

# Self-propelled crane LI 1020

# Technical characteristics.



# LIEBHERR

This is how truck cranes are built.

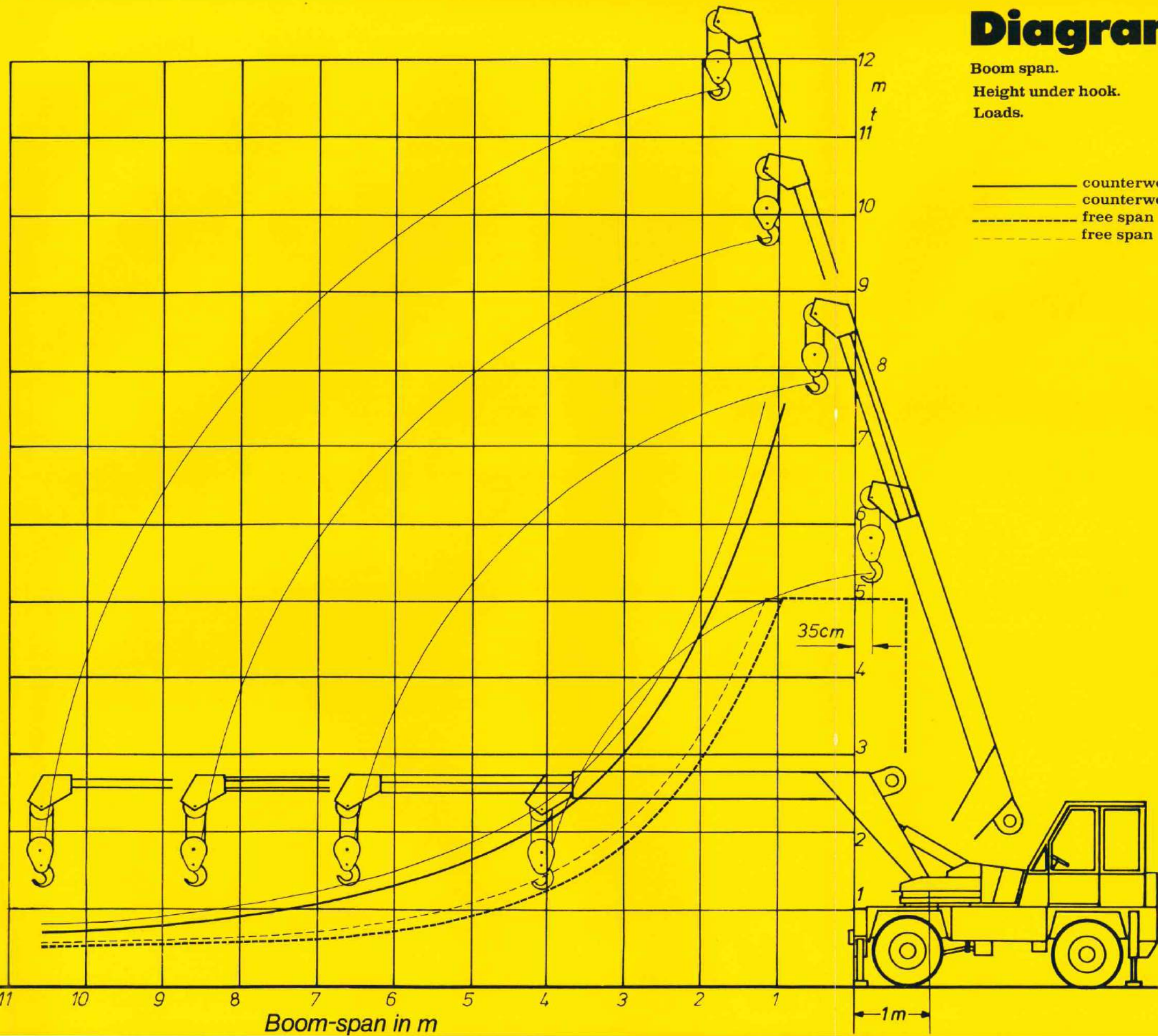
# Diagram.

Boom span.

Height under hook.

Loads.

