulb life
- Durable aluminum die cast housing minimizes damage
- Steel outer guard to protect entire housing
- Coverage under the standard warranty terms of the truck

Rear Combination LED Lights

Rear combination LED stop/tail/backup lights and turn signals come included with the standard offering of this truck. They are located on rear of the overhead guard and help to inform pedestrians and the other operators what the current and intended movements of the lift truck are.





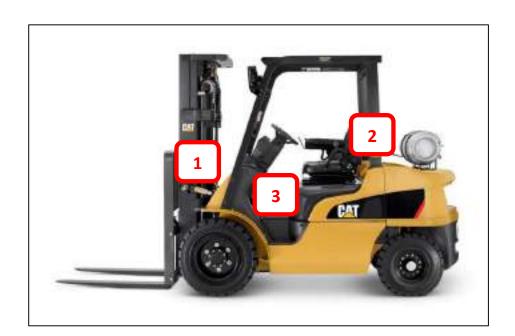


ADDED OPERATOR PROTECTION

Presence Detection System (PDS)

Cat Lift Trucks has a PDS system that is equipped with an integral computer-based feedback system. This system was introduced as the industry's first in 2004 and remains the premier presence detection system. It is activated whenever the operator does not fasten their seat belt during operation or exits the truck without activating the parking brake. It uses visual and audible cues to notify the operator if they are not in the normal operating position with seat beat fastened:

- 1. Electronically stops powered travel movement of the truck (transmission) and stops activation of load handling functions (hydraulics)
- 2. Seat belt warning indicator (both buzzer and icon)
- 3. Parking brake reminder (both buzzer and icon)







Parking Brake

The parking brake of the truck is a dual action lever that is located to the left of the steering column on the dash. The operator must press the button at the top of the lever in order to release the parking brake in order to move the truck. As noted above in the PDS section, an alarm will sound if the operator has left the normal operating position without setting it.



Ground Speed Control

The ground speed control feature allows the truck's top travel speed to be set at one of four options: 5.5 mph, 6.5 mph, 7.5 mph or 8.5 mph. Software and sensors limit the max travel speed of the truck without limiting lift performance. This could be helpful in areas where lift trucks and pedestrians work in close proximity, where fragile materials are handled or in locations where stricter policies are being enforced.

Electronic Backup Alarm

This family of trucks comes standard with an electronic backup alarm that sounds any time the truck is in reverse. This allows pedestrians who are working within close proximity of the lift truck to know that it is the intention of the operator to move backwards, and react accordingly if necessary.



OPTIONS

Custom Shop Modifications (CSMs)

The following section of this manual will describe the options that are immediately available by way of the price pages, but we certainly understand that there are a number of other options that a customer might need for their specific application that are not listed. This does not, by any means, mean that the needs of the customer cannot be accommodated. For any option that you cannot find in the price pages, you will need to submit a CSM request that will go directly to our engineering department that specializes in providing the solutions to the customers in option form. This department will gladly help to determine pricing and availability, as these specialized options will take some time to design and implement. Many times, however, there is a good chance that they have done something in the past that might be able to help you and your customer.

In the LiftNet 2.0 quoting tool, you will see some "SPI" part numbers that you can select. "SPI"s are previous CSM parts that have been built into the system for your convenience in ordering. There is also a spreadsheet that is on the portal of "SPI"s from the past that you can search through to find a price for the option that your customer needs.

Fork Options

Order Code

DP100N-DP160N	Description
Reference the Price Pages for the complete listing of forks styles and par	t numbers available.

Description

Hook and shaft type forks are available for order in various sizes.

Lumber forks are thinner than most forks and allow the operator to pick up stacked product easier. Different fork sizes might be needed for different kinds of material handling



UL Safety Rated Chassis Options

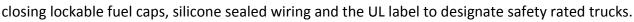
Order Code

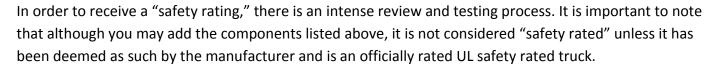
GP15N-GP35N/DP20N-DP35N	Description
ULGSP15I	UL Rated Gas
ULLPSP15I	UL Rated LPS
ULDSP15I	UL Rated Diesel

Description

For applications that require safety rated chassis, these model families are available with a UL safety rated chassis designation. These chassis are designated with an "S" in their nomenclature (LES,DS, GES) and include certain standard components that are replaced with specifically designed components that help reduce the possibility of spark ignition. Battery disconnect switches, sealed wiring connectors and additional labels are added to aid the operator in applications that might require this kind of upgrade.

Componentry changes include an enclosed alternator, spark resistant muffler, battery disconnect switch, self





While the LP, Gas and diesel options are available through the price pages, there is no dual fuel configuration that is listed in the price pages. It is available however through CSM.





Applications where this might be common include chemical and chemical processing, petroleum processing, fine dust (paper) and any application where spark ignition could pose a problem. Refer to Powered Industrial Trucks, Type designations, Areas of Use, Maintenance and operations, NFPA 505. The chart below can be used in reference to applications in which safety rated trucks might be needed.

