R 70 Technical Data.

Diesel Forklift Trucks

R 70–20i

R 70–25i

R 70–30i

Achieve more.

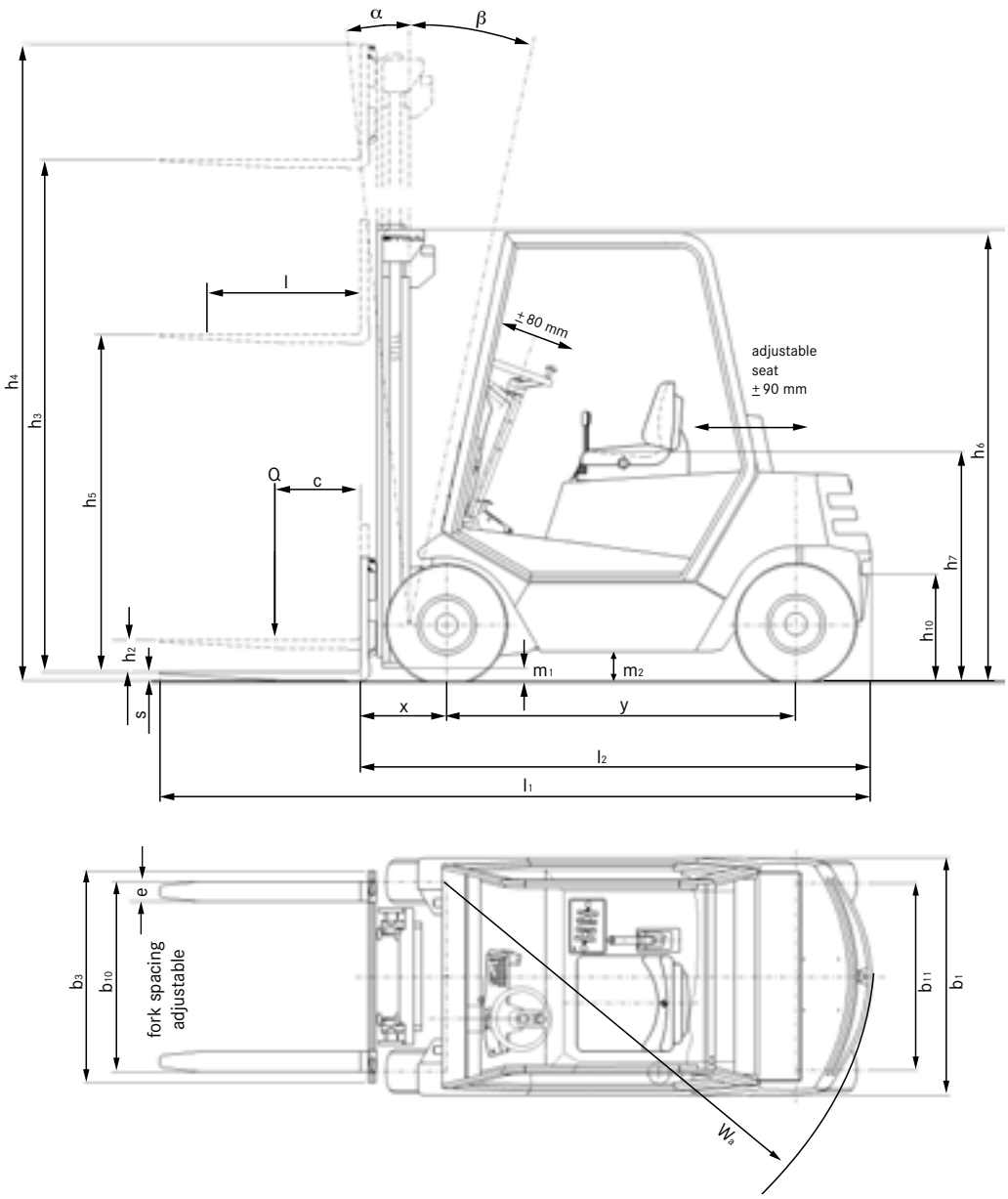
R 70 Technical Data.

