



**50 t** metric



**210 kW**

# 650 HD

*Serie C*

**schwerer HD Seilbagger / Kran**  
**HD Crawler Crane (Duty Cycle)**



# SENEBOGEN<sup>®</sup>

**crane line**

Courtesy of Crane.Market



- Engine output 210 kW (286 HP)
- Very strong, state of the art hydraulic system
- Electronic speed sensing
- Additional hydraulic circuits
- Line pull 2 x 16 t
- Precise control and high line speeds
- Robust, very service-friendly design

## Specifications



### Engine

Caterpillar Dieseleengine 3126B with direct injection, watercooled, 210 kW (286 HP) at 2100 rpm

Dry air filter with main and safety element.

Electric system 24 Volt, high efficiency cold starting batteries. Idling speed function.

Fuel tank capacity approx. 450 l



### Hydraulic System

All hydraulic pumps are variable displacement piston pumps with individual regulation for each pump. The pumps are equipped with an energy-saving flow-on-demand control system and pressure cut-off for high efficiency and reduced loss of energy.

Max. flow rates:

320 l/min for travel and winch 1

320 l/min for travel and winch 2

220 l/min for swing and boom hoist

Working pressure up to 330/350 bar.

Hydraulic tank capacity approx. 650 l

#### Optional:

Additional hydraulic packages for external user (e.g. casing machines, vibrators, etc.)

Hydraulic oil filter with long intervals between change. Large dimensioned hydraulic cooling system. Servo-assisted joy-stick controls according to ISO-System. Central service tableau. Decomposable hydraulic oil (synthetic) can be used.

Hydro Clean hydraulic superfine filter with water absorption (optional).



### Winch 1 - Winch 2

Each winch is driven independently by a directly flanged hydraulic piston motor. Hydraulic brake valves for wear resistant braking of loads. Strong low maintenance oil bath planetary gears. The clutch and brake functions are effected through large dimensioned, maintenance-free, low-wearing, oil-lubricated multiple disc brakes.

Grab closing automatics for 2 rope grab operation - dividing the load equally between both winches.

Combilink - for dragline operation, allows power load lowering for the dredging winch.

Winches	12 t	16 t
Single line pull kN 1.Layer	120	160
Rope dia. mm	22	26
Line speed m/min	70/126	60/116

Optional: Additional crane winch



### Swing System

The swing function is independent operated through 1 swing drive with hydraulic piston motor and oil bath planetary gear. Spring-loaded hydraulically releasable multiple-disc brake, self-closing. Swing speed from 0 to 3.7 rpm, 0 to 1 rpm for crane operation.

Precision swing operation with preselector switch.

Large dimensioned swing bearing, external gears thus less tooth pressure and moments.



### Boom Hoist Operation

Independent operation via axial piston motor, spring-loaded hydraulically releasable multiple-disc brake, planetary gear and winch drum with special scores. Max. line pull 52 kN (5.3 t). Drum pawl lock provides an integral drum lock.



### Upper Structure

Torsion-free precision machined upper frame. All components are located clearly and service friendly. Engine installation very service-friendly in longitudinal direction with low noise level.

Counterweight 18 t



### Undercarriage

Strong hydraulically extendable crawler undercarriage. Each track is independently driven by an axial piston motor through planetary final drive. Spring loaded hydraulically releasable multiple-disc brake.

Maintenance-free tractor type crawler with hydraulic track-tensioning device. Tractor type crawler with triple bar shoes. Excellent rough terrain travel. Travel speed with crawler B6 is 0 - 2.1 km/h.



### Working Equipment

Tubular boom Type 1370, 10.3m-52.3 m, double sheave hammer head, fixed jib, auxiliary jib. Special attachment for crane/grab/dragline operation. Complete crane safety device with electronic SLI-safe load indicator.



