



CATERPILLAR

211 Excavator

- Hydraulic Excavator with Track-type Undercarriage
- 63 kW (84 HP) Flywheel Power (Deutz engine)
- 15400 kg Operating Weight with long (LC) undercarriage and 14700 kg with standard undercarriage

Machine shown may have optional equipment.



engine

Choice of diesel engines:

Deutz F5L 912	63 kW (84 HP) at 2150 RPM
Perkins T4.236	70 kW (94 HP) at 2150 RPM

The net power at the flywheel of the vehicle engine operating under SAE J1349 standard conditions, 25°C and 100 kPa Hg, using 35 API gravity fuel oil at 15,6°C, and after deductions for fan, air cleaner, water pump, lubricating oil pump, fuel pump, alternator and muffler. No derating is required up to 1500 m altitude with Deutz engine and 3000 m with Perkins.

(Above ratings also valid under standard conditions of ISO 1585.)

Deutz 4-stroke-cycle F5L 912 diesel engine with five cylinders, 100 mm bore, 120 mm stroke and 4,71 liters displacement. Air cooled. Dry air filter with main filter and secondary element.

Perkins 4-stroke-cycle T4.236 diesel engine with four cylinders, 98,4 mm bore, 127 mm stroke and 3,86 liters displacement. Turbocharged and water cooled. Dry air filter with main filter and secondary element.

24 volt direct electric starting system. Two 12-volt, 110 amp-hour batteries.



hydraulic system

Two variable displacement piston pumps power the boom, stick, bucket, swing and travel circuits. Summated control, with both pumps providing identical flow rates to the system or to pre-selected single circuit. Output of each pump @ rated engine rpm and 130 bar (13 000 kPa) 108 l/min
Relief valve setting 300 bar (30 000 kPa)

Cylinders:	Bore and Stroke	kN
Boom (2)	114,4 x 815 mm	2 x 243
Stick (1)	114,4 x 1040 mm	1 x 285
Bucket (1)	101,7 x 815 mm	1 x 243

All cylinders have rod and head-end snubbers to cushion bottoming impact. Check valve in boom circuit can be actuated by operator to prevent load drift.

Separate hydraulic oil cooling circuit with thermostatically controlled, hydraulically driven fan.



drive and steering

Fully hydrostatic; each track is driven by an independent hydraulic motor. Two travel pedals: right pedal gives forward movement ... the left, reverse. Lever between travel pedals provides gradual pivot left or right if a travel pedal is depressed, or counterrotation left or right if only the lever is used. Brake valves limit downhill travel, protect drive motors against cavitation, and are effective in forward or reverse. Planetary gear final drives.

Maximum drawbar pull:

Standard undercarriage	68,3 kN
Long (LC) undercarriage	68,3 kN

Two travel speeds forward and reverse controlled on-the-go by switch on console. Standard and Long (LC) undercarriages:

1st stage at rated RPM	2,1 km/h
2nd stage at rated RPM	4,0 km/h



brakes

Oil disc brake, 180 mm diameter, on each final drive input shaft. Spring applied, hydraulically released. Depressing a travel pedal simultaneously disengages brakes. When pedal is released, brakes automatically apply.



track

Track-type undercarriage with lifetime-lubricated rollers and idlers. Hydraulic track adjusters and triple grouser shoes are standard.

Number of shoes (each side):	
Standard undercarriage	47
Long (LC) undercarriage	51
Width of standard shoes:	
Standard undercarriage	500 mm
Long (LC) undercarriage	500 mm
Overall track length:	
Standard undercarriage	3800 mm
Long (LC) undercarriage	4160 mm
Total machine ground contact area (standard shoe):	
Standard undercarriage	3,31 m ²
Long (LC) undercarriage	3,67 m ²



controls

Two pilot-operated joysticks on seat armrests actuate boom, stick, bucket and swing. A push button in top of each handle activates solenoid valves to control attachment options such as clam or grab rotator and ditch cleaning or ditch grading bucket tilt.

Right lever: Move forward and backward to lower and raise boom. Right and left to control bucket curl and dump, or to open or close attachment clamshell.