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	STILL
	1.2	Manufacturer's model designation			R 70-20 I	R 70-25 I	R 70-30 I
	1.3	Power supply – electric, diesel, petrol, gas, mains electric			diesel	diesel	diesel
	1.4	Type of control – hand, pedestrian, stand-on, rider seated			rider seated	rider seated	rider seated
	1.5	Carrying capacity / load	Q	kg	2000	2500	3000
	1.6	Load centre	c	mm	500	500	500
	1.8	Load distance	x	mm	437	437	457
	1.9	Wheelbase	y	mm	1740	1740	1740
Weight	2.1	Weight		kg	3331	3744	4261
	2.2	Axle loadings laden front		kg	4805	5590	6472
	2.2.1	Axle loadings laden rear		kg	526	654	789
	2.3	Axle loadings unladen front		kg	1724	1740	1814
	2.3.1	Axle loadings unladen rear		kg	1607	2004	2447
Wheels | tyres	3.1	Tyres – rubber (V), superelastic (SE), pneumatic (L), polyurethane (PE)			SE/L	SE/L	SE/L
	3.2	Tyre size – front			23 x 9-10 (16 PR)	23 x 9-10 (16 PR)	23 x 9-10 (20 PR)
	3.3	Tyre size – rear			23 x 9-10 (16 PR)	23 x 9-10 (16 PR)	23 x 9-10 (16 PR)
	3.5	Wheels – number front (x = drive wheel)			2 x (4x)	2x (4x)	2x (4x)
	3.5.1	Wheels – number rear (x = drive wheel)			2	2	2
	3.6	Track width – front	b_{10}	mm	945 (1220)	945 (1220)	945 (1220)
	3.7	Track width – rear	b_{11}	mm	932	932	932
Dimensions	4.1	Tilt angle, mast / fork carriage forwards		degrees	6	6	6
	4.1.1	Tilt angle, mast / fork carriage backwards		degrees	11	11	11
	4.2	Closed height	h_1	mm	2350	2350	2350
	4.3	Free lift	h_2	mm	160	160	160
	4.4	Lift height	h_3	mm	3320	3320	3320
	4.5	Height, mast raised	h_4	mm	3965	3965	4130
	4.7	Height to top of overhead guard (cabin)	h_6	mm	2230	2230	2230
	4.8	Seat height	h_7	mm	1158	1158	1158
	4.12	Coupling height	h_{10}	mm	544	544	544
	4.19	Overall length	l_1	mm	3552	3552	3687
	4.20	Length to front face of forks	l_2	mm	2552	2552	2687
	4.21	Overall width	b_1	mm	1180 (1722)	1180 (1722)	1180 (1722)
	4.22	Fork thickness	s	mm	40	40	50
	4.22.1	Fork width	e	mm	100	100	100
	4.22.2	Fork length	l	mm	1000	1000	1000
	4.23	Fork carriage to DIN 15173 – class / form A or B			ISO II B	ISO II B	ISO III B
	4.24	Fork carriage width	b_3	mm	1040	1040	1100
	4.31	Ground clearance beneath mast, laden	m_1	mm	130	130	130
	4.32	Ground clearance at centre of wheelbase	m_2	mm	150	150	150
	4.33	Aisle width for pallets 1000 x 1200 wide	A_{st}	mm	3875	3875	4001
	4.34	Aisle width for pallets 800 x 1200 long	A_{st}	mm	4075	4075	4201
	4.35	Outer turning radius	W_a	mm	2238	2238	2344
	4.36	Inner turning radius	b_{13}	mm			
Performance	5.1	Speed laden		km/ h	24	24	24
	5.1.1	Speed unladen		km/ h	24	24	24
	5.2	Lift speed laden		m/ s	0.57	0.57	0.44
	5.2.1	Lift speed unladen		m/ s	0.60	0.60	0.43
	5.3	Lowering speed laden		m/ s	0.60	0.60	0.60
	5.3.1	Lowering speed unladen		m/ s	0.53	0.53	0.45
	5.5	Rated drawbar pull laden		N	16570	16570	16570
	5.5.1	Rated drawbar pull unladen		N	10820	10920	11390
	5.7	Gradeability laden		%	30	26	22
	5.7.1	Gradeability unladen		%	32	28	26
	5.9	Acceleration time laden		s	5.0	5.2	5.5
	5.9.1	Acceleration time unladen		s	4.5	4.6	4.7
	5.10	Brakes			electr. / hydr.	electr. / hydr.	electr. / hydr.
Engine	7.1	Engine manufacturer			Volkswagen	Volkswagen	Volkswagen
	7.1.1	Type			ADG	ADG	ADG
	7.2	Engine rated power to ISO 1585		kW	33	33	33
	7.3	Rated rpm		1/ min	2600	2600	2600
	7.4	No. of cylinders			4	4	4
	7.4.1	Displacement		cm^3	1896	1896	1896
	7.5	Fuel consumption		l/h			
Other	8.1	Drive control			Dieseltronic	Dieseltronic	Dieseltronic
	8.2	Operating pressure for attachments		bar	230	230	230
	8.3	Oil flow for attachments		l/min			
	8.4	Average noise peak at operator's ears		dB (A)	77	77	77
	8.5	Trailer coupling, type / DIN			pin	pin	pin