### Operator's Cab

Comfortable F 2000 operator's cab, resiliently mounted, with exceptional sound suppression, large-capacity compartment with excellent allround visibility, all-weather design with tinted safety glass, front wind-screen with ventilation position stows under the roof, large-size skylight, window wiper/ washer system for front windscreen and skylight, front guard panel, large-capacity stowage rack, ergonomically designed comfortable seat, resiliently mounted, adjustable in suspension and height, seat cushion adjustable in depth and angle, adjustable lumbar support, wide adjustable armrests, clearly laid out instrument panel with ergonomically shaped control levers, adjustable steering column (mobile machines only), infinitely variable cab heating system, outside air and circulating air stages, with particle filter. Five adjustable air vents for optimum work environment, new SDS diagnostic system for monitoring of all essential machine and engine functions, includes visual and audible warning of any malfunctions. Wide range of additional features and equipment.



### Service Weight

Base machine 650 HD, 2 x 16 t free fall winches, 210 kW diesel engine, 10.3 m basic boom, counterweight 18 t. 40 t hook,

crawler B6, 800 mm triple bar shoes:

approx. 54 t

Note:

The shown weights may vary with different equipment!

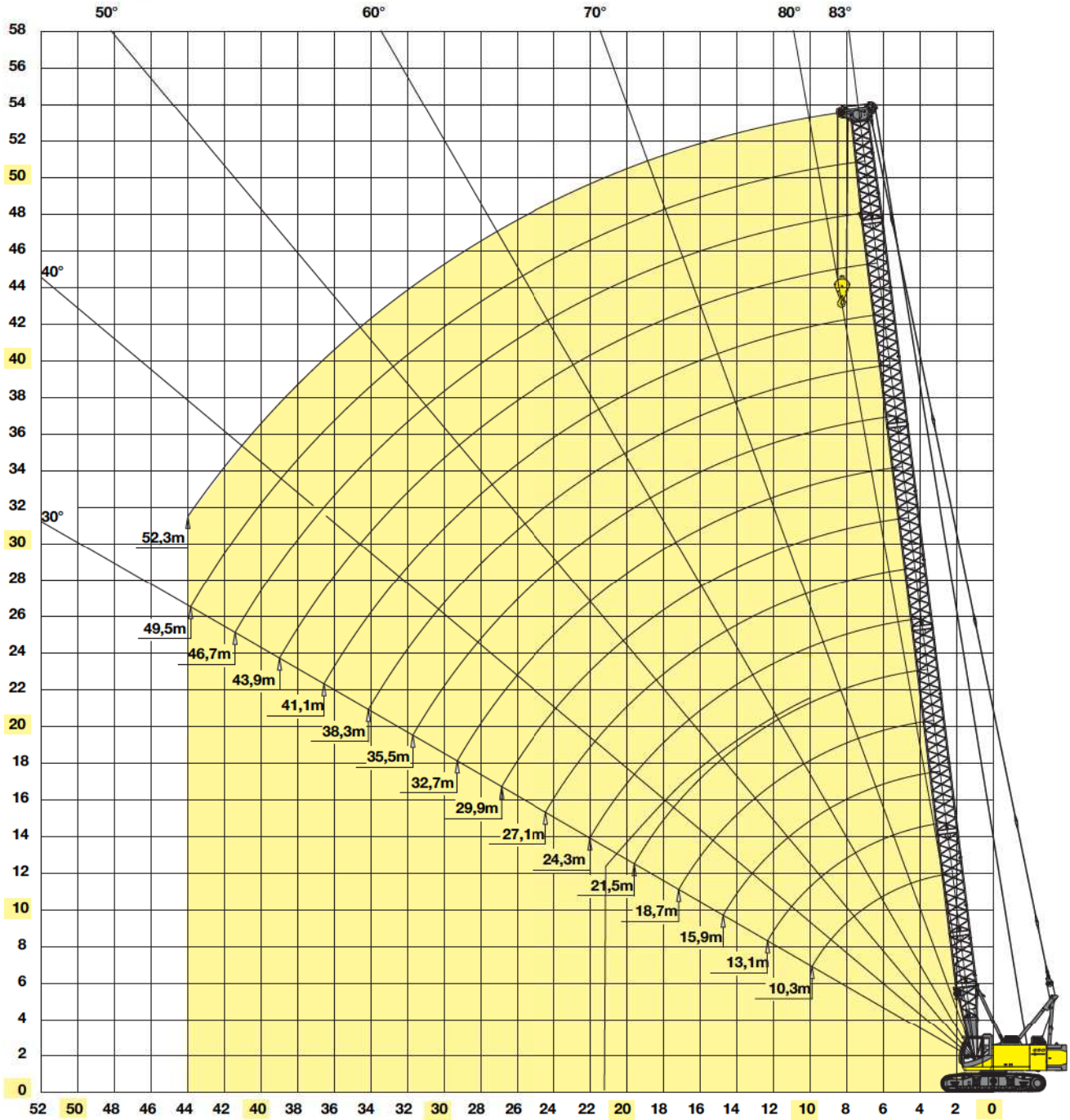
# Leading through Innovation

Subject to technical modification!



## Kranausrüstung - Hauptausleger

### Crane Equipment - Main Boom



Auslegerkonfiguration - Hauptausleger		boom configuration - main boom																
Auslegerlänge [m]	boom length [m]	10,3	13,1	15,9	18,7	21,5	24,3	27,1	29,9	32,7	35,5	38,3	41,1	43,9	46,7	49,5	52,3	
Fußstück Typ 1370	lower boom type 1370	4,2m	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Zwischenstück Typ 1370	boom insert type 1370	2,8m	0	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1
Zwischenstück Typ 1370	boom insert type 1370	5,6m	0	0	0	1	1	2	2	1	1	2	2	1	1	2	2	1
Zwischenstück Typ 1370	boom insert type 1370	11,2m	0	0	0	0	0	0	1	1	1	1	2	2	2	2	3	
Zwischenstück konisch Typ 1370/610	tapered boom insert type 1370/610	5,6m	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Rollenkopf T50	boom head T50	0,5m	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Schnabelausleger S12.1 (optional)	auxiliary jib S12.1 (option)	12,0t	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