0	CI	NG		Usame.	Sungares V			Lancas a	2020/03/00/0		Gas	oline	LP	Gas
	0/75/4703	ered			Powered		446		Powered		10000	rered		berev
Locations	CN	CNS	D	DS	DY	DX	E	ES	EE	EX	G	GS	LP	LPS
Class I,														
Division 1														
Group A	NA	NA	NA.	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA	NA
Group B	NA	NA	NA	NA	NA.	NA.	NA.	NA.	NA	NA	NA	NA.	NA.	NA
Group C	NA	NA.	NA.	NA	NA	NA	NA	NA	NA.	NA	NA	NA	NA.	NA
Group D	NA	NA	NA:	NA	NA	A	NA	NA	NA.	A	NA	NA.	NA.	NA
Class I, Division 2	2550	200		28.00	0.5	Option	2000				0.000		2000	
Group A	NA	NA:	NA.	NA	PC 24	K	NA	NA.	K	IC.	NA	NA	NA.	NA
Group B	NA.	K	NA	K	K	K	NA	K	K	K	NA.	K	NA.	K
Group C	NA	K	NA:	K	K	K	NA	K	K	K	NA	K	NA	K
Group D	NA	J	NA	J	Α	Α	NA	J	Α	Α	NA:	٦	NA	J
Class II.														
Division 1														
Group E	NA	NA	NA.	NA	NA	J	NA.	NA.	NA.	J.	NA.	NA	NA.	NA
Group F	NA.	NA.	NA.	NA	NA.	A	NA.	NA.	NA.	A	NA.	NA.	NA.	NA
Group G	NA	NA	NA	NA	NA	Α.	. NA	NA	NA	A	NA	NA.	NA	NA
Class II, Division 2														
Group F	NA.	- J	NA.		A	A	NA.	J.	A	A	NA	J	NA	- 1
Group G	NA	J	NA.	J	А	A	NA	J	A	A	NA	J	NA	J
Class III.														
Division 1	NA	7	NA	J	A	A	NA	J	Α	А	NA	J	NA	J
Class III.	100								100.00			200		
Division 2	NA	A	NA	A	Α	A	J.	A	Α	Α	A	A	A	Α
Ordinary														
(Unclassified)	A	Α	A	A	Α	Α	A	A	Α	Α	A	Α	A	A
Notes														
A=Type truck au J=Type truck au K=Type truck au NA=Type truck au	thorized for	or locatio o be dete	n descr rmined	by the at	uthority t				urisdiction	•				



Optional Wide Carriages

Order Code

GP20N-GP25N/DP20N- DP25N	GP28N-GP35N/DP25N- DP35N	Description
CARR55P25I		55" Wide ITA Class II Hook Type Carriage
	CARR59P30I	59" Wide ITA Class III Hook Type Carriage

Description

These trucks can be fitted with optional wide carriages in order to accommodate the various attachments that an application might require. All carriage widths include a 48" high load backrest. When installing attachments with optional width carriages, be sure to verify compatibility between the attachment and the carriage. Please note that:

- These carriages are NOT AVAILABLE with quad masts.
- Make sure to add 1" to carriage and/or attachment width when determining width over the load backrest



Sideshifters

Order Code

GP15N-GP20CN	GP25N-GP28N/DP25N- DP28N	GP28N-GP35N/DP28N- DP35N	Description
ISS36P15I			36" Wide ITA Class II Integral Sideshifter
	ISS39P25I		39.5" Wide ITA Class II Integral Sideshifter
		ISS39P30I	39.5" Wide ITA Class III Integral Sideshifter
	ISS55P25I		55" Wide ITA Class II Integral Sideshifter
		ISS59P30I	55"Wide ITA Class III Integral Sideshifter
SSHO36P15I			36" Wide ITA Class II Hang-On Sideshifter
	SSHO39P25I		39.5" Wide ITA Class II Hang-On Sideshifter
		SSHO39P30I	39.5" Wide ITA Class III Hang-On Sideshifter

Description

Neither type of side shifter is compatible with quad mast options. Both require single function internal hosing at a minimum.

When the integral carriage options are ordered, they replace the standard carriage that is on the mast.

The hang-on sideshifters mount to the standard carriage on the mast of the truck and are not compatible with optional wide carriages.



3- & 4- Section Control Valves with Levers and Fingertip Control Options

Order Code

GP15N-GP35N/DP20N-DP35N	GP15N-GP35N/DP20N- DP35N (Fingertip Controls)	Description
VLV3-STD	HVLV3FCP15I	3 section control valve
VLV4P15I	HVLV4FCP15I	4 section control valve

Description

In the standard configuration, the standard relief valve for lift, tilt and 3rd section is set at 2,650 psi. When ordering the 4-section control valve with cowl mounted levers, the 3rd and 4th sections are set at 2,250 psi.



The addition of the fingertip control armrest is preferred by some customers as it provides an ergonomic armrest and the ability to control the hydraulic functions of the truck with the ease of one's fingertips, but it is important to know the requirements and limitations of some other options when ordering fingertip controls.

- On the 3,000 lb. to 4,000 lb. compact models, fingertip controls require a swing down LP tank bracket on dual fuel or LP chassis, because of interference with the LP tank whenever the hood is opened. The fire extinguisher option is also not available with fingertip controls on this sized chassis for similar reasons.
- Fingertip controls in general ARE NOT for use with the following options: UL safety rated trucks, swivel seat, enclosed cabin, operator convenience tray, accumulator or enclosed cab options.
- Fingertip controls require a full suspension seat.



Single Function Internal Hosing

Order Code

GP15N-GP35N/DP20N-DP35N	Description
3VSIMP15I	For use with simplex masts
3VDUPP15I	For use with duplex masts
3VTRIP15I	For use with triplex masts
TC3VQUAP15I	For use with quad masts

Description

Single function internal hosing is required for some options and includes one pair of #6 hoses and fittings that terminate at the back of the carriage bottom plate.