( ) Twin tyres 23 x 9-10/16 PR

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

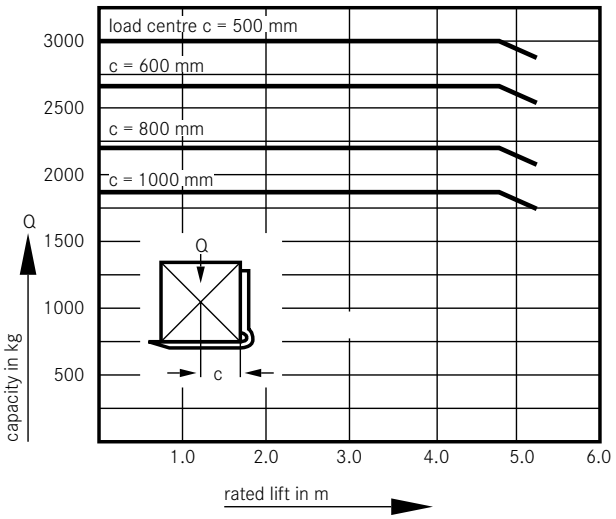


Mast types in use with pneumatic or superelastic tyres.

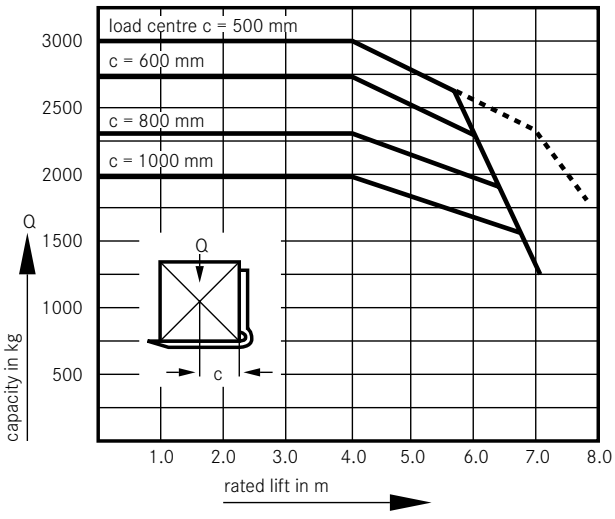
				Telescopic						Full free lift (HiLo)						Triple full-free-lift	
	Width B (single front wheel)	b_1	mm	1180				1280		1180				1280		1280	
	Width B (twin front wheels)	b_1	mm	1722						1722						1722	
	Tilt angle	α | β		6	9	6	11	6	9	6	9	6	12	6	9	3	8
R 70-20/25 I	Rated lift	h_3	mm	2320-2820		2920-4020		4120-5120		2500-3000		3100-4200		4300-5300*		3580-7780	
	Height, mast lowered	h_1	mm	1850-2100		2150-2700		2750-3250		1850-2100		2150-2700		2750-3250		1850-3250	
	Height, mast raised	h_4	mm	2965-3465		3565-4665		4765-5765		3160-3660		3760-4860		4960-5960		4225-8455	
	Free lift	h_2/h_5	mm	160						1220-1470		1570-2070		2120-2620		1220-2620	
	Length	l_2	mm	2552						2552						2577	
	Load distance	x	mm	437						437						462	
	Working aisle width Ast	A_{st}	mm	3875			4075			3875			4075			3900	4100
	Pallet 1000 x 1200 wide | 800 x 1200 long																
R 70-30 I	Rated lift	h_3	mm	2320-2820		2920-4020		4120-5120		2390-2890		2990-4090		4190-4690		3430	7630
	Height, mast lowered	h_1	mm	1850-2100		2150-2700		2750-3250		1850-2100		2150-2700		2750-3000		1850	3250
	Height, mast raised	h_4	mm	3130-3630		3730-4830		4930-5930		3200-3700		3800-4900		4993-5500		4255	8455
	Free lift	h_2/h_5	mm	160						1070-1320		1370-1920		1970-2220		1070	2470
	Length	l_2	mm	2687						2687						2712	
	Load distance	x	mm	457						457						482	
	Working aisle width Ast	A_{st}	mm	4001			4201			4001			4201			4026	4226
	Pallet 1000 x 1200 wide | 800 x 1200 long																

