

R 70 Technical Data.

Diesel Forklift Trucks

R 70-20i

R 70-25i

R 70-30i

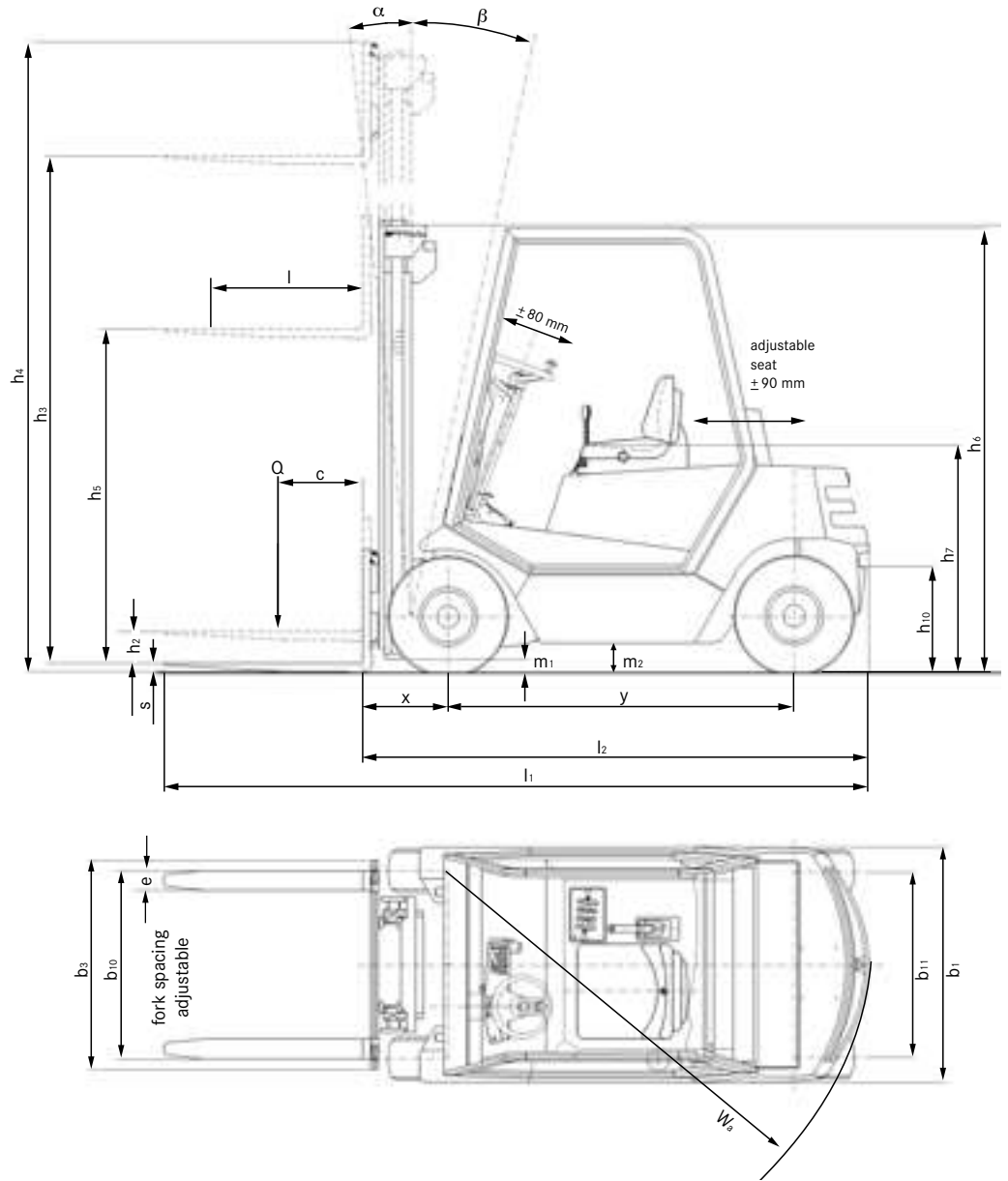


R 70 Technical Data.

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.