Dual Function Internal Hosing

Order Code

GP15N-GP35N/DP20N-DP35N	Description
4VSIMP15I	For use with simplex masts
4VDUPP15I	For use with duplex masts
4VTRIP15I	For use with triplex masts
TC4VQUAP15I	For use with quad masts

Description

Single function internal hosing is required for some options and includes one pair of #6 hoses and fittings that terminate at the back of the carriage bottom plate. It requires 4-section valve at a minimum.



Hydraulic Steel Supply Lines

Order Code

GP15N-GP35N/DP20N-DP35N	Description
SFSSL3P15I	Single function steel supply lines
SFSSL4P15I	Single function steel supply lines – 4 way valve
DFSSL4P15I	Dual Function Steel Supply Lines

Description

These steel supply lines replace the normal supply lines of hydraulic fluid to attachments.

The first option above (SFSSL3P15I) is for use with single function, carriage mounted hydraulic attachments. The line terminates at the right hand side of the carriage top plate. These ARE NOT for use with factory-installed sideshifters or optional carriage widths.

The second option above (SFSSL4P15I) is for use with a single function, sideshifter mounted attachment and the line terminates in the same place, at the right hand side of the carriage top plate.

The third option above (DFSSL4P15I) is for use with dual function, carriage mounted hydraulic attachments. The 3^{rd} function line terminates at the right hand side of the carriage top plate and the 4^{th} function line terminates at the left hand side of the carriage top plate. This option is NOT for use with the factory ordered sideshifter either.



Hydraulic Lift Line Accumulator

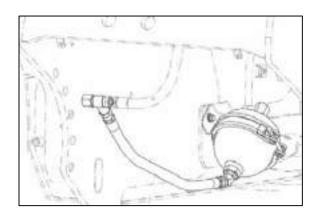
Order Code

GP15N-GP35N/DP20N-DP35N	Description
TC-1060I	Hydraulic Lift Line Accumulator

Description

This 1 Liter diaphragm type lift line accumulator helps to provide shock dampening to the load and front end components of the truck. It should be offered and considered for applications in which the loads tend to be fragile or there is potential from damaging during hydraulic activity of the truck.

This option is NOT for use with fingertip control options.





Load Bearing Clamp Lockout

Order Code

GP15N-GP35N/DP20N-DP35N	Description
TC-7100I	Load Bearing Clamp Lockout

Description

This option requires the operator to depress a button that is on the side of one of the cowl mounted levers in conjunction with the rearward movement of the lever in order to unclamp a load with clamp attachments. It is required for all trucks with clamp attachments to have this option to remain in compliance with ANSI B56 Standards.





Bottler's Tilt

Order Code

GP15N-GP35N/DP20N-DP35N	Description
BTLTP15I	9° Forward/6° Backward Bottler's Tilt

Description

This is an option that is referred to as "Bottler's Tilt" for its common existence in the beverage industry. The reason for this customization is that many times the pallets in the beverage industry are kept in a rack or in trucks that require the mast to tilt forward more in order to get them out of the racks. If the customer is in the beverage industry, this is something to offer.



Tilt Cylinder Boot Kit

Order Code

GP15N-GP35N/DP20N-DP35N	Description
BOOTTLTP15I	Covers for tilt cylinders

Description

Tilt cylinder boots are an accordion-like rubber covering that is mounted over the tilt cylinders that help reduce the risk of damage from debris or dust getting into the cylinder. This option does limit the back tilt to 6°.



Overhead Guard Options

Order Code

GP15N-GP35N/DP20N-DP35N	Description
TC-2045I	Lowered OHG
TC-2040I	Raised OHG

Description

The lowered overhead guard option lowers the OHG 3" lower than the standard OHG of the truck. Because of this, it includes the change to a vinyl comfort (non-suspension) seat. It is NOT for use with thermoformed OHG cover options or enclosed cabin options.

The raised overhead guard option raises the OHG 3" higher than the standard OHG and is NOT for use with enclosed cabin options either.



Martin Cab

Order Code

GP20N-GP35N/DP20N-DP35N	Description
TC-3260I	Martin Cab

Description

This fully enclosed cab includes the following: Front and split-rear laminated safety glass windshields with wiper and washer, top clear, modified acrylic panel, right and left steel doors with modified, acrylic sliding windows, headliner with a dome light, front window defogger, rear combination stop/tail/backup lights and a heater.

Important notes with this cab include:

- The overall height from the ground to the top of the enclosed cabin increases approximately 1" as compared to the standard OHG.
- Cab may increase the sound level at the operator's ear.
- This option is NOT compatible with optional OHG's, thermoformed OHG cover options, foot direction control or fingertip controls.
- The mast will be restricted to 6° back tilt with this cabin equipped.
- Please contact CSM department regarding the use of OHG mounted accessories and options.
- Please contact the cab manufacturer (Martin) for any warranty or product support.





Martin Cab Accessories

NOTE: All electrical cab accessories are 12 volt.

NOTE: Cab accessories are NOT for use with Warning/Light options (except for Service Indicator Package, Engine Shut Down and Seat Belt Ignition Interlock.

