R 60 Technical Data.

Electric Forklift Trucks
R 60–35
R 60–40
R 60–45
R 60–50

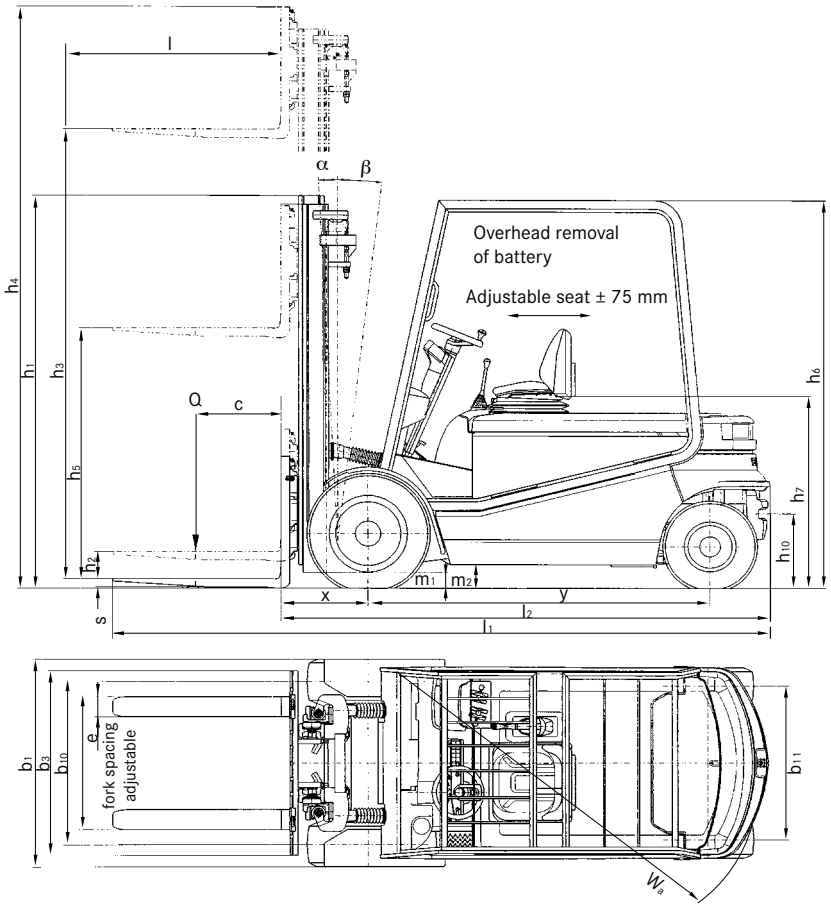
Achieve more.

R 60 Electric Forklift Trucks.

In accordance with VDI guidelines 2198, this specification applies to the standard model only.
Alternative tyres, mast types, ancillary equipment, etc. could result in different values.