Left lever: Move forward and backward to move stick out and in. Left and right to swing left or right.

Oblique movement of either lever operates two functions simultaneously.

Clamshell rotation to right is a button on right control lever; to left on left lever.

Swing braking is controlled by pedal to left of travel pedals/steering lever. To lock swing, push pedal beyond normal braking point to engage latch. Push again with foot touching latch to release lock.

Left armrest lifts for operator entry and exit. Raising the armrest prevents actuation of all hydraulic functions except any circuit then in use.



swing mechanism

Hydraulic piston motor drives combined spur/planetary gearing to pinion. Swing gear has external teeth. Ball-type swing bearing. Shoe brake on swing drive housing is controlled through spring-applied hydraulically-released cylinder and locks upper structure in any position. Modulated swing braking reduces pendulum effect of clamshell or other suspended tools or loads. Two mechanical swing lock pin positions (180° opposite each other) can be engaged from cab to lock undercarriage to upper frame for travel or transport. Swing speed at rated engine speed 9,2 RPM



service refill capacities

(See Operation and Maintenance Guide for recommended change intervals and related data.)

	Liters
Fuel tank	245
Cooling system (Perkins engine)	30
Hydraulic system (includes tank)	330
Hydraulic tank	270
Lubrication:	
Engine oil: Deutz	13
Perkins	9,4
Swing drive	9,5
Final drives (each)	2,0



standard equipment NOTE: Standard and optional equipment may vary by country. Consult your Caterpillar dealer for specifics.

Sound insulated cab with floor mat, literature pocket, bottle rack, cigarette lighter, ashtray and coat hanger. Interior cab light. Roof hatch. Front window, locks open, infinitely adjustable. Provision for radio installation. Vibration damped seat, fully adjustable. Fuel gauge in cab. Operator's signaling/warning horn. Rearview mirrors. Windshield wiper. One boom-mounted work light. Swing pinion protection. Cold weather starting aid for Deutz or Perkins engines (to -15°C). Storage box on upper structure. Tool kit.

Human-engineered for comfort and efficiency

Versatile performance

- Excellent digging range, dump height and lift capacity.
- Variable displacement hydraulic system with power summation.
- Hydrostatic drive. Track counterrotation capability for close maneuvering.
- Independent hydraulic oil cooler helps assure system temperature control in all climates.
- Choice of air-cooled Deutz or water-cooled Perkins diesel engines.

Advanced operator's station

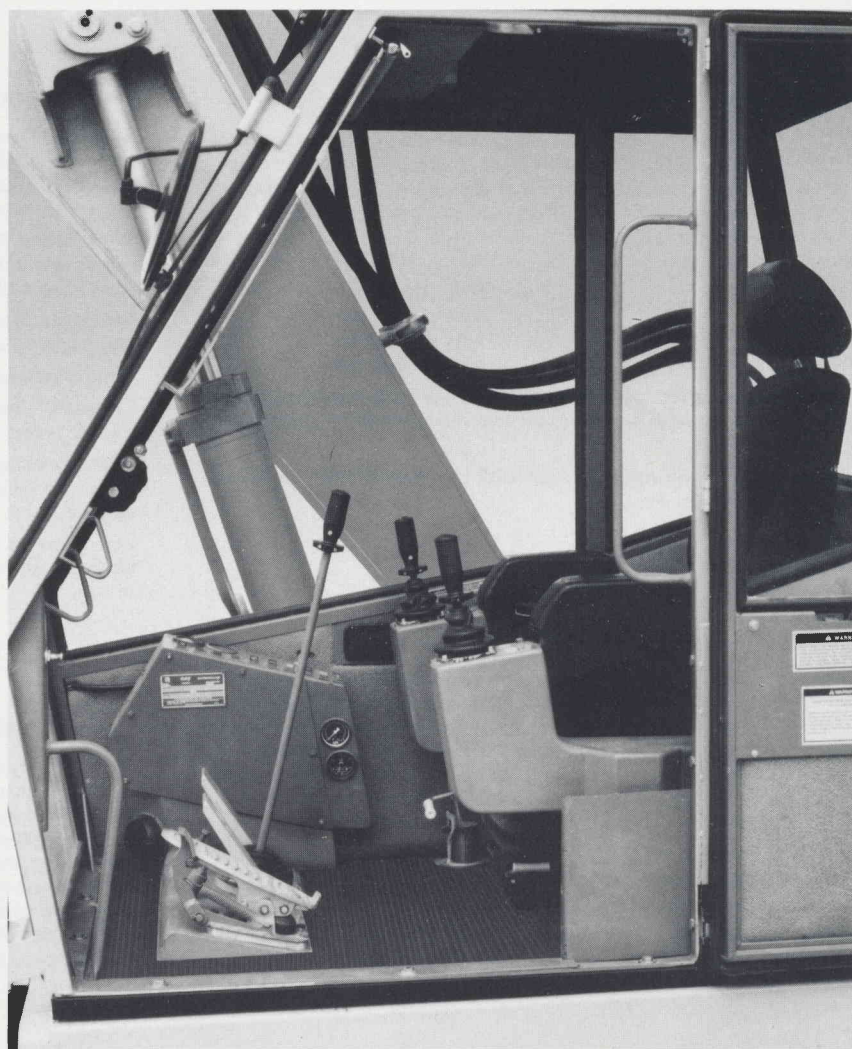
- Piloted controls – easy and responsive, smooth and accurate. Short lever travel. Joystick movement provides complete tool response, including simultaneous actuation of more than one function.
- Full instrumentation ... cab resiliently mounted ... translucent roof hatch ... infinitely adjustable front window.
- Seat has excellent adjustment features, including to operator weight, and independent horizontal adjustment relative to joy-sticks and to pedals.
- Extremely quiet sound levels for both operator and spectator.