* R 70-25 only up to rated lift of 4800 mm

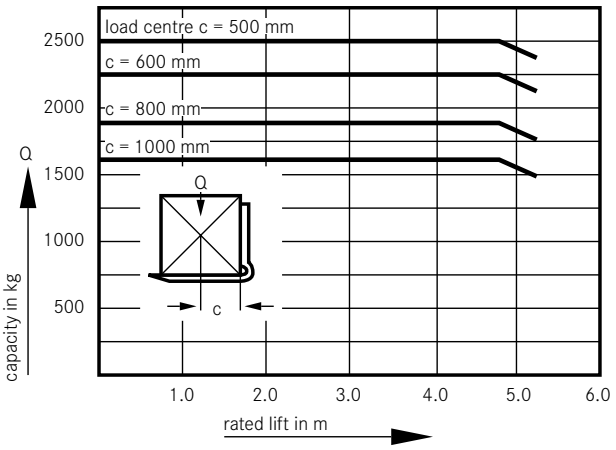
Capacity Chart R 70-30 Telescopic and HiLo Masts



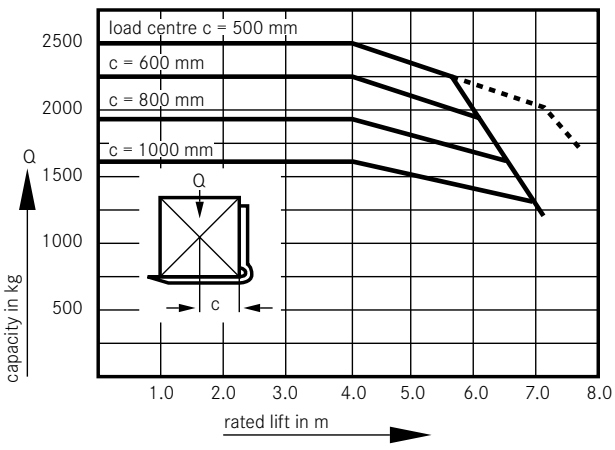
Capacity Chart R 70-30 Triple full free lift



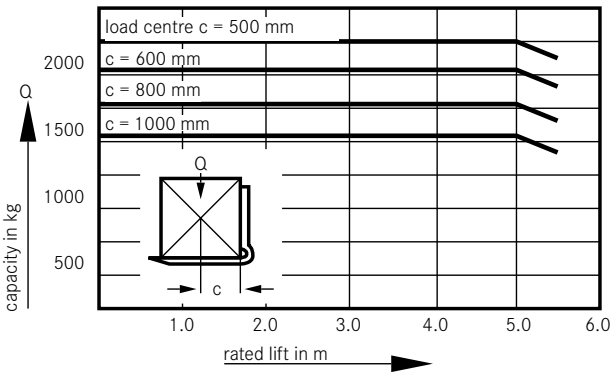
Capacity Chart R 70-25 Telescopic and HiLo Masts



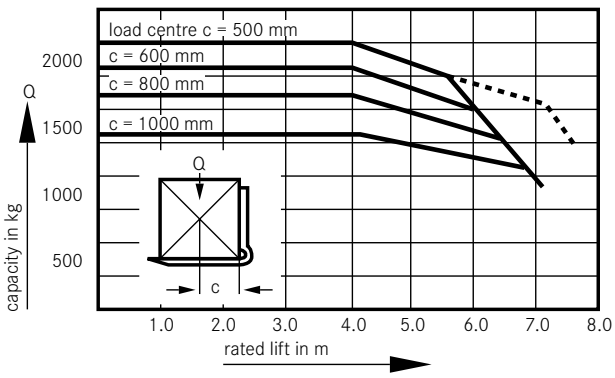
Capacity Chart R 70-25 Triple full free lift



Capacity Chart R 70-20 Telescopic and HiLo Masts



Capacity Chart R 70-20 Triple full free lift



Twin Tyres

Drive.

