

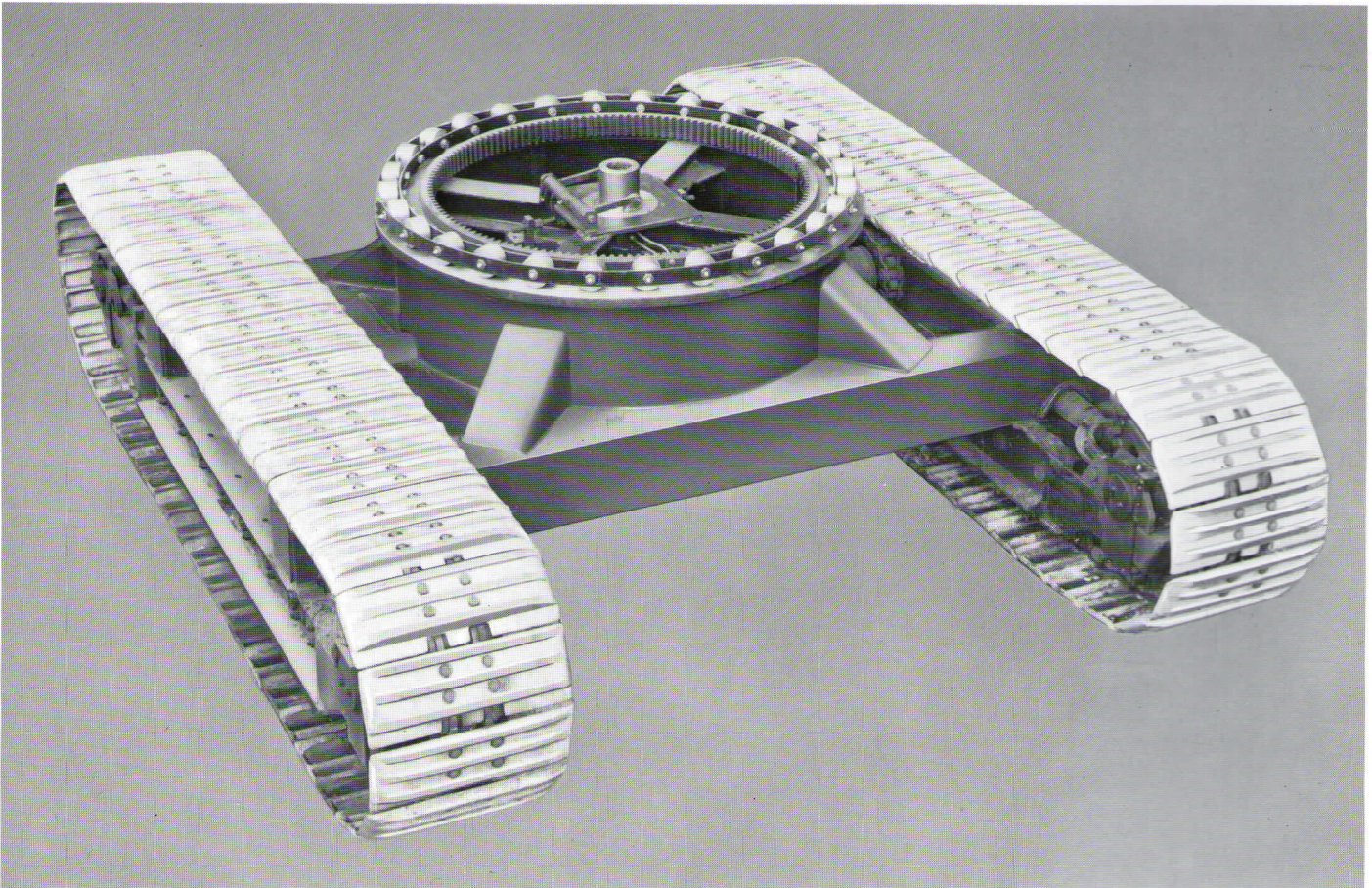
**P&H**

**320**

**Crawler Excavator**

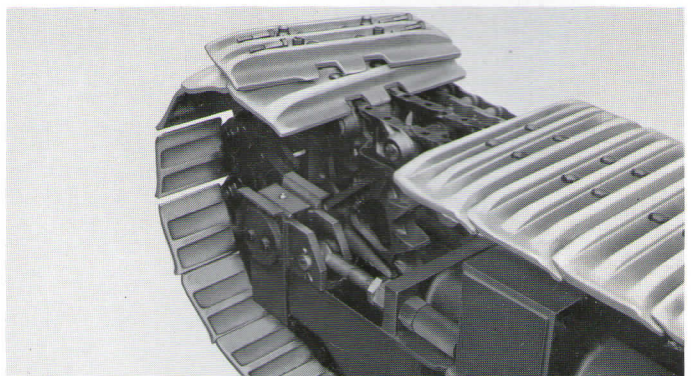
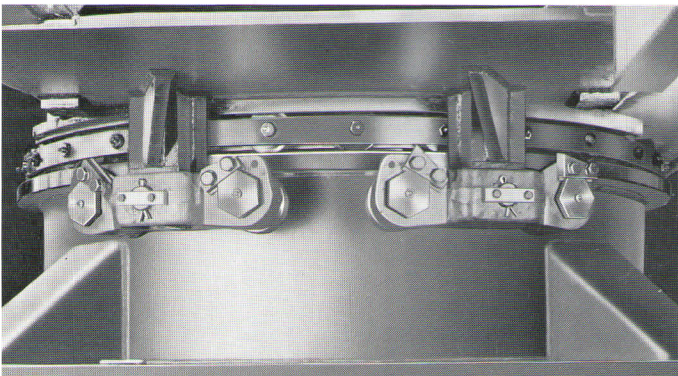