Characteristics	1.1	Manufacturer			STILL		STILL	
	1.2	Manufacturer's model designation			R 60-35		R 60-40	
	1.3	Power supply – electric, diesel, petrol, gas, mains electric			electric		electric	
	1.4	Type of control – hand, pedestrian, stand-on, rider seated			rider seated		rider seated	
	1.5	Carrying capacity / load	Q	kg	3500		4000	
	1.6	Load centre	c	mm	500		500	
	1.8	Load distance	x	mm	484		484	
	1.9	Wheelbase	y	mm	1843		1987	
Weight	2.1	Weight		kg	5671		5977	
	2.2	Axle loadings laden front		kg	8267		8966	
	2.2.1	Axle loadings laden rear		kg	904		1011	
	2.3	Axle loadings unladen front		kg	2899		2964	
	2.3.1	Axle loadings unladen rear		kg	2772		3013	
Wheels | tyres	3.1	Tyres - rubber (V), SE, pneu. (E), poly. (PE)			SE/L	V	SE/L	V
	3.2	Tyre size – front			250-15(18 PR)	645/300-410z	250-15(18 PR)	645/300-410z
	3.3	Tyre size – rear			21x8-9 (16 PR)	18x7x12	21x8-9 (16 PR)	18x7x12
	3.5	Wheels – number front (x = drive wheel)			2x		2x	
	3.5.1	Wheels – number rear (x = drive wheel)			2		2	
	3.6	Track width – front	b_{10}	mm	972	1034	972	1034
	3.7	Track width – rear	b_{11}	mm	920		920	
Dimensions	4.1	Tilt angle, mast/fork carriage forwards		degrees	3		3	
	4.1.1	Tilt angle, mast/fork carriage backwards		degrees	8		8	
	4.2	Closed height	h_1	mm	2375	2332	2375	2332
	4.3	Free lift	h_2	mm	160		160	
	4.4	Lift height	h_3	mm	3320		3320	
	4.5	Height, mast raised	h_4	mm	4130		4130	
	4.7	Height to top of overhead guard (cabin)	h_6	mm	2317	2280	2317	2280
	4.8	Seat height	h_7	mm	1248	1214	1248	1214
	4.12	Coupling height	h_{10}	mm	438/550	428/540	438/550	428/540
	4.19	Overall length	l_1	mm	3670		3814	
	4.20	Length to front face of forks	l_2	mm	2670		2814	
	4.21	Overall width	b_1	mm	1196	1340	1196	1340
	4.22	Fork thickness	s	mm	50		50	
	4.22.1	Fork thickness	e	mm	100		120	
	4.22.2	Fork length	l	mm	1000		1000	
	4.23	Fork carriage to DIN 15173 – class / form A or B			ISO III B		ISO III B	
	4.24	Fork carriage width	b_3	mm	1100		1100	
	4.31	Ground clearance beneath mast, laden	m_1	mm	96	80	96	80
	4.32	Ground clearance at centre of wheelbase	m_2	mm	160	128	160	139
	4.33	Aisle width for pallets 1000 x 1200 wide	A_{st}	mm	3996		4136	
	4.34	Aisle width for pallets 800 x 1200 long	A_{st}	mm	4196		4336	
	4.35	Outer turning radius	W_a	mm	2312		2452	
	4.36	Inner turning radius	b_{13}	mm	–		–	
Performance	5.1	Speed laden		km/ h	14		14	
	5.1.1	Speed unladen		km/ h	16		16	
	5.2	Lift speed laden		m/ s	0,33		0,33	
	5.2.1	Lift speed unladen		m/ s	0,46		0,46	
	5.3	Lowering speed laden		m/ s	0,6		0,6	
	5.3.1	Lowering speed unladen		m/ s	0,45		0,45	
	5.5	Rated drawbar pull laden		N	3395		3230	
	5.5.1	Rated drawbar pull unladen		N	4115		4055	
	5.6	Max. drawbar pull laden		N	13790		13630	
	5.6.1	Max. drawbar pull unladen		N	14500		14450	
	5.7	Gradeability laden		%	5,5		5	
	5.7.1	Gradeability unladen		%	10		9	
	5.8	Max. gradeability laden		%	14		13	
	5.8.1	Max. gradeability unladen		%	25		23	
	5.9	Acceleration time laden		s	5,1		5,5	
	5.9.1	Acceleration time unladen		s	4,6		4,8	
	5.10	Brakes			electr. / hydr.		electr. / hydr.	
Motors	6.1	Drive motor hourly capacity		kW	15		15	
	6.2	Hoist motor capacity at 15% duty factor		kW	20		20	
	6.3	Battery equipment to DIN 43531/35/36 A, B, C, no			43536 A		43536 A	
	6.4	Battery voltage	U	V	80		80	
	6.4.1	Battery capacity	K 5	Ah	700L (500-775)		840L (500-930)	
	6.5	Battery weight		kg	1863		2178	
	6.6	Energy consumption according to VDI cycle		kWh / h				
Other	8.1	Drive control			Stilltronic		Stilltronic-SCR	
	8.2	Operating pressure for attachments		bar	210		210	
	8.3	Oil flow for attachments		l/min				
	8.4	Average noise peak at operator's ears		dB(A)				
	8.5	Trailer coupling, type/DIN			pin		pin	