## Traglasten am Hauptausleger Lifting chart for Main Boom 50 t x 3 m

Gegengewicht	18,0 t	counterweight	18,0 t
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Ausladung Radius[m]	Auslegerlänge / boom length [m]															
	10,3	13,1	15,9	18,7	21,5	24,3	27,1	29,9	32,7	35,5	38,3	41,1	43,9	46,7	49,5	52,3
3,0	50/3,1	46/3,4	43,0/3,8													
4,0	44,1	42,5	41,6	38,5/4,1	34,0/4,5	30,4/4,8										
5,0	37,6	36,6	36,0	34,2	31,8	29,7	26,8/5,1	23,8/5,5	20,8/5,8							
6,0	31,1	30,6	30,3	29,4	27,9	26,5	24,6	22,7	20,5	18,5/6,2	16,3/6,5	14,2/6,8				
7,0	24,8	24,7	24,6	24,5	24,0	23,3	22,0	20,7	18,9	17,4	15,8	14,1	12,1/7,2	10,6/7,5	9,1/7,9	
8,0	20,5	20,4	20,3	20,2	20,1	20,1	19,4	18,7	17,4	16,2	14,8	13,3	11,6	10,4	9,1	7,8/8,2
9,0	17,5	17,3	17,2	17,1	17,0	17,0	16,9	16,6	15,8	14,9	13,8	12,6	11,1	9,9	8,7	7,6
10,0	15,2	15,0	14,9	14,8	14,7	14,7	14,6	14,6	14,2	13,6	12,8	11,8	10,5	9,5	8,4	7,3
11,0	14,5/10,3	13,2	13,1	13,0	12,9	12,9	12,8	12,8	12,7	12,4	11,8	11,0	9,9	9,0	8,0	7,0
12,0		11,8	11,7	11,6	11,5	11,4	11,3	11,3	11,2	11,1	10,8	10,3	9,4	8,6	7,6	6,8
13,0		10,9/12,7	10,5	10,4	10,3	10,3	10,1	10,1	10,0	9,9	9,8	9,5	8,8	8,1	7,3	6,5
14,0			9,5	9,4	9,3	9,3	9,1	9,1	9,0	8,9	8,8	8,8	8,3	7,7	6,9	6,2
15,0			8,7	8,6	8,5	8,4	8,3	8,3	8,2	8,1	8,0	8,0	7,7	7,2	6,6	5,9
16,0			8,6/15,2	7,9	7,8	7,7	7,6	7,6	7,5	7,4	7,3	7,3	7,1	6,8	6,2	5,7
17,0				7,3	7,2	7,1	7,0	7,0	6,9	6,8	6,6	6,6	6,5	6,3	5,9	5,4
18,0				7,0/17,6	6,6	6,6	6,4	6,4	6,3	6,2	6,1	6,1	6,0	5,9	5,5	5,1
19,0					6,2	6,1	5,9	5,9	5,8	5,7	5,6	5,6	5,5	5,4	5,2	4,8
20,0					5,7	5,7	5,5	5,5	5,4	5,3	5,2	5,2	5,1	5,0	4,8	4,6
22,0						5,0	4,8	4,8	4,7	4,6	4,4	4,4	4,3	4,3	4,1	4,0
24,0						4,8/22,4	4,2	4,2	4,1	4,0	3,8	3,8	3,7	3,7	3,5	3,5
26,0							4,0/24,9	3,7	3,6	3,5	3,4	3,4	3,3	3,2	3,0	3,0
28,0								3,5/27,3	3,2	3,1	2,9	2,9	2,8	2,7	2,6	2,5
30,0									2,9/29,7	2,7	2,6	2,6	2,5	2,4	2,3	2,2
32,0										2,4	2,3	2,3	2,2	2,1	1,9	1,9
34,0										2,4/32,1	2,0	2,0	1,9	1,8	1,7	1,6
36,0											2,0/34,6	1,8	1,7	1,6	1,4	1,4
38,0												1,7/37,0	1,5	1,4	1,2	1,1
40,0													1,3/39,4	1,2	1,0	1,0
42,0														1,0/41,8	0,9	0,8
44,0															0,7	0,7
46,0															0,7/44,3	
48,0																
50,0																
Strangzahl / parts reeving	26 mm	5	4	4	4	3	3	3	2	2	2	2	2	2	2	2
Strangzahl / parts reeving	22 mm	6	6	6	5	4	4	4	3	3	3	2	2	2	2	2