# P&H



Exclusive P & H live roller circle assures even weight distribution of upper and load.

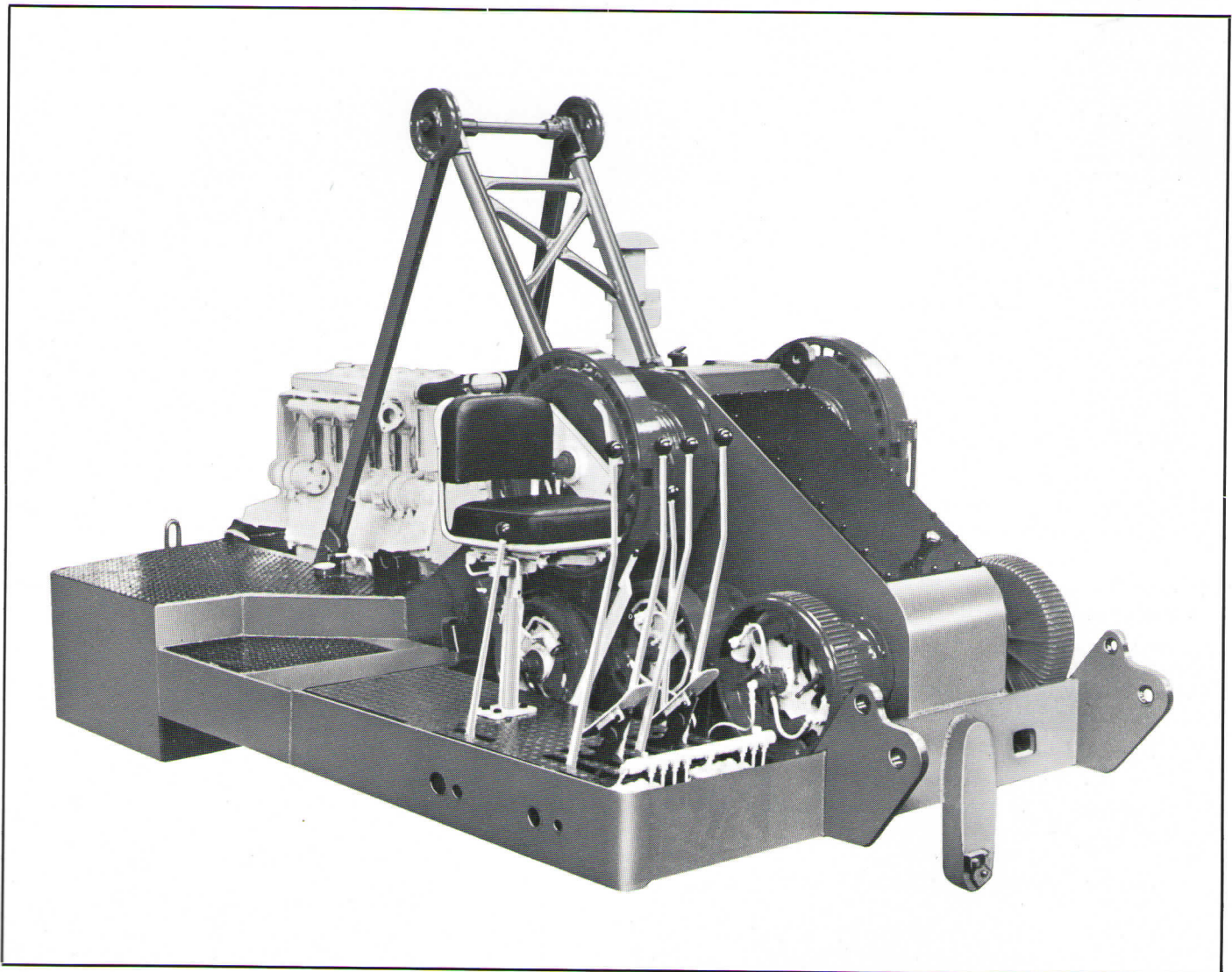
Tractor-type long crawlers with exchangeable shoes and life-time lubricated rollers.