STILL		STILL
R 60-45		R 60-50
electric		electric
rider seated		rider seated
4500		4990
500		500
484		494
1987		2047
6263		6504
9755		10452
1013		1042
3026		3039
3242		3465
SE	V	SE
250-15	645/300-410z	28x12,5-15
21x8-9	18x7x12	21x8-9
2x		2x
2		2
972	1034	1104
920		920
3		3
8		8
2375	2332	2375
160		160
3320		3180
4163	4130	4093
2317	2280	2317
1248	1214	1248
438/550	428/540	428/540
3814		3874
2814		2874
1196	1340	1394
50		60
120		130
1000		1000
ISO III B		ISO III B
1100		1310
96	80	96
160	139	160
4136		4205
4336		4405
2452		2511
–		–
13		13
15		15
0,28		0,26
0,46		0,39
0,6		0,6
0,45		0,45
3055		2849
3980		3877
13455		13249
14380		14277
4,5		4
9		8
11		11
21		21
5,7		6
5		5,2
electr. / hydr.		electr. / hydr.
15		15
20		20
43536 A		43536 A
80		80
840L (500-930)		840L (500-930)
2178		2178
Stilltronic-SCR		Stilltronic-SCR
210		210
pin		pin

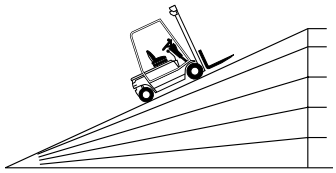


The models depicted in this brochure may contain special parts or attachments which are not supplied as standard.

Gradient Performance (dry, concrete surface – coefficient of friction 0.80)

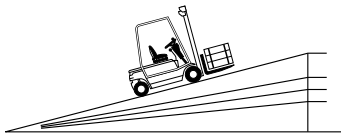
Example:
R 60-35 with 3,500 kg load, 13% gradient, 31 m distance and SE tyres. This gradient is negotiable10 times per hour.

unladen



	R 60-35		R 60-40		R 60-45		R 60-50
	SE/L	V	SE/L	V	SE	V	SE
23%	290 m	300 m	260 m	265 m	210 m	215 m	150 m
20%	390 m	380 m	330 m	340 m	295 m	305 m	235 m
15%	780 m	850 m	670 m	660 m	580 m	620 m	470 m
10%	2720 m	3060 m	2310 m	2330 m	1850 m	1960 m	1400 m
5%	13930 m	14490 m	13360 m	13930 m	12730 m	13220 m	11500 m

laden

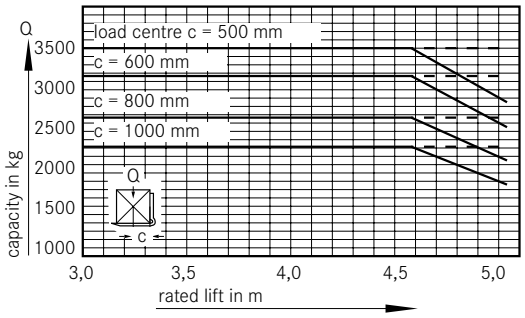


13%	310 m	325 m	260 m	270 m	210 m	215 m	150 m
9%	670 m	790 m	560 m	640 m	420 m	480 m	310 m
7%	1340 m	1730 m	1000 m	1150 m	770 m	910 m	500 m
5%	3630 m	4570 m	2480 m	2930 m	1860 m	2320 m	1200 m