				STILL	STILL	STILL	
Characteristics	1.1	Manufacturer					
	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
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
	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)		2x (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		Grad	6	6	6
	4.1.1	Tilt angle, mast / fork carriage backwards		Grad	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

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

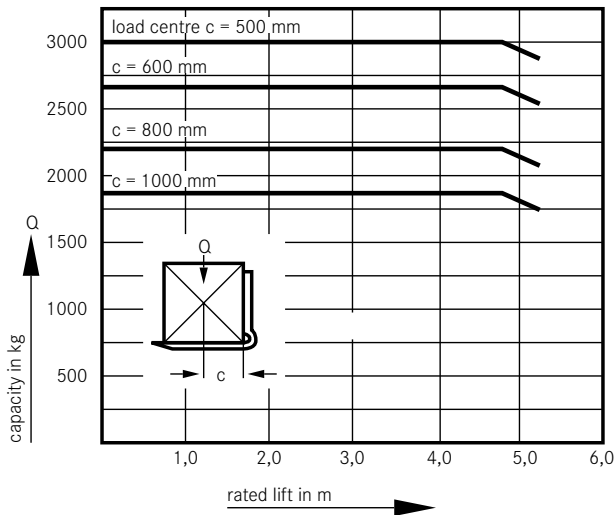


Mast types in use with pneumatic or superelastic tyres.

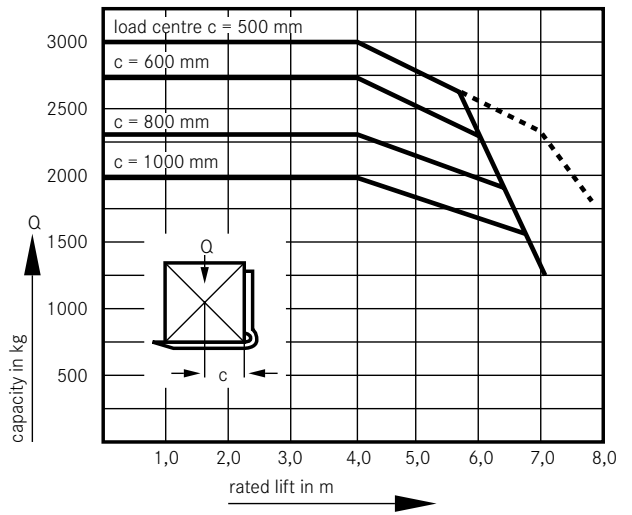
		Telescopic						Full free lift (HiLo)						Triple full-free-lift		
Width B (single front wheel)		b ₁	mm		1180	1280		1180		1280		1280				
Width B (twin front wheels)		b ₁	mm		1722											
Tilt angle		α β	6	9	6	11	6	9	6	9	6	12	6	9	3	8
R70-20/25 I	Rated lift	h ₃	mm	2320-2820	2920-4020	4120-5120	2500-3000	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						2577						
	Load distance	x	mm	437						462						
	Working aisle width Ast	A _{ast}	mm	3875			4075			3875		4075		3900	4100	
	Pallet 1000 x 1200 wide 800 x 1200 long															
R70-30 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						2712						
	Load distance	x	mm	4001			457			4001		457		482		
	Working aisle width Ast	A _{ast}	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

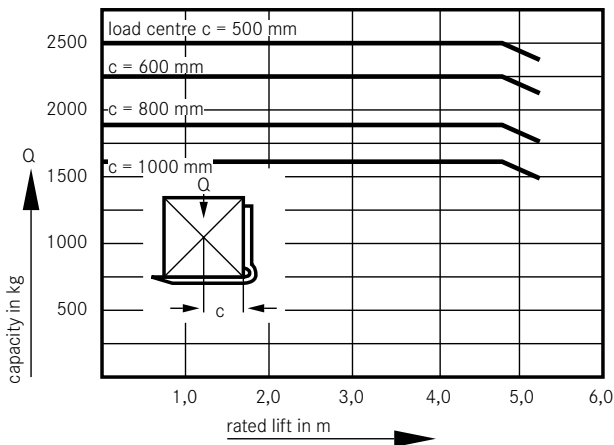
Capacity Chart R 70-30 Telescopic and HiLo Masts