# Crawler Excavator 320

The upper frame with P & H power box is of rugged all-welded construction. The power box contains all the gears and shafts necessary to transmit power to all machine motions. All gearing is completely encased and splash lubricated. Built for high performance in heavy duty operation the compact power box design provides for easy accessibility to clutches and brakes for adjustments.

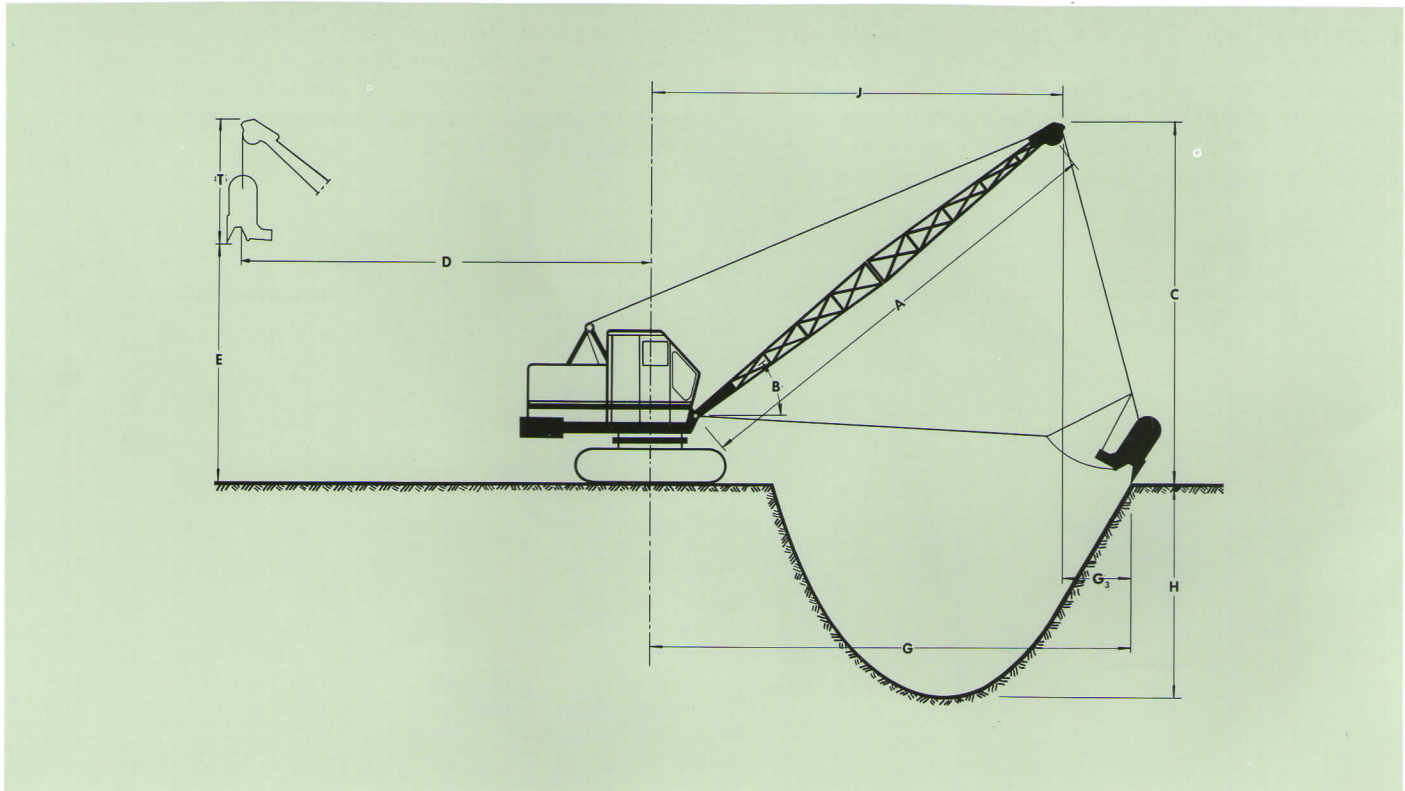
Positive hydraulic control, grooved drums and shafts running on anti-friction bearings, "triple-safe" independent planetary boom hoist, exclusive P & H live roller circle, direct power transmission from engine to power box, 4-speed transmission and full-view operators cab are standard features.