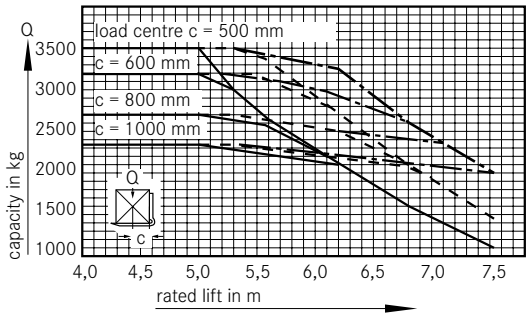
Mast type

				Telescopic mast		HiLo mast		Triple mast
R 60-35/40	Rated lift	h_3		3020-4120	4220-5020	3070-4270	4370-4570	4530-7530
	Closed mast height	h_1	SE/L	2225-2775	2805-3225	2175-2775	2825-2925	2225-3225
			V	2182-2732	2782-3182	2132-2732	2782-2882	2182-3182
	Free lift	h_2 / h_5	SE/L	160		1395-1995	2045-2145	1445-2445
			V	160		1352-1952	2002-2102	1402-2402
	Raised mast height	h_4		3830-4930	5030-5830	3880-5080	5180-5580	5355-8355
	Angle of tilt	v/h		3/8	3/8	3/8	3/8	3/8
	Overall width	b_1	SE/L	1196	1300	1196	1300	1300
			V	1340		1340		1390
	Track width, front	b_{10}	SE/L	972	1062	972	1062	1062
			V	1034		1034		1080
R 60-35	Overall length	l_2		2670				2707
	Load distance	x		484				511
	Working aisle width	A_{st}		3996/4196				4023/4223
R 60-40	Overall length	l_2		2814				2841
	Load distance	x		484				511
	Working aisle width	A_{st}		4136/4336				4163/4363
R 60-45	Rated lift	h_3		3020-4120	4220-5020	2970-4170	4270-4470	4380-7380
	Closed mast height	h_1	SE/L	2225-2775	2825-3225	2175-2775	2825-2925	2225-3225
			V	2182-2732	2782-3182	2132-2732	2782-2882	2182-3182
	Free lift	h_2 / h_5	SE/L	160		1395-1995	2045-2145	1445-2445
			V	160		1352-1952	2002-2202	1402-2402
	Raised mast height	h_4	SE	3863-4963	5063-5863	3780-4980	5080-5280	5205-8205
			V	3830-4930	5030-5830	3780-4980	5080-5280	5205-8205
	Angle of tilt	v/h		3/8	3/8	3/8	3/8	3/8
	Overall width	b_1	SE/L	1196	1394	1196	1394	1394
			V	1340		1340		1390
	Track width, front	b_{10}	SE/L	297	1104	972	1104	1104
			V	1034		1034		1080
	Tyre size – front		SE	250-15	28-12,5x15	250-15	28-12,5x15	28-12,5x15
	Overall length	l_2		2814				2841
	Load distance	x		484				511
	Working aisle width	A_{st}		4136/4336				4163/4363
R 60-50	Rated lift	h_3		2880-3980	4080-4880	–		4330-7330
	Closed mast height	h_1	SE	2225-2775	2825-3225	–		2225-3225
	Free lift	h_2 / h_5	SE	160		–		1445-2445
	Raised mast height	h_4	SE	3793-4839	4993-5793	–		5155-8155
	Angle of tilt	v/h		3/8	3/8	–		3/8
	Load distance	x		494		–		521
	Working aisle width	A_{st}		4205/4405		–		4232/4432