The R 70 features STILL's ASM diesel-electric drive technology, comprising an encapsulated 3-phase asynchronous traction motor, which gives the customer many benefits. Diesel-electric drives are particularly economical for many reasons:

- The fuel use is optimal even when the diesel engine is operating under partial load conditions. This means particularly good consumption figures.
- Maintenance costs are reduced: the engine always runs at optimal speed to give the required torque output with minimal wear.
- Wear free braking to a standstill is achieved through the drive, as is holding the truck in position when at rest. Even when the floor is sloping or uneven, the R 70 will remain stationary as long as the driver does not depress the drive pedal. Holding it with the brake pedal is not necessary. This simplification of operation takes the strain off the driver and allows him to concentrate on positioning the fork tips or the load.
- Plugging without tyre wear is possible thanks to the electric drive controller.
- The R 70 is friendly to the environment thanks to a diesel engine which always runs within its optimum torque range. Emissions are reduced to a minimum.

- The diesel-electric drive with ASM technology is highly responsive at all times. Thanks to the enclosed drive unit and reduced number of moving mechanical parts, it is also suitable for arduous applications. There is no hydraulic or mechanical transmission present.
- Another benefit of this type of drive is the smooth, step-less acceleration regardless of load, right up to maximum travel speed.
- Using one of 5 drive programs the driver can sensitively adjust the driving characteristics to different transport requirements at any time whilst travelling. This increases both throughput and safety.
- The driver can accelerate and brake with the drive pedal, in addition to which the R 70 will hold the speed set by the drive pedal. This greatly simplifies operation.
- Fast hoisting and slow driving (inching) can take place at the same time without special equipment, because the travel speed is controlled independently of the lift speed. This is completely free of wear, saves on operating costs and simplifies operation.
- The driving characteristics of the R 70 allow the truck to be held on a gradient or on uneven surfaces without touching the hand or foot brakes.

Service Brake.

The service brake is a maintenance free multiple disc brake which runs in an oil bath and is thus free of wear. It will never need new brake linings and is also silent in operation.

- The multiple disc brake is encapsulated to protect it from dirt and water.
- Readjustments are a thing of the past.
- The maintenance free, silent, multiple disc brake does away with the servicing costs common to other brakes, which constitute up to 30% of the overall maintenance costs of a truck.

Electrics.

The state-of-the-art electrical system works digitally. The exchange of information between electrical assemblies, e.g. between the drive controller and the cockpit, is achieved using the CAN bus system already used successfully in many roadgoing vehicles. The number of cables and plug connectors is reduced in comparison to the previous system and the reliability is increased. In addition to this, easier and more effective servicing is possible using computer diagnosis.

Driver's Compartment.

Continuous research and development have decisively improved the driver's compartment in the R 70:

- The cockpit has an LCD display and pre-selection facility for the drive characteristics. The driver can select the best acceleration and braking characteristics, as well as travel speeds, from 5 pre-set options. Other adjustments can be made to the drive parameters to suit the application conditions and the turn round of goods by simply altering the software.
- Foot pedals arranged as they are in a car*. No familiarisation needed.
- Roomy foot well with inclined foot plate and non-slip rubber matting.
- Adjustable steering column and longitudinal and rake adjustment of the seat provide an extremely comfortable working position for any physique.
- The driver is protected from vibrations, potentially hazardous to health by:
  - the resiliently mounted drive unit
  - the driver's compartment fitted to the truck frame with resilient rubber mounts
  - the hydraulically damped seat, adjustable to the driver's weight.

Mast.

STILL clear view masts in Telescopic, HiLo and Triplex designs for every application:

- Telescopic: Suitable for most applications. Economical mast design. The hoist chains are run in protective guide rails, preventing noise and increasing chain life.
- HiLo: For high stacking under low ceilings. Utilises the space right up to the roof.
- Triplex: For applications with low doorways and high stacking heights. Utilises the space right up to the roof.
- Fork carriage: Completely redesigned for this truck, gives a clear view onto the load being picked up, thanks to its optimised profiles. The hydraulic hoses for attachments are run in the dead visibility area of the mast sections – with no hose reels – for wear-free operation.

Overhead Guard.

So that the R 70 is adaptable to the widest variety of applications and driver requirements, the overhead guard is available in different designs. Retro-fitting a cab to the R 70 is possible with ease when the truck is already fitted with a roof cover.

* available with twin pedal control if required.

For further information on the R 70
please visit: www.still.de/R70

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Subject to technical modifications.