- counterweight 75 % toppling load
- counterweight 85 % toppling load
- - - free span 75 % toppling load
- - - free span 85 % toppling load



**Truck crane LI 1020 described with figures.**

# Crane Chassis.

- Chassis:** High torsion strength construction steel frame designed by us.  
**Engine:** 3 cylinder Deutz-Diesel – air cooled – type F 32912 power 49 HP DIN at 2300 r. p. m.  
**Max. engine torque:** 180 kg/m at 1600 r. p. m.  
**Tank capacity:** 100 l.  
 Silent engine on request.  
**Clutch:** F + S dry disk.  
**Gearbox:** ZF – 4/1 gears with synchronized blocking.  
**Axles:** driven forward differential in form of support axle.  
 rear steering gear consisting of axle with hydraulically blocking and transversal universal joints.  
**Tyres:** Front: twin solid tyres – 8.25 – 20 Super 14 PR  
 Rear: single solid tyres 7.50 – 20 Super 12 PR.  
**Steering gear:** ZF – hydrostatic steering gear, turning radius: 4.75 m.  
**Brakes:** Service brake: hydraulic servo brake controls all wheels.  
 Hand brake: mechanical effect on transmission shaft.  
**Driver's cab:** adjustable spring driver's seat – Heating – Safety glass, removable cab.  
**Electrical installation:** 12 V, lighting in compliance with STVZO (road lights).  
**Supports:** Front support axle: folding supports. To rear of steering axle: fixed, vertical telescopic supports.

## Running speed.

Speed (k.p.h.) engine speed  $u$ : 2300 r.p.m.

Gear	1	2	3	4	reverse
k.p.h.	3,1	7,4	13,4	19,0	3,3

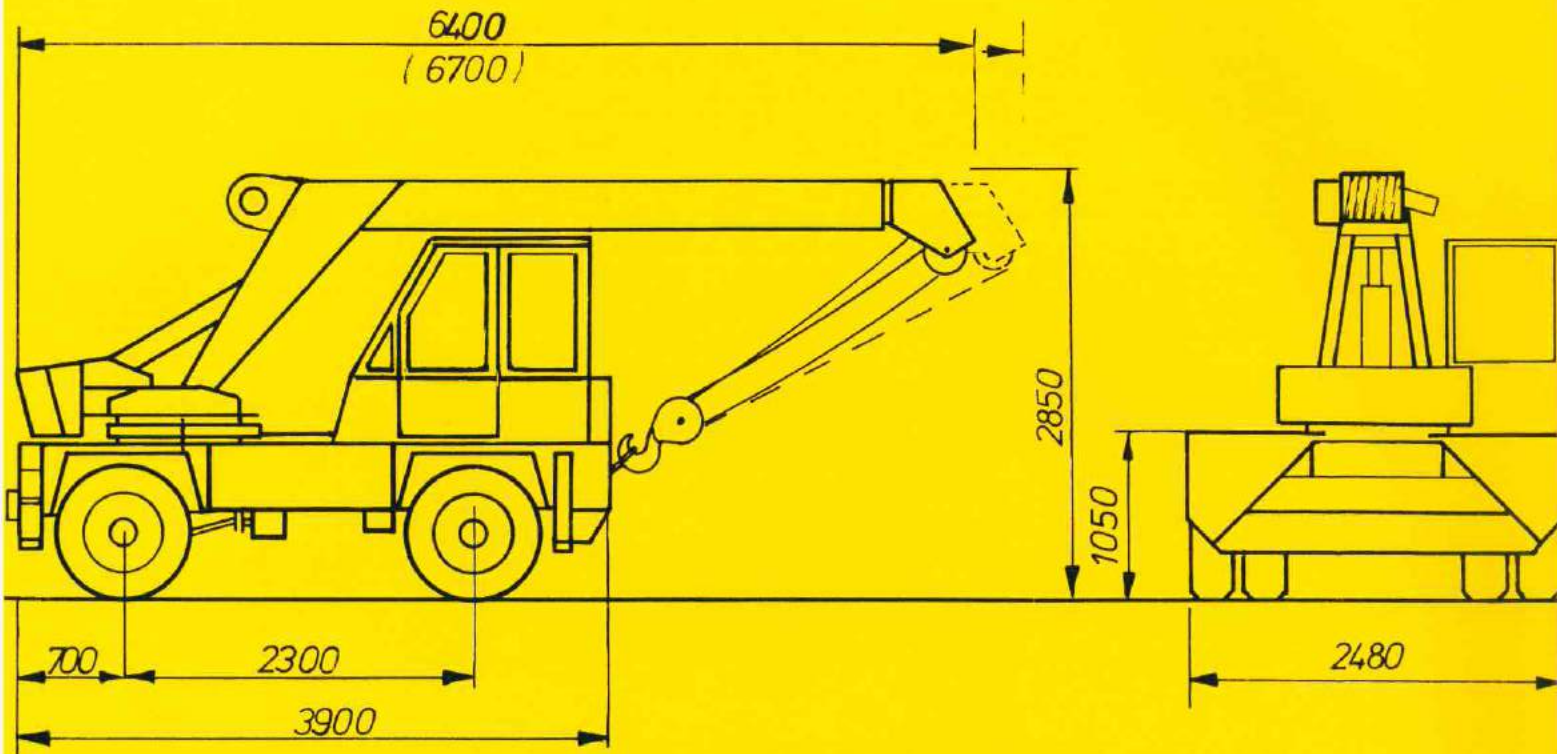
Crane speed at engine speed  $u = 2300$  r.p.m.