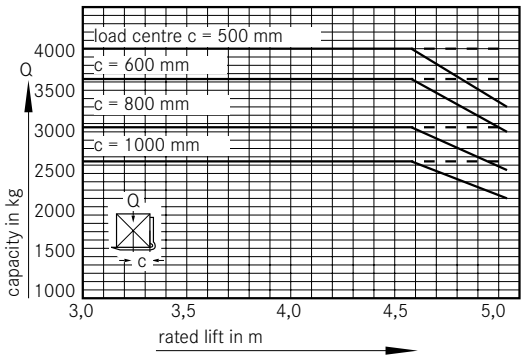
Capacity Chart R 60-35 Tele HiLo masts



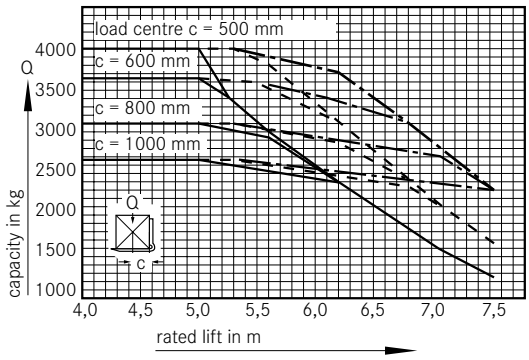
Capacity Chart R 60-35 Triplex mast



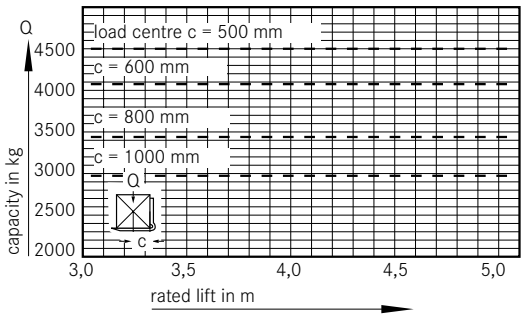
Capacity Chart R 60-40 Tele HiLo masts



Capacity Chart R 60-40 Triplex mast



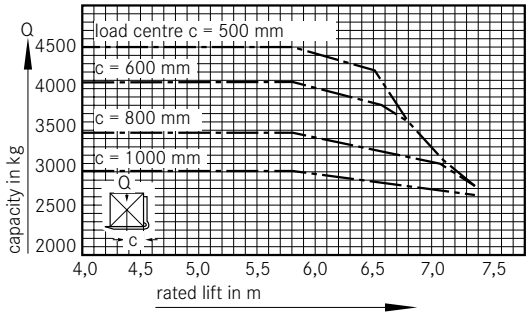
Capacity Chart R 60-45 Tele HiLo masts



pneumatic tyres

SE and rubber tyres

Capacity Chart R 60-45 Triplex mast

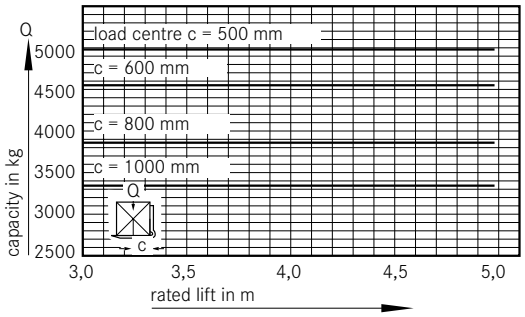


pneumatic tyres

SE tyres

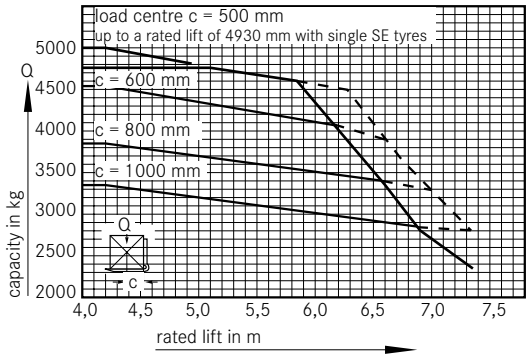
rubber tyres

Capacity Chart R 60-50 Tele HiLo masts



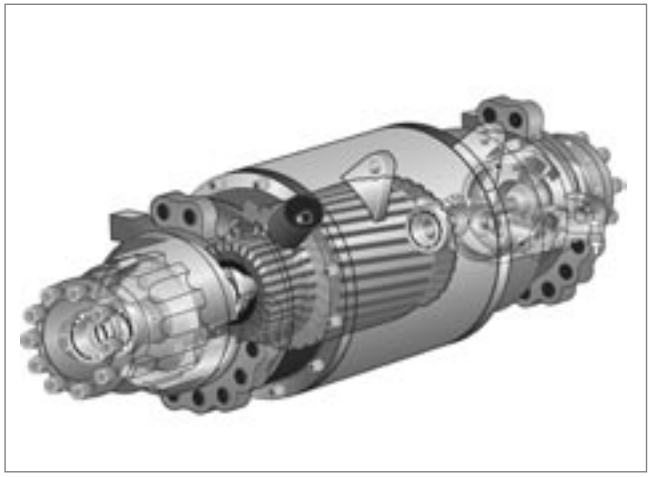
single - SE

Capacity Chart R 60-50 Triplex mast



single - SE

dual



Front axle with drive motor.

Driver's compartment.

Drive.

- Easily serviced single motor front wheel drive with independently excited shunt wound DC motor.
- Speed and torque can be regulated independently. This gives very sensitive response, powerful acceleration and non-wearing electrical braking simply by using the drive pedal.
- An inaudible power unit using MOSFET technology at a cycle frequency of 16 kHz controls the drive motor. Wear prone direction and braking contactors are dispensed with.
- Regenerative braking with a high efficiency of up to 15% is possible. When plugging, braking or releasing the drive pedal energy flows back into the battery. This gives the new R 60 a longer work cycle from one battery charge or will often allow the use of a smaller capacity battery.

Front axle with drive motor.

Integral drive motor on the front axle drives both front wheels via a differential. This exclusive design of a single motor front wheel drive power pack allows the armature to be removed without the need to remove the mast first.