### Anmerkung:

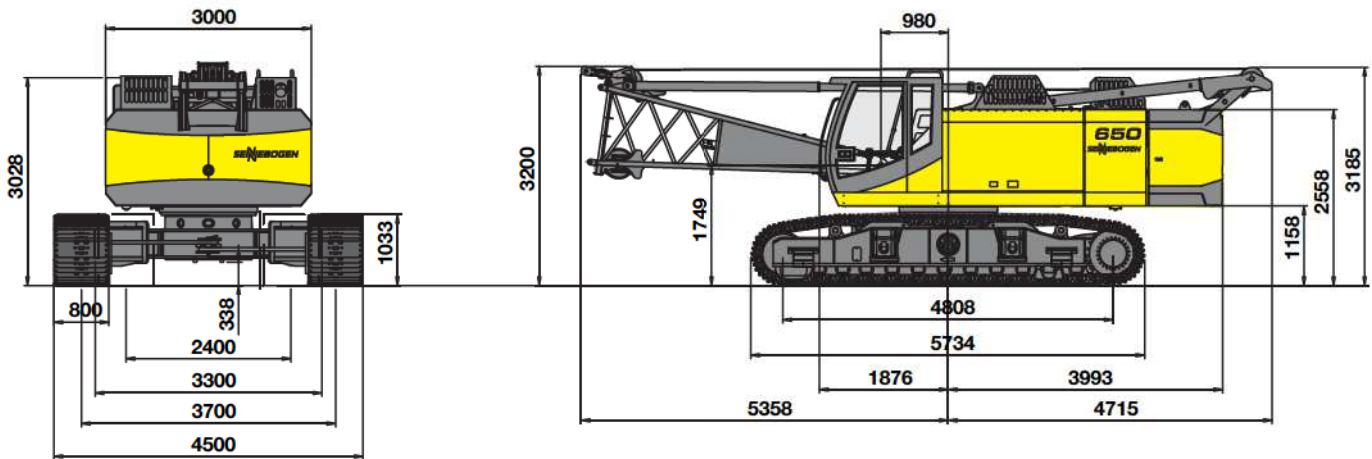
- Die angegebenen Traglastwerte gelten für ebenen und festen Stand der Maschine.
- Traglastwerte sind in Tonnen angegeben und gelten für 360 Grad.
- Die Traglasten berücksichtigen die Normen DIN 15019/2 und ISO 4305 (Kippwinkel 4°)
- Das Gewicht der Lastaufnahmemittel (Haken, Gehänge) ist von den Traglasten abzuziehen.
- Die Traglastwerte gelten für maximale Unterwagenspurbreite.
- Lastwerte müssen begrenzt oder vermindert werden, um ungünstige Bedingungen zu berücksichtigen, wie weichen oder unebenen Boden, schräge Gefälle, Wind, Seitenlasten, schwingende Lasten, Rucken oder plötzliches Stoppen der Ladungen, Unerfahrenheit des Personals, Fahren mit Last.
- Zulässiger Seilzug je Strang bei Kranbetrieb ist  
bei Seildurchmesser 26 mm - 12.000 kg  
bei Seildurchmesser 22 mm - 8.500 kg
- Traglastwerte gelten für den SH-Ausleger (Auslegerzusammenbau gemäß Bedienungsanleitung)
- Traglastwerte gelten für optimalen Auslegerzusammenbau und Rollenkopf mit Kunststoffrollen.
- Die farblich gekennzeichneten Traglasten sind nicht durch die Stand-sicherheit gegeben, sondern basieren auf anderen Faktoren
- Die minimale Strangzahl im Hubwerk ist 2.
- Die angegebenen Traglastwerte sind nur zur Orientierung.  
Die jeweils gültigen Traglastwerte entnehmen Sie bitte der Betriebsanleitung

### Notes:

- The rated loads shown are based on the machine on firm level ground without travelling.
- The rated loads shown are in metric tons valid for 360 degrees swing.
- Liftcrane capacities are calculated to comply with DIN 15019/2 and ISO 4305 (tipping angle 4 deg.)
- The rated loads shown include the weight of all lifting attachments, such as hook and bucket.
- In operation crawler must be extended.
- The users must derate or limit the lifted loads to allow for adverse conditions such as soft or uneven ground, out of level conditions, wind, side loads, pendulum action, jerking or sudden stopping of loads, inexperience of personnel and travelling with a load.
- Max. single line pull for crane operation with rope diameter 26 mm - 12.000 kg with rope diameter 22 mm - 8.500 kg
- Loads are valid for the SH-boom (boom assembly acc. operation manual)
- Lifting chart values apply to optimum boom assembly androlley head with plastic trolleys.
- Colored capacities are based on factors other than those which would cause a tipping condition
- The minimum number of lines at the main hoist is 2.
- The lifting capacities above are for reference only.  
For actual lifting capacities please refer to the load chart in operator's manual.