Order Code

GP20N-GP35N/DP20N-DP35N	Description	Notes
TC-2120I	Vertical Exhaust	For use with gas or diesel options and standard muffler
TC-3190I	Rear Window Defogger Fan	Defogger fan for rear windshield
TC-3200I	Inside Rearview Mirror	Automobile style center mounted rearview mirror
TC-3210I	Rear Work light	One work light mounted outside the cab
TC-3220I	Turn Signals	Front and rear turn signals
TC-3230I	Amber Rotating Beacon	Rotating beacon mounted behind the cab that continuously operates with the keyswitch on
TC-3240I	Amber Strobe	Flashing strobe mounted behind the cab that continuously operates with the keyswitch on
TC-3270I	Foundry and Brick Package for Cab	Includes: Radiator coolant level warning light, air cleaner service indicator, dust proof hydraulic tank breather kit, dust proof front axle breather, air intake pre-cleaner (modified for Martin Cab), transmission oil filter, dual element air cleaner and tilt cylinder boot kit. NOT for use with vertical exhaust options.
TC-3275I	Foundry and Brick Package with elevated exhaust	Includes: Radiator coolant level warning light, air cleaner service indicator, dust proof hydraulic tank breather kit, dust proof front axle breather, air intake pre-cleaner (modified for Martin Cab), transmission oil filter, dual element air cleaner and tilt cylinder boot kit.



Harris Stolper Cab

Order Code

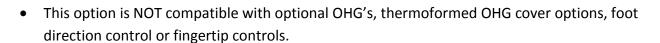
GP20N-GP35N/DP20N-DP35N	Description
TC-3265I	Harris Stolper Cab

Description

This fully enclosed cab includes the following: Front and split-rear laminated safety glass windshields with wiper and washer, top clear, modified acrylic panel, right and left steel doors with modified, acrylic sliding windows, headliner with a dome light, front window defogger, rear combination stop/tail/backup lights and a heater.

Important notes with this cab include:

- The overall height from the ground to the top of the enclosed cabin increases approximately 1" as compared to the standard OHG.
- Cab may increase the sound level at the operator's ear.



- The mast will be restricted to 6° back tilt with this cabin equipped.
- Please contact CSM department regarding the use of OHG mounted accessories and options.
- Please contact the cab manufacturer (Martin) for any warranty or product support.





Harris Stolper Cab Accessories

NOTE: All electrical cab accessories are 12 volt.

NOTE: Cab accessories are NOT for use with Warning/Light options (except for Service Indicator Package, Engine Shut Down and Seat Belt Ignition Interlock.

Order Code

GP20N-GP35N/DP20N-DP35N	Description	Notes
TC-2125I	Vertical Exhaust	For use with gas or diesel options and standard muffler
TC-3195I	Rear Window Defogger Fan	Defogger fan for rear windshield
TC-3205I	Inside Rearview Mirror	Automobile style center mounted rearview mirror
TC-3215I	Rear Work light	One work light mounted outside the cab
TC-3225I	Turn Signals	Front and rear turn signals
TC-3235I	Amber Rotating Beacon	Rotating beacon mounted behind the cab that continuously operates with the keyswitch on
TC-3245I	Amber Strobe	Flashing strobe mounted behind the cab that continuously operates with the keyswitch on
TC-3255I	Foundry and Brick Package for Cab	Includes: Radiator coolant level warning light, air cleaner service indicator, dust proof hydraulic tank breather kit, dust proof front axle breather, air intake pre-cleaner (modified for Martin Cab), transmission oil filter, dual element air cleaner and tilt cylinder boot kit. NOT for use with vertical exhaust options.
TC-3280I	Foundry and Brick Package with elevated exhaust	Includes: Radiator coolant level warning light, air cleaner service indicator, dust proof hydraulic tank breather kit, dust proof front axle breather, air intake pre-cleaner (modified for Martin Cab), transmission oil filter, dual element air cleaner and tilt cylinder boot kit.



Tire Options

Order Code

GP15N-GP20CN	Description
SPTP15I	Solid Pneumatic Single Drive and Steer Tires.
	Drive – 6.5x10; Steer – 5x8.
TC-3175I	Non-Marking Solid Pneumatic Single Drive and Steer Tires. For use with 3,000-4,000 lb. and 5,500-7,000 lb. models.
	Drive – 6.5x10; Steer – 5x8

GP20N-GP25N	Description
SPT1D1SP25NI	Solid Pneumatic Single Drive and Steer Tires.
	Drive – 7x12; Steer – 6x9.
TC-3180I	Non-Marking Solid Pneumatic Single Drive and Steer Tires.
	Drive – 7x12; Steer – 6x9.
TC-3450I	Large Pneumatic Single Drive Tires.
	Tires are 28x9-15. Increase chassis width to 46.7". Not for use with steel supply lines.
TC-3460I	Large Solid Pneumatic Single Drive Tires.
	Tires are 28x9-15. Increases chassis width to 46.7". Not for use with steel supply lines.
DRP28DP25I	Air-Filled Pneumatic Dual Drive and Single Steer Tires.
	Drive Tires are 7x12-14PR.
SPT2D1SP25I	Solid Pneumatic Dual Drive and Single Steer Tires.
	Drive – 7x12; Steer – 6.5x10.



GP30N-GP35N	Description
SPT1D1SP30NI	Solid Pneumatic Single Drive and Steer Tires.
	5,500-6,000 lb. capacity: Drive – 28x9-15; Steer – 6.5x10.
	6,500-7,000 lb. capacity – Drive – 250x15; Steer – 6.5x10.
TC-3185I	Non-Marking Solid Pneumatic Single Drive and Steer Tires.
	Drive – 28x9-15; Steer – 6.5x10.
DRP28DP30I	Air-Filled Pneumatic Dual Drive and Single Steer Tires.
	Drive Tires are 28x9-15-14PR.
SPT2D1SP30I	Solid Pneumatic Dual Drive and Single Steer Tires.
	Drive – 28x9x15; Steer – 6.5x10.