# Dragline Specifications

## Working ranges in meters (m)

A	Boom Length	9,14		10,67		12,19		13,72		15,24	
B	Boom Angle	25°	40°	25°	40°	25°	40°	25°	40°	25°	40°
D	Dumping Radius	9,60	8,38	10,97	9,45	12,34	10,67	13,72	11,73	15,09	12,95
E	Max. Dumping Height	1,37	3,51	2,13	4,42	2,74	5,49	3,05	6,40	3,96	7,32
G	Max. Digging Reach	11,28	10,82	12,95	12,19	14,48	13,72	16,15	15,09	17,68	16,61
G <sub>3</sub>	Approx. Casting Distance	1,68	2,44	1,98	2,74	2,13	3,05	2,44	3,35	2,59	3,66
H	Max. Digging Depth	3,66	3,35	4,57	4,27	5,49	5,18	6,10	5,79	6,71	6,40
C	Clearance Height of Boom Head	5,49	7,62	6,10	8,53	6,86	9,60	7,47	10,52	8,08	11,43
J	Clearance Radius of Boom Head	9,60	8,38	10,97	9,45	12,34	10,67	13,72	11,73	15,24	12,95
T	Bucket Height	Varies depending upon make and capacity of bucket									



## Rated loads in kilograms (kg)

Operating Radius in m	Boom Lengths in m				
	9,14	10,67	12,19	13,72	15,24
7,62	3400	-	-	-	-
9,14	3400	3400	-	-	-
10,67	-	3170	3130	-	-
12,19	-	-	2630	2580	2540

Weight of the bucket is part of the load. Combined weights of bucket and material may not exceed rated loads indicated. Max. allowable size of bucket is 1.0 cbm.

## Bucket selection table

100% Fill  
30° Boom angle

Permissible Boom Oper. Length Radius m m	Spec. Weight of Material					
	Bucket size cbm	weight kg	size cbm	weight kg	size cbm	weight kg
9,14 9,0	1,0*	1140	1,0*	1140	1,0*	1140
10,67 10,3	0,8	950	0,8	950	0,8	950
12,19 11,6	0,8	950	0,8	950	0,6	850

\* operation in 2nd gear only

## General Data

Working Weight (without bucket)	23000 kg (incl. 1360 kg cast counterweight)	
Crawler Shoe width/type	710 mm/sg	810 mm/sg
Ground pressure	0.47 kg/sq.cm	0.40 kg/sq.cm

Line Speed      2nd gear 49 m/min  
                         3rd gear 60 m/min

Line Pull (max.)      2nd gear 7000 kg  
                                 3rd gear 5700 kg