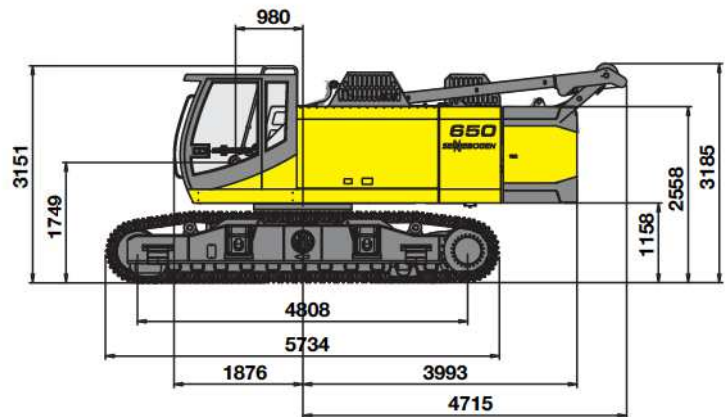
## Maße Dimensions



## Transportmaße Transport Dimensions

### Grundmaschine - Basemachine

Bodenplatten shoe width	Min.Transportbreite Min. Transport width
800 mm	3300 mm
900 mm	3300 mm



## Haken Hooks

### Für 120 KN Winde mit 22 mm Seildurchmesser - For 120 KN Winch with 22 mm rope diameter

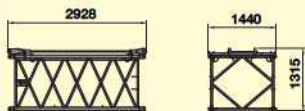
Kapazität Capacity	Gewicht Weight	Seilstränge und max. Traglast - Nr. of ropes and max. rated Load														
		14	13	12	11	10	9	8	7	6	5	4	3	2	1	
10 t	200 kg															8.500
25 t - 1 Rolle	400 kg													25.500	17.000	8.500
40 t - 2 Rollen	500 kg											40.000	34.000	25.500	17.000	8.500
60 t - 3 Rollen	600 kg										50.000	42.500	34.000	25.500	17.000	8.500

### Für 160 KN Winde mit 26 mm Seildurchmesser - For 160 KN Winch with 26mm rope diameter

Kapazität Capacity	Gewicht Weight	Seilstränge und max. Traglast - Nr. of ropes and max. rated Load														
		14	13	12	11	10	9	8	7	6	5	4	3	2	1	
15 t	300 kg															12.000
40 t - 1 Rolle	500 kg												40.000	36.000	24.000	12.000
60 t - 2 Rollen	600 kg											50.000	48.000	36.000	24.000	12.000

## Transportmaße

### Transport Dimensions



Auslegerzwischenstück 2,8m Typ 1370 (mit Abspannung)  
boom insert 2,8m type 1370 (with pendants)

Gewicht / weight: 310 kg



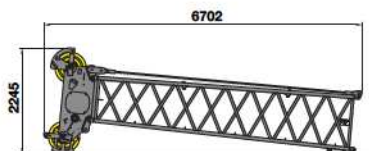
Auslegerzwischenstück 5,6m Typ 1370 (mit Abspannung)  
boom insert 5,6m type 1370 (with pendants)

Gewicht / weight: 490 kg



Auslegerzwischenstück 11,2m Typ 1370 (mit Abspannung)  
boom insert 11,2m type 1370 (with pendants)

Gewicht / weight: 870 kg

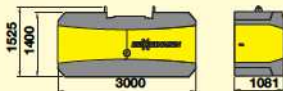


Auslegerkopfstück 5,6m Typ 1370 mit Abspannung  
und Auslegerkopf T50

Upper boom 5,6m type 1370 with pendants  
and boom head T50

Breite / width: 1420mm

Gewicht / weight: 1100 kg (1250 kg mit Stahlrollen/  
with steel sheaves)



Gegengewicht  
Counterweight

Gewicht / weight: 18.000 kg



## Vorsprung durch Innovation

## Leading through Innovation

SENNEBOGEN Maschinenfabrik GmbH  
Hebelstr. 30 · D-94315 Straubing  
Tel: +49(0)9421/540-144/146/153 Fax: 43882  
E-mail: marketing@sennebogen.de

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