Description

There are a wide array of different tires that are in the price pages for this model family. This is however, only a fraction of the tires that you can get on Cat Lift Trucks. If there is something that the customer needs but is not in the price pages, be sure to consult the CSM department.

All trucks come standard with air-filled pneumatics, but if the application is one that is traditionally tough on the tires and might result in excessive damage, then the customer should consider solid pneumatics.

Also, dual drive tires can add stability when lifting a load by providing a wider base on the front of the truck, where the load is being lifted.





Seat Options

Order Code

GP15N-GP35N	Description
SEATVI	Comfort (non-suspension) Vinyl Seat. Not for use with fingertip controls or adjustable armrest. Automatically included with lowered OHG option.
SEATCI	Comfort (non-suspension) Cloth Seat. Not for use with fingertip controls or adjustable armrest. Automatically included with lowered OHG option.
SEATFSCCI	Full Suspension Cloth Seat
SEATFSVSI	Full-Suspension Fold Down Vinyl Swivel Seat. Provides 18° of swivel to the right with a latch at the end of travel. Reduces torso clearance to the OHG by approximately 1.25". Not for use with the convenience tray, adjustable armrest or fingertip controls. If this is ordered in combination with armrest TC-1870, please contact CSM.
SEATFSCSI	Full-Suspension Fold Down Cloth Swivel Seat. Provides 18° of swivel to the right with a latch at the end of travel. Reduces torso clearance to the OHG by approximately 1.25". Not for use with the convenience tray, adjustable armrest or fingertip controls. If this is ordered in combination with armrest TC-1870, please contact CSM.
TC-8100I	Full-Suspension Vinyl Seat with Back Adjustment. Back of seat can adjust 6° forward and 8° backward. Not for use with fingertip controls and armrest options.
TC-8110I	Full-Suspension Cloth Seat with Back Adjustment. Back of seat can adjust 6° forward and 8° backward. Not for use with fingertip controls and armrest options.



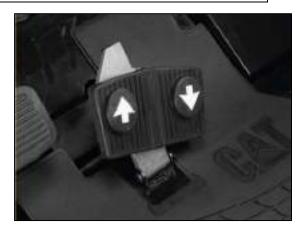
Foot Direction Control

Order Code

GP20N-GP35N/DP20N-DP35N	Description
FDCP15I	Foot Direction Control

Description

This option removes the electronic direction control lever from the steering column and adds the pictured direction control lever that is operated using the foot by the operator. Often referred to as Monotrol, this is simply preferred by some operators that are used to using it.





Reverse Drive Packages

Order Code

GP20N-GP35N/DP20N-DP35N	Description
RDPCP15I	Reverse Drive Package – Cloth Seat
RDPVP15I	Reverse Drive Package – Vinyl Seat

Description

The reverse drive package includes the following accessories in order to make it easier and more comfortable for an operator that is in an application that is travelling in reverse a large portion of the time:

- 1. Swivel Seat Base Allows for 12° swivel in either direction.
- 2. Reverse Hand Grip with Horn Button Mounted on the rear OHG leg and allows the operator to have something to hold onto while turned facing backwards and a horn to use without having to use the conventional forward facing horn on the steering wheel.
- 3. Steering Wheel Knob Allows for easier turning of the steering wheel.

Reverse drive packages are not for use with fingertip control options due to interference when swiveling.

Steering Wheel Knob

Order Code

GP20N-GP35N/DP20N-DP35N	Description
STKNB15I	Steering Wheel Knob

Description

The steering wheel knob provides the operator with a smooth knob used for turning the steering wheel with ease. It is a plastic knob attached to the steering wheel.





Rear Grab Bar With Horn Button

Order Code

DP100N-DP160N	Description
RGHP15I	Rear grab bar with horn button

Description

The rear grab bar is mounted to the overhead guard on its back, right leg and has a yellow button to activate the horn of the truck.

This option is not for use on the 3,000-4,000 lb. compact models.



Swing Down LP Tank Bracket

GP20N-GP35N	Description
SDBKTP15I	Swing-Down LP Tank Bracket

Description

This patented swing down bracket allows more convenience to the operator whenever changing the LP tank of the truck. For some operator's the idea of changing the tank at the top of the counterweight can be a daunting task, so this bracket swings the tank out, and then down to a more manageable height.

It is important to keep in mind that this swing down LP bracket does cause the tank to sit a little higher than normal and as a result might



limit some rearward visibility, especially visibility to the area directly behind the counterweight.

This option is obviously only available on LP trucks and the brackets are for use with both 33.5 lb and 43.5 lb. LP tanks.



Underbelly Screen

GP20N-GP35N	Description
UBSP15I	Underbelly Screen

Description

This optional underbelly screen was designed to fully cover the underside of the truck with perforated metal. The natural operation of a forklift sucks air up into the engine compartment in order to cool it. This underbelly screen might inhibit some of the cooling capability of the truck, but at the same time will prevent debris from being sucked up into the engine compartment. This is commonly used to avoid large debris such as shrink-wrap from getting sucked into the engine where it can cause damage to components if it gets tangled.

High Pass Through Radiator

GP20N-GP35N	Description
HPTRADP15I	Square Fin Radiator

Description

This high pass through radiator is a square fin design, as opposed to the serpentine fin design of the standard radiator. It is commonly used in applications with a lot of dust and debris as the square fin design allows for more dust or fiber to pass completely through a radiator rather than being stuck on the front end and possibly clogging it up. This is very common in cardboard or paper applications.