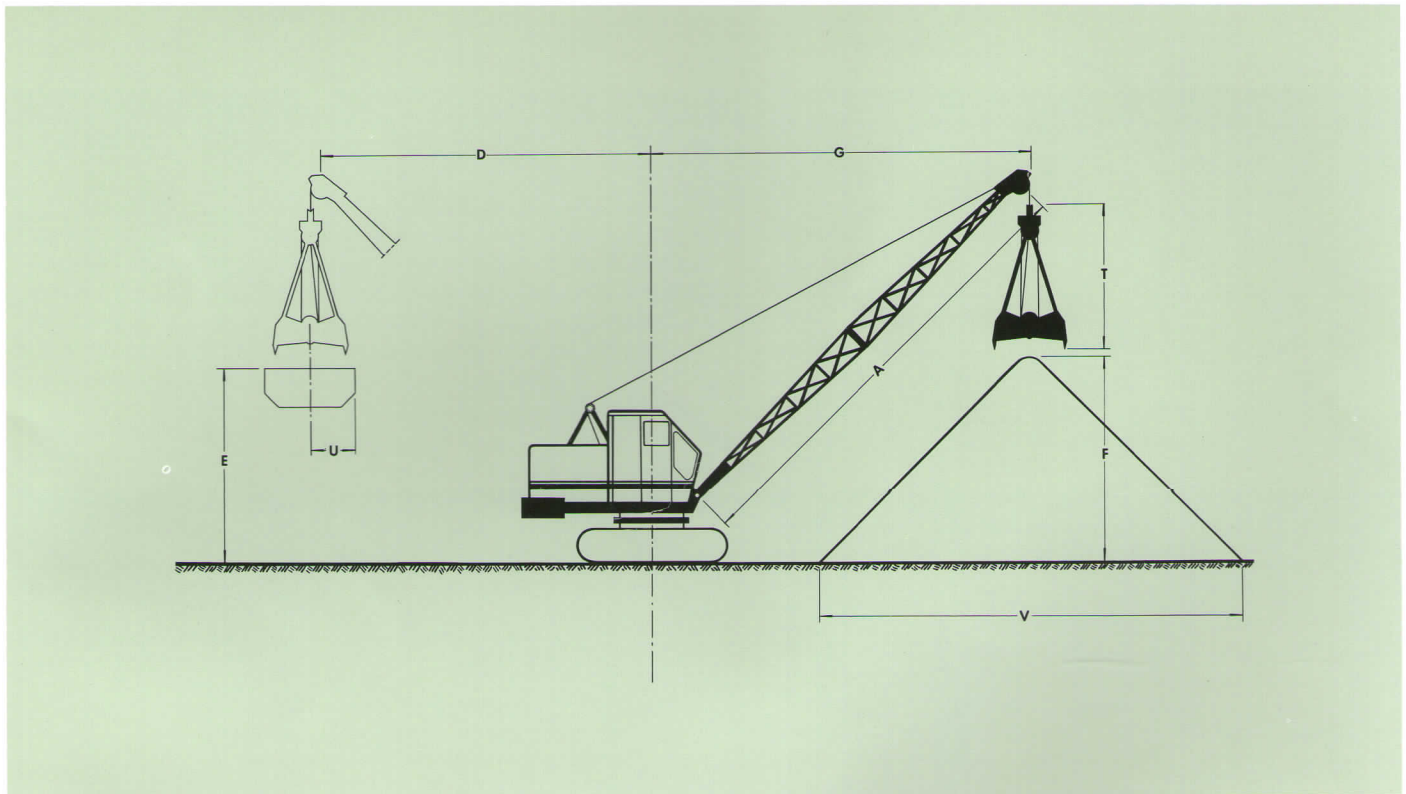
8part boom hoist, 2 boom point sheaves

\* sg = semi-grouser

# Clamshell Specifications

## Working ranges in meters (m)

A E + U	Height and Half Width of Bin	9,14		10,67		12,19		13,72		15,24		
		E	U	E	U	E	U	E	U	E	U	
D	Operating Radius	6,10	6,10	1,68	7,62	1,52	9,60	1,22	10,97	1,07	-	-
		7,62	4,88	2,59	6,71	2,13	8,53	1,83	10,21	1,52	12,04	1,37
		9,14	-	-	5,33	3,20	7,62	2,44	9,45	2,13	11,28	1,83
		10,67	-	-	-	-	5,94	3,51	8,08	2,90	10,06	2,44
F + V		12,19	-	-	-	-	-	6,40	3,96	8,69	3,20	
			F	V	F	V	F	V	F	V	F	V
G	Height and width of Stock Pile	4,88	11,28	6,10	13,41	7,01	15,54	8,23	17,68	9,30	19,81	
T	Bucket Height	7,47										
		8,53										
		9,60										
		10,67										
		11,73										
		Varies up to 3.00 m depending upon make and capacity of bucket										