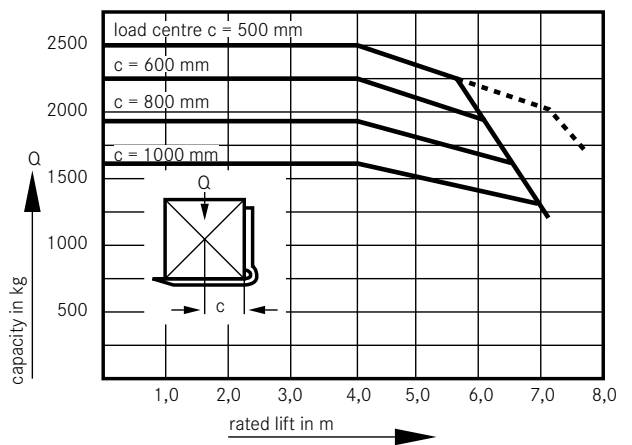
Capacity Chart R 70-30 Triple full free lift



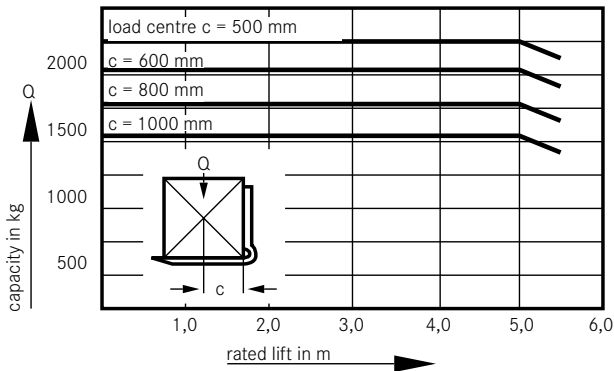
Capacity Chart R 70-25 Telescopic and HiLo Masts



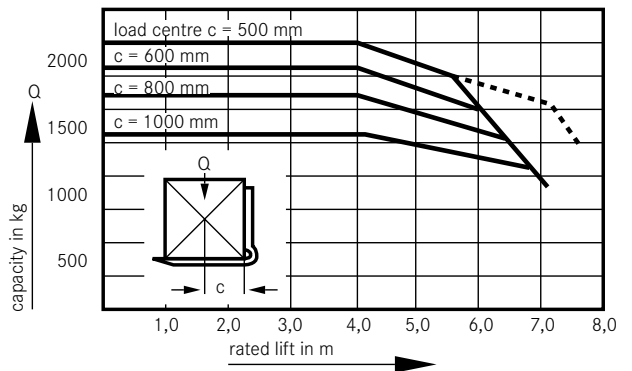
Capacity Chart R 70-25 Triple full free lift



Capacity Chart R 70-20 Telescopic and HiLo Masts



Capacity Chart R 70-20 Triple full free lift



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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 itself is optimally utilised 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 the optimal speed to give the required torque output with minimal wear; also, the ASM drive is 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.

R 70 Technical Data.

- Diesel-electric drives with ASM technology have a very high level of availability and are suitable for severe applications by virtue of the enclosed drive unit and a greatly reduced number of moving mechanical parts. There is no hydraulic or mechanical transmission present.
- The benefit of this type of drive lies in completely smooth and efficient acceleration regardless of the load or external temperature.
- 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 means that operation is simplified.
- 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 roadways 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.

Constant 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: The mast suitable for most applications. Economical mast design. The hoist chains are run in protective guide rails. This prevents noise and increases chain life.
- HiLo: For high stacking under low ceilings. Utilises the space right up to the roof.
- Triplex: For applications with low doorways and greater 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.

Steering.

The light, fully hydraulic power steering provides great manoeuvrability and thus a high turn round of goods.

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.

Safety.

The STILL clear view mast and good all round visibility give the driver the best security against running into people and objects. The new R 70 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.

* available with twin pedal control if required.



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

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