Radiator Screen

GP20N-GP35N	Description
RADSCRP15I	Radiator Screen

Description

Another option to help prevent the clogging of the radiator would be too add this option. This is a slide in screen that protects the front of the radiator from debris. The screen can then be removed and cleaned whenever necessary.



High Speed Fan

GP20N-GP35N	Description
HSFP15I	High Speed Fan Upgrade

Description

Heat balance and overheating are one of the major challenges that forklift manufacturers face. If there is an application where the customer is consistently experiencing overheating or where it might be a problem, this option provides a higher speed fan to pull hot air from the engine and expel it from the engine compartment at a higher rate than the standard cooling fan.



Cotton/Fiber Protection Package

GP20N-GP35N	Description
LINTPROTP15I	Cotton/Fiber Protection

Description

This package is put together for ease of order for applications that are particularly exposed to fiber or particles. The components included in the package include the few previously listed options:

- Square Fin Radiator- Allows debris to pass through the radiator more easily to prevent clogging.
- Radiator Screen Blocks heavier debris from entering into the radiator
- High Speed Fan Pushes hot air out of the engine compartment

Dust Proof Hydraulic Tank Breather Kit

GP20N-GP35N	Description
HTBP15I	Hydraulic Tank Breather Kit

Description

Dust Proof Front Axle Breather Kit

GP20N-GP35N	Description
FABP15I	Front Axle Breather Kit

Description

This breather kit is attached to the drive axle (front axle) of the truck and can help reduce the possibility of contamination of the gear oil from dust and debris in dirtier applications. This is part of the Foundry/Brick Protection Package.



Dual Element Air Cleaner

GP20N-GP35N	Description
AIRCLDEP15I	Dual Element Air Cleaner

Description

This option adds a secondary filter element inside of the standard primary air cleaner element. It helps to reduce the chances of dust or debris from entering into the engine system and is part of the larger Foundry/Brick Protection Package.



Elevated Air Intake Pre-cleaner

GP20N-GP35N	Description
PRECLNRP15I	Elevated Air Intake Pre-cleaner

Description

This moves that air intake of the truck to an elevated location mounted to the rear OHG leg. It helps to further reduce the chance of contamination of the engine by way of dust particles taken in through air intake because the entry point is higher from the ground, where many of the contaminants originate. It reduces the load on the air filament itself.

This option is not for use with cabin options or with the elevated exhaust option.



Transmission Fluid Filter

GP20N-GP35N	Description
TFFP15I	Transmission Fluid Filter

Description

This is an external filter that is added to one of the transmission lines to help trap any debris that might contaminate the transmission. It is often added in applications with excessive dirt or dust and is part of the Foundry/Brick Protection Package.



GP20N-GP35N	Description
DUSTPROTP15I	Foundry/Brick Protection Package
TC-1315I	Foundry/Brick Protection Package for use with Elevated Exhaust

Description

This is a compiled package of options that is designed to help trucks perform at an optimal level in applications that are particularly dirty and/or dusty. This package is not for use with cabin options or elevated exhaust (unless option TC-1315I is ordered) and comes with the following options:

- Service Indicator Package Additional icons added to monitor air cleaner and radiator coolant levels
- Dust Proof Hydraulic Tank Breather Kit Hydraulic tank protection from contamination
- Dust Proof Front Axle Breather Kit Drive axle protection from contamination
- Dual Element Air Cleaner Provides more efficient filtration system during air intake process
- *Elevated Air Intake Pre-Cleaner* Elevates air intake to lessen chance of contaminant entry into the engine.
- *Transmission Fluid Filter* Fluid to increase protection from contamination of the transmission fluid
- *Tilt Cylinder Boot Kit* Covers for the tilt cylinders to help protect from dust or debris contamination



Exhaust Options

GP20N-GP35N	Description
EXHSELEP15I	Elevated Exhaust
TC-6715I	Wrapped Exhaust

Description

The elevated exhaust option re-routes the exhaust of the truck from underneath it, to the rear right hand overhead guard leg of the truck. This blows the exhaust fumes from below the truck to above the truck as to allow for less release of exhaust where it might irritate pedestrians or product.



Sealed Alternator

DP20N-DP35N	Description
TC-3610I	Sealed Alternator

Description

This is an option that is commonly used in excessively dirty/dusty applications and is a 35 amp sealed alternator. It comes included with the UL Safety rated trucks.



Engine Block Heater

GP20N-GP35N	Description
TC-6720I	Engine Block Heater

Description

This is an engine block heater that could help in cold start environments.

Rear LED Working Light

GP20N-GP35N	Description
RLWLP15I	Rear Facing Working Light

Description

A rear facing LED work light is mounted to the rear left OHG leg. This option might benefit a customer who uses the lift truck in a lowly lit environment and often works in reverse. This rearward illumination can drastically increase visibility behind the truck.





Premium Working Light Package

GP20N-GP35N	Description
RLMRLP15I	Premium Light Package

Description

This is a package intended to help increase operator awareness by combining the following options:

- Rear View Mirror Kit Mirrors mounted to increase rearward visibility
- Rear Work Light Increases rearward visibility and view of area behind truck in dimly lit areas



LED Turn Signals

GP20N-GP35N	Description
LTSP15I	Turn Signals

Description

LED turn signals can be added to the truck and are OHG mounted. They allow the operator to utilize them to notify pedestrians or other operators what the intended path of the truck is going to be.