## Rated loads in kilograms (kg)

Operating Radius in m	Boom Lengths in m				
	9,14	10,67	12,19	13,72	15,24
6,10	3850	3850	-	-	-
7,62	3850	3850	3850	3850	3850
9,14	-	3400	3360	3310	3270
10,67	-	-	2810	2770	2720
12,19	-	-	-	2310	2270

Clamshell ratings shown also apply to magnet, grapple and all other material handling buckets except dragline which is rated separately. For clamshell and magnet operations, the weight of bucket or magnet is considered a part of the load and the total weight of bucket plus contents or magnet plus load must not exceed the corresponding ratings shown. Max. allowable size of bucket is 0,8 cbm.

## Bucket selection table 100% Fill 30° Boom angle

Permissible Boom Length m	Oper. Radius m	Spec. Weight of Material					
		Bucket size cbm	weight kg	size cbm	weight kg	size cbm	weight kg
9,14	7,5*	0,8*	1980	0,8*	1980	0,8*	1980
10,67	8,6	8,0	1980	0,8	1908	0,6*	1580
12,19	9,7	0,6	1580	0,6	1580	0,6	1580
13,72	10,8	0,6	1580	0,6	1580	0,5	1450
15,24	11,9	0,5	1450	0,5	1450	0,4	1140