Electrical system.

Digital electrics permit easy adjustment to suit changing applications. This exclusive design of a single motor front wheel drive power pack allows the armature to be removed without the need to remove the mast first. The number of cables and plug connectors is reduced and reliability increased. Additionally, variants of the electrical equipment are easily implemented.

Mast.

- Standard end of stroke damping on HiLo and Triplex masts allows virtually silent lifting and lowering of the load.
- Hoist chains run in guide rails which prevent rattling and protect the chain.
- Tilt cylinders are protected from dust by bellows fitted as standard.

Frame.

- Mudguards are bolted onto the frame and are easily adapted to accommodate a wider track or dual wheels.

Driver's compartment.

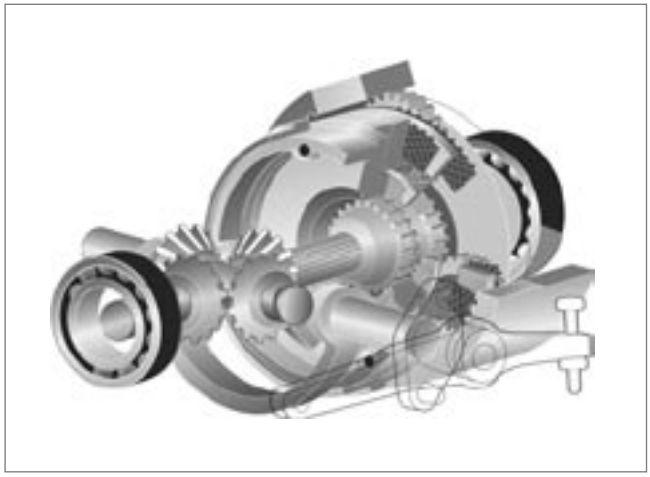
- The driver's compartment is an all round enclosed structure resiliently mounted on rubber mountings. This reduces vibration-induced stress on the driver.
- LCD display featured in the cockpit allows the driver to pre-select the drive characteristics. The software can be altered to cater for other adjustments of the drive parameters to suit the application.
- The drive pedal gives the speed required by the driver. Load and surface conditions do not alter the speed.
- Driving characteristics of the R 60 allow the truck to be held on a gradient or on uneven surfaces without touching the hand or foot brakes.
- Roomy footwell with inclined floor plate and non-slip rubber matting.
- Automotive style hand brake to the right of the driver's seat.
- Adjustable steering column facilitates an unstressed working position for the driver.
- Hand grip on the overhead guard and a wide step on the left hand side, visible from above, provide additional safety when getting in and out.

Steering.

- Hydrostatic power steering fitted with a priority valve.
- On-demand pump operation gives optimum energy economy.

Hydraulic system.

- Pump motor speed responds precisely to driver input at the valve lever, thus meeting exactly the demand of the application. This saves energy and makes better use of a battery charge cycle.
- The pump motor is mounted below the floor plate to reduce noise.
- The oil passes through a suction filter before flowing into the hydraulic assemblies. This reduces wear to a minimum.



Service brake.

Service brake.

- The service brake is a maintenance-free multiple disc brake which runs in an oil bath and is thus wear free. The multiple disc brake will never need new brake linings and is silent in operation. Half of the discs move with the wheel hub, the other half with the drive axle. Braking is achieved by pressing the discs together, the heat generated being taken up by the oil. This means perfect braking for the R 60 whatever the weather conditions.
- The multiple disc brake is encapsulated to protect it from dirt and water.
- Readjustments are a thing of the past.
- Maintenance-free and silent in operation, the multiple disc brake does away with brake servicing charges – which account for up to 30% of the maintenance costs of a conventional truck.

Safety.

The new R 60 complies with all applicable EC safety requirements and regulations.
It thus carries the “CE” symbol.

Quality.

All forklift trucks from STILL comply with the ISO 9001 quality standard. They are carefully constructed and manufactured. The materials used are checked to stringent standards.

Service.

The maintenance interval is 1000 hours. This is achieved with high technical quality and fewer components requiring maintenance.

For further information on the R 60 please visit: www.still.de/R60

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Achieve more.

R 60 35 50 11 e 05/05 TD Subject to technical modifications.