Amber Strobes

GP20N-GP35N	Description
BUHASP15I	Amber Strobe Mounted Above OHG
BULASP15I	Amber Strobe Mounted Below OHG

Description

An amber strobe can be mounted above or below the overhead guard based on customer preference or need. Whenever the key switch is activated, the strobe will flash to visually notify pedestrians and other operators that the truck is in the area. Applications with low lighting, high ambient noise levels and high pedestrian and vehicle traffic might benefit from having trucks equipped with this option.

It is important to keep in mind that when mounted above the OHG, this option increases overall height clearance of the truck and when mounted below, it can affect rearward visibility by way of physically being in the line of sight and by flashing brightly.





Blue Spotlights

GP20N-GP35N	Description
TC-3370I	Rear Activated Rear Facing Blue Spotlight
TC-3375I	Forwarded Activated Forward Facing Blue Spotlight

Description

These blue spotlights are used to announce the presence of the truck by projecting a blue spotlight onto the ground either in front or behind the truck on the ground, dependent on the direction of travel of the truck. The spotlights are mounted on the overhead guard of the truck. The forward facing option shines through the mast and the rearward facing option shines to the ground behind the counterweight.

These allow pedestrians around corners or away from the lift truck to know that it is coming because the arrival of the truck is preceded by the shining blue light. These options are not for use with lowered OHG options or fully enclosed cabin options.





Additional Indicators

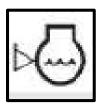
GP20N-GP35N	Description
ACSIP15I	Air Cleaner Service Indicator
RCWLP15I	Radiator Coolant Warning Light
SRVCINDP15I	Service Indicator Package: Includes Air Cleaner Service and Radiator Coolant Warning Lights

Description

These are added service indicators on the in dash display. The air cleaner service indicator makes the operator aware whenever the air intake is clogging and the radiator coolant warning light lets the operator know if they radiator coolant level is low.



Air Cleaner Service Indicator



Radiator Coolant Warning Icon



GP20N-GP35N	Description
TC-1020I	Engine Shut Down System

Description

The engine shut down system is an option which shuts down the engine if any of the following occur:

- High transmission temperature (>230° F)
- High coolant temperature (>225° F)
- Low engine oil pressure (<3.5 psi)

If any of the above occur, an audible alarm will sound and a dash light will illuminate. This will happen for 30 seconds and if the engine isn't shut down by the operator, then the engine will shut down on its own. Once this happens, the engine can be restarted by cycling the key switch, but if the condition that cause the shutdown still exists, the engine will shut down after 30 seconds again.

Appropriate sensors are added to the truck and the wiring harness for the system is installed through the frame of the truck. Also, the buzzer that sounds whenever the system is activated must be installed. Everything is routed through a relay box which tells the engine if any of the trigger conditions are occurring.

The benefits here are that the operator cannot continue to operate the truck if there one of any of a number of fluid conditions that could cause expensive and time consuming repairs. If the truck is automatically shut down, there is a better chance of diagnosing the issue and fixing it with less money spent by the end user.



GP20N-GP35N	Description
TC-2020I	Seat Belt Ignition Interlock

Description

Seat belt ignition interlock is an option that adds sensors and wiring to mandate that the operator is using the seat belt and parking brake during operation of the truck.

- If the operator has not fastened the seat belt, the ignition of the truck will not start.
- If the operator is running the truck and removes the seat belt, then the engine will stop running in 2.5 seconds.
- If the operator leaves the seat without setting the parking brake, the engine will shut down within 2.5 seconds as well.



Wiring is added to the truck that communicates whether the critical components are being used correctly. The seat belt and seat sensor work hand in hand so that the engine knows if the operator is in the seat and the seat belt is fastened. The wiring is also connected to the parking brake and will shut the engine down if the operator leaves the seat (warning the engine by way of the seat sensor) without setting the brake.

The benefit here is added security to the operator. If the engine cannot run without these major components being used, then it could help reduce the chances for improper use. This takes the PDS system a step further and completely shuts the engine down instead of a lockout of hydraulic and transmission functions.



Dual Panoramic Rear View Mirror Kit

GP20N-GP35N	Description
RVWMIRRI	Rearview Mirror Kit

Description

This option adds to adjustable rear view mirrors that are mounted to the front legs of the OHG to increase operator visibility behind the truck without having to actually turn to face in a rearward direction. This option is part of the premium working light package.

This mirror is not for use with enclosed cabin options.



Adjustable Armrest

GP20N-GP35N	Description
TC-1870I	Armrest

Description

This adjustable armrest mounts to the right side of the seat and conveniently adjusts in numerous ways in order to reach the position that is most comfortable for the operator. This low cost option is a great way to increase the ergonomics of the operator compartment during operation.





Operator Fan

GP20N-GP35N	Description
TC-6700I	Operator Compartment Fan

Description

This is a small fan that is mounted (usually in the upper right hand corner of the operator's compartment) to blow air on the operator. This option comes included with the cabin options of this model family.



Keyless Ignition

GP20N-GP35N	Description
TC-2015I	Keyless Ignition

Description

As suggested in the name of the option, this allows the truck to be started without the need of a key. Usually this adds a keypad where the operator will enter a passcode and the engine of the truck will start automatically. The difference between this and the standard truck's passcode capabilities is that a key is still required to start the truck with the standard offering.



Thermoformed Overhead Guard Covers

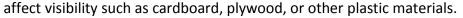
GP20N-GP35N	Description
TC-1930I	Tinted Overhead Guard Cover
HGCP15I	Clear Overhead Guard Cover

Description

These acrylic OHG covers are built to form fit the top of the overhead guard and is held securely in place with Velcro straps so that the cover is easily to remove and replace. It can help protect the operator from the elements and small falling objects without restricting the visibility through the top of the operator's

compartment. There is a drain hose that runs down the left front OHG leg to prevent water from gathering on top of the cover.