\* operation in 2nd gear only

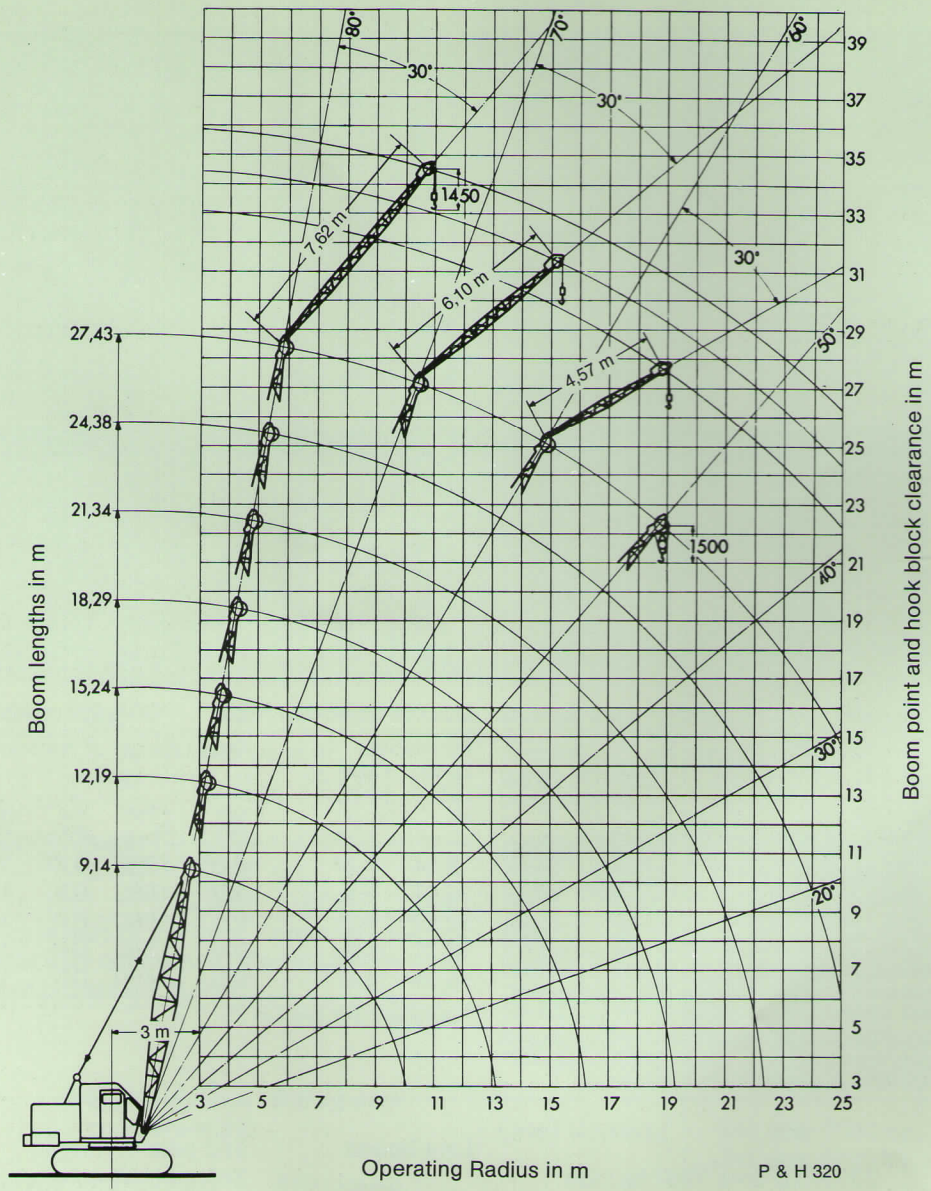
## General Data

Working Weight (without bucket)	23000 kg (incl. 1360 kg cast counterweight)	
Crawler Shoe width/type	710 mm/sg	810 mm/sg
Ground pressure	0.47 kg/sq.cm	0.40 kg/sq.cm

Line Speed	2nd gear 49 m/min 3rd gear 60 m/min
Line Pull (max.)	2nd gear 7000 kg 3rd gear 5700 kg
8part boom hoist, 2 boom point sheaves	

\* sg = semi-grouser

# Crane Working Ranges



# Crawler Excavator 320

## Maximum jib ratings in kg

Offset Angle Jib to Boom Under Full Load	Jib Length in meter		
	4,57	6,10	7,62
10°	4540	3630	2950
20°	3630	2950	2490
30° max.	3170	2270	2040

Jib ratings at any radius from center of rotation are the same as crane ratings shown in table for main boom when operated at that radius, but do not exceed maximum jib ratings shown. For bucket ratings on jib, deduct 10% from jib ratings. Maximum jib operating radius not to exceed length of main boom on which it is being used.

## Weight of lifting tackle- kg

Weight of single or two sheave	
Hook block	approx. 170 kg
Jib hook	approx. 100 kg

slings and handling accessories vary by size and make

## Rated crane load in kgs. – main boom

Oper. Rad. m	Boom lengths in m													
	9,14		12,19		15,24		18,29		21,34		24,38		27,43	
	Over Side	Over End	Over Side	Over End	Over Side	Over End	Over Side	Over End	Over Side	Over End	Over Side	Over End	Over Side	Over End
3,05	18140	18140	–	–	–	–	–	–	–	–	–	–	–	–
3,66	13700	18140	–	–	–	–	–	–	–	–	–	–	–	–
4,57	9800	13110	9710	13020	–	–	–	–	–	–	–	–	–	–
6,10	6550	8440	6460	8350	6370	8250	6280	8160	6190	8070	–	–	–	–
7,62	4900	6210	4810	6120	4720	6030	4630	5940	4540	5850	4440	5760	4350	5670
9,14	3850	4850	3760	4760	3670	4670	3580	4580	3490	4490	3400	4400	3310	4310
10,67	–	–	3130	3950	3040	3850	2950	3760	2860	3670	2770	3580	2680	3490
12,19	–	–	2630	3310	2540	3220	2450	3130	2360	3040	2270	2950	2180	2860
13,72	–	–	–	–	2150	2720	2060	2630	1970	2540	1880	2450	1790	2360
15,24	–	–	–	–	1860	2360	1770	2270	1680	2180	1590	2090	1500	2000
18,29	–	–	–	–	–	–	1380	1790	1290	1700	1200	1610	1110	1520
21,34	–	–	–	–	–	–	–	–	1020	1360	930	1270	840	1180
24,38	–	–	–	–	–	–	–	–	–	–	770	1040	680	950

Backstops recommended for all boom lengths. At radii and boom lengths where no ratings are shown on plate, operation is not intended or approved. Ratings are based upon freely suspended loads and machine standing on firm level, uniformly supporting surface. Safe loads depend upon conditions, boom length, radius of operation, and proper handling, all of which must be taken into account by the user. Ratings are contingent upon machine being equipped with proper boom.