working movements	progressive
ascent – descent m/min	0–87.2 m single cable
rotation r. p. m.	0 – 3
pivoting (secs)	approx 10
telescoping (secs)	approx 10 secs for about 4.4 m hook not loaded.

Axle loading off load.

axle	drive axle	steering axle	load limit of steering axle
in driving position	3.750 kg	5.550 kg	6.400 kg
in operating position	6.130 kg	3.170 kg	
total weight: 9300 kg			

# Measurements.



# Construction of crane.

- Construction of tower:** High torsion strength steel construction linked with chassis by a ball-bearing pivoting crown gear. Pivoting through 360°.
- Crane control:** Diesel – hydraulic – 2 high pressure gear pumps for open two circuit hydraulic system.
- Hydraulic system:** High capacity system with transmission for a speed about double that of the unloaded hook. With maximum speed limiter and lowering adjustment, load adjustment.
- Hoisting winch:** Hydraulic meter – planetary gears, winch drum – spring loaded brake, four strand hoisting cable.
- Rotational system:** Hydraulic motor with demultiplication gear and operating brake.
- Pivoting system:** 1 hydraulic traction brake with final position clamping.
- Control:** 1 manual control lever for hoisting winch and pivoting system, 1 manual control lever for rotational system and 1 manual lever for crane support. All movement progressively adjustable and can be performed simultaneously.
- Boom:** box beam with 1 to 3 extensions telescoping manually. Completely automatic even under full load – 2.3 to 4.4 m extension – total telescoping length: 11.3 m (3rd. extension manual).
- Safety Systems:** mechanical torque limiter, applied throughout pivoting angle. End of travel control switch for upper and lower consolidation.

# Table of loads for LI 1020.

Loads in metric tons.

Boom length m	Spans m	Height under m	Load with free span		Counterweight	
			75%	85%	75%	85%
4,5	1	5,1	7,2	7,2	4,7	5
	2	4,6	4,5	4,9	2,9	3,3
	3	3,6	2,9	3,3	1,7	2,0
	4	1,3	2,1	2,4	1,2	1,4
7,5	1	7,6	7,2	7,2	4,7	5
	2	7,4	4,5	4,9	2,9	3,3
	3	6,8	2,9	3,3	1,7	2,0
	4	6,2	2,1	2,4	1,2	1,4
	5	5,2	1,5	1,8	0,8	1,0
	6	3,4	1,2	1,45	0,6	0,8
	6,5	1,3	1,0	1,3	0,5	0,65
9,5	1,5	9,6	5,5	6	3,7	4,0
	2	9,4	4,5	4,9	2,9	3,3
	3	9,1	2,9	3,3	1,7	2,0
	4	8,6	2,1	2,4	1,2	1,4
	5	7,9	1,5	1,8	0,8	1,0
	6	7,0	1,2	1,45	0,6	0,8
	7	5,7	1,0	1,3	0,5	0,65
	8	3,7	0,7	1,0	0,4	0,55
	8,5	1,3	0,65	0,95	0,38	0,5
11,3	2	11,6	4,5	4,9	2,9	3,3
	3	11,3	2,9	3,3	1,7	2,0
	4	10,8	2,1	2,4	1,2	1,4
	5	10,4	1,5	1,8	0,8	1,0
	6	9,7	1,2	1,45	0,6	0,8
	7	8,8	1,0	1,3	0,5	0,65
	8	7,8	0,7	1,0	0,4	0,55
	9	6,4	0,65	0,95	0,38	0,5
	10	4,3	0,55	0,8	0,35	0,42
	10,5	1,3	0,5	0,7	0,3	0,36

## Remarks concerning load table.

1. Hoisted loads in no case exceed 75% to 85% of the toppling load.  
75% of toppling load meets German Standards.
2. Hoisting accessories are included in loads.
3. Mobile stability only exists totally when tyre pressure is correct.
4. Stability can only be attained on stable ground with equal consistency.

Subject to technical modification