Applications that could benefit from the use of this option include those where the truck is regularly operated outdoors or where the customer has covered the OHG regularly with other materials that might









Fire Extinguisher

GP20N-GP35N	Description
FIREEXTP15I	Fire Extinguisher

Description

This option adds an ABC-type 2.5 lb. fire extinguisher to the right rear OHG leg of the truck. This extinguisher meets the UL rated requirements of the US market and some countries or customers might require a fire extinguisher that meets other requirements.

Because it is mounted on the rear OHG leg, there is a chance that it might slightly affect rearward visibility and this option is not available with certain options.

Benefits of this option include increased fire safety and possible compliance with insurance policies required on certain sites. The end user is responsible for the training of the operator whenever it comes to use of the extinguisher.



Drawbar Pin

GP20N-GP35N	Description
DRWPINP15I	Drawbar Pin

Description

The drawbar pin is the steel pin that is located on the back of the counterweight. It is important to note that lift trucks are not intended to "tow" anything with this pin. The pin is intended for the loading and unloading of the truck onto trailers.





Lifting Eyes

GP20N-GP35N	Description
LFTEYECP15I	Counterweight Mounted Lifting Eyes
LFTEYEMP15I	Mast Mounted Lifting Eyes

Description

Lifting eyes are used whenever an end user needs to move the lift truck with the use of a crane. The **counterweight mounted lift eyes** consist of a lifting eye that is forged onto a rod and fitted into the appropriate holes in the counterweight. Secured with a nut and a pin, a rubber socket prevents the eyes from damaging the paint of the counterweight. These eyes can be used to remove the counterweight if it is ever needed. When combined with the **mast mounted lift eyes**, the truck can be completely hoisted using a crane.



This option is commonly used in stevedoring to lift a truck onto the deck of a ship for deck loading.

It is important to note that counterweight mounted lift eyes are not compatible with LP models due to inference with the LP tank mounting.



Special Paint Options

GP20N-GP35N	Description
9999-721101	Red Paint; RAL: 3002
9999-721201	Blue Paint; RAL: 5015
9999-721301	Bright Yellow; RAL: 1023
9999-721401	Gray Paint; RAL: 7001
9999-721501	Green Paint; RAL: 6024
9999-721601	White Paint; RAL: 9016
9999-721701	Orange Paint; RAL: 2011

Description

Special paint can be ordered by the end user. The RAL codes of the various price page option colors are listed above. If a custom color is desired, it can be done through the CSM department (inquire for pricing as there is a minimum amount of powder that must be ordered for custom colors) with RAL code.





Language Markings

GP20N-GP35N	Description
LANGENGEUI	European English Language Markings
LANGDFREEUI	French Language Markings
LANDSPAAMI	Spanish Language Markings (North/South America)
LANGPORAMI	Portuguese Language Markings (South America)

Description

These options change the language of all of the decals are changed to the language requested. The languages listed above are the most frequently ordered, but in the future there are a number of other languages that will be available. See the price pages for available options.



Customer Service

Customer Support Programs

Cat Lift Trucks has an extremely strong dealer network that is able to provide its customers with the most comprehensive support system possible. There are a number of ways that this is accomplished.

Warranty Information

- Standard Warranty Program
 - o 1 Year / 2,000 Hour Standard Warranty
 - o 2 Year / 4,000 Hour Powertrain Warranty
- Optional Extended Warranties
 - o Lift Plus™ Extended Warranty Program
 - 2 year / Unlimited hour, 3 year / 6,000 hour, 4 year / 8,000 hour and 5 year /
 10,000 hour options for "carriage to counterweight" coverage extension options
 - 3 year / 6,000 hour, 4 year / 8,000 hour and 5 year / 10,000 hour options for Powertrain coverage extension options
 - Lift Truck Advantage Warranty Extensions
 - 3 year / 6,000 hour, 4 year / 8,000 hour and 5 year / 10,000 hour options for "carriage to counterweight" coverage extension options
 - 4 year / 8,000 hour and 5 year / 10,000 hour options for Powertrain coverage
- Parts Fast or Parts Free Guarantee (U.S. and Canada Only)
 - This guarantee ensures next day business delivery of parts to the dealership or they are free, freight included.
- Separate Extended Warranty for Emission Parts (U.S. and Canada Only)



Dealer Network

Supported by the most extensive dealer network in the industry, Cat Lift Trucks is driven and committed to keeping the end user's fleet up and running. If anything goes awry, help is always a phone call away.





Forklifts Are Not Commodities

The Cat lift trucks brand is well known around the globe for being a premium brand. It leads the industry in its three core beliefs of quality, reliability, and customer service. As with its counterparts on the earth moving side, these products have a reputation for being tough, durable, and backed by an extremely strong dealer network.

As a salesman, it is important to remember that this purchase is an investment, and a large one at that. As



you discuss the needs and desires of the end user, do not forget to take time to remind them of the features that are listed in this manual that make these lift trucks stand out. A lift truck is not a commodity. It is not something that you purchase to run until it dies and then just toss it in the dump and get a new one. There is a very good and clear reason that there are so many premium features that are standard on Cat lift trucks while competitors might only offer them as options that add to the baseline price, or not at all.

These lift trucks are meant as an investment. They are meant to be sold on the premise that the unique features it has and the presence of your dealership will provide a wide array of benefits that will HEAVILY outweigh the relatively minor lifetime cost of the truck.