## Hoist line reeving

No. of Parts of Line	1	2	3	4
Max. Load – kg	4540	9080	13610	18140

## Maximum boom lengths machine can lift off ground meters

Boom Over	Boom Only	Boom & Jib
Over	27,43	27,43 + 6,10
Side End	27,43	27,43 + 7,62

## Ground pressure

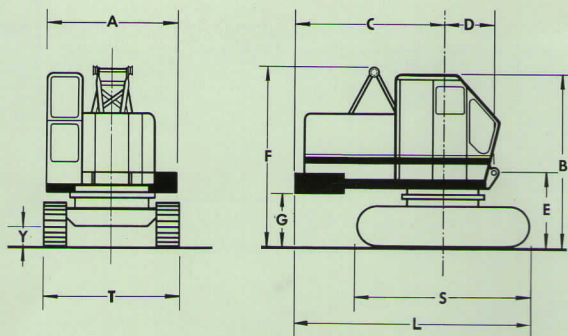
Crawler Shoe width/type	710 mm/sq	810 mm/sq
Ground pressure	0.47 kg/sq.cm	0.40 kg/sq.cm

## General Data

Line Speed	2nd gear 49 m/min 3rd gear 60 m/min
Line Pull (max.)	2nd gear 7000 kg 3rd gear 5700 kg
Working Weight	23000 kg

Operating radius is horizontal distance from the centerline of rotation to a vertical line through the gravity center of the load. Capacities shown are for units with 4080 kgs steel punchings and 1360 kgs cast counterweight, and do not exceed 75% of tipping loads. The crane ratings include weight of hook, block, slings and all other load handling accessories. Deduct 450 kgs from main hook rating when boom is equipped with jib.

## General Specifications



### General dimensions

A -	Width of upper structure	2,59 m
B -	Height to top of cab	3,30 m
C -	Radius of rear end	3,31 m
D -	Center of rotation to boom foot pin	1,07 m
E -	Height from ground to boom foot pin	1,47 m
F -	Clearance height over gantry	3,41 m
G -	Counterweight ground clearance	0,97 m
L -	Overall Length of machine	5,44 m
S -	Overall length of crawlers Center to center of sprockets	4,19 m 3,33 m
T -	Overall width of crawlers with 710 mm s.g. shoes	3,25 m
Y -	Ground clearance of carbody (lowest point)	0,37 m
	Total Weight - Basic Machine	22000 kg

### Lower machinery

**Control:** Direct acting hydraulic, lever actuated.

**Propel brakes:** Spring loaded double acting propel and steering brakes release automatically under engine power when travelling, set automatically when propelling power not applied.

**Tractor type crawlers, standard:** Automatic spring-loaded track tension.

**Crawler shoes:** bolted, individually replaceable.  
Total number both sides: 98

Shoe width (standard) 710 mm semi-grouser

Shoe width (optional) 810 mm semi-grouser

**Track rollers:** Ten in each frame, lifetime lubricated

**Swing rollers:** 28 rollers in live roller circle

**Swing gear:** Internal cut teeth

**Swing clutches:** Two shoe type, internal-expanding

### Upper machinery

**Power plant:** Deutz F6L 912, 6 cyl., aircooled, 90 HP/ 2000 RPM std., DAF DD 575 A, 4 cyl., optional

**Fuel tank:** approx. 150 lt.

**Transmission:** 4-speed, second gear normal operating speed

**Controls:** Direct acting hydraulic

**Boom hoist assembly:** Independent planetary gear type, with external ratchet and automatic brake provides for raising and lowering boom under power and locking boom. Drum mounted on anti-friction bearings.

**Hoist + digging drums:** Mounted on anti-friction bearings.

**Clutches - main drums:** Band type, internal expanding.

**Brakes - main drums:** Band type, external contracting.

**Type of fastening to lower:** 5 adjustable hook rollers. Two double rear, one front.

**Counterweight:** Internal non-removable punchings in counterweight box at rear of machine and external single piece removable casting.

### Speeds (with Deutz F6L 912 Diesel engine)

	Single Line Speed	Swing Speed	Propel Speed
1st gear	26 m/min	2,1 U/min	0,92 km/h
2nd gear	49 m/min	3,9 U/min	1,75 km/h
3rd gear	60 m/min	4,8 U/min	2,15 km/h
4th gear	-	-	4,15 km/h

Subject to change without notice