Complete range of tools

- One-piece and two-piece booms with short, medium and long sticks. Specialized 4000 mm and material handling sticks. Articulated boom for offset excavation next to walls, footings and abutments.
- Wide range of bucket sizes and types ... general purpose, rock, ditch cleaning, trenching (with ejector), trapezoidal ditching ... clamshells and grapples.
- Auxiliary hydraulic circuits.
- Hydraulic hammer arrangement.

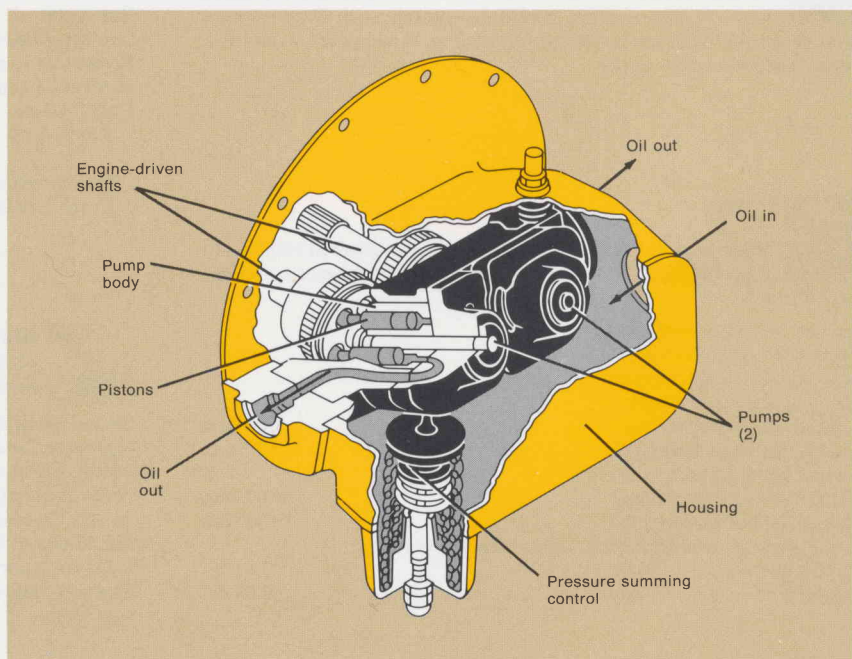
CAT PLUS services

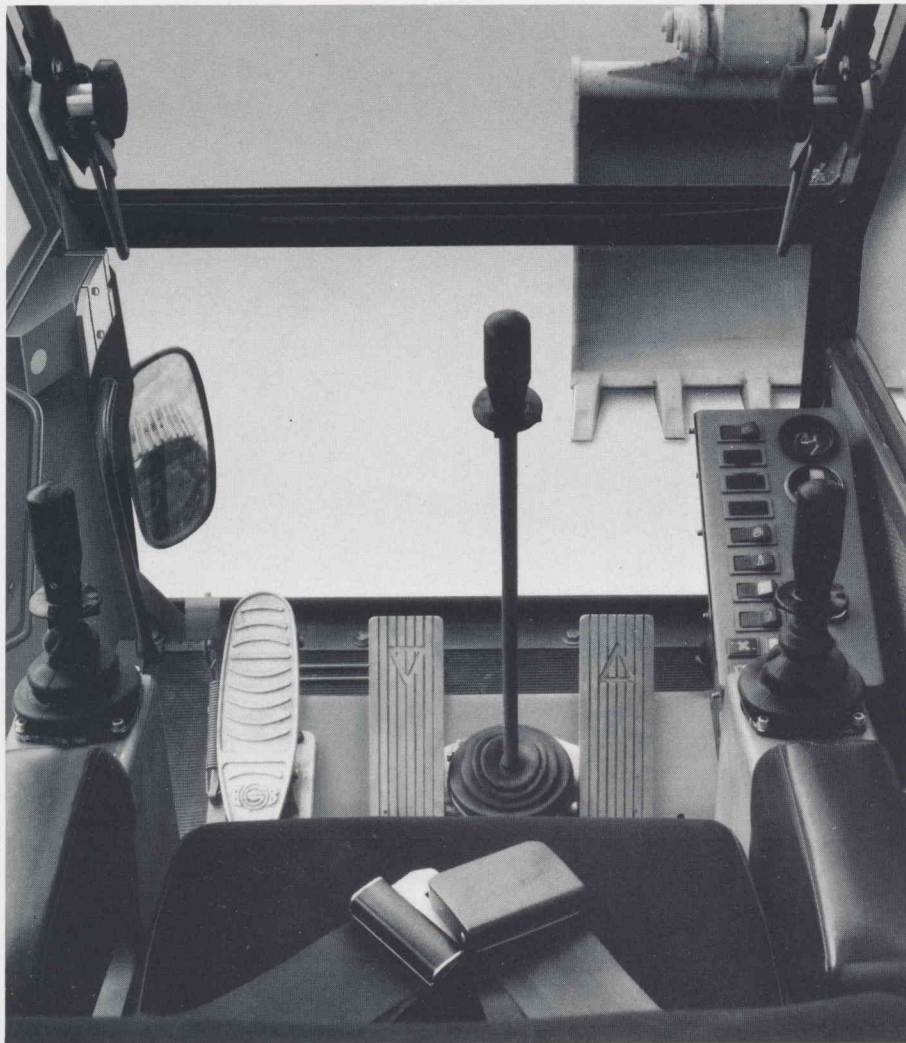
- The most comprehensive customer support system in the industry.
- Outstanding parts availability ... qualified servicemen and specialized service shops ... diagnostic tools ... Custom Track Service – and many more to reduce equipment costs and downtime, extend machine life.



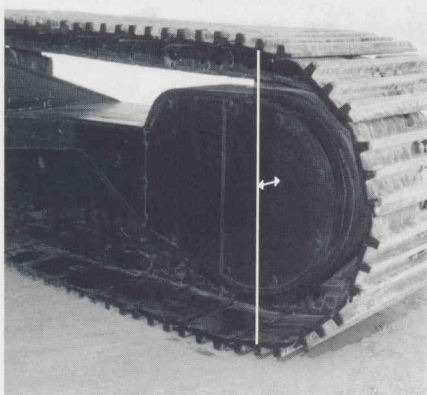
State-of-the-art hydraulic power

Two variable displacement piston pumps are the key to exceptional productivity. These pumps furnish summated power to the boom, stick and bucket. With summated control, both pumps supply identical flow rates to the system or to a single circuit, as required, for fast implement response and high fuel efficiency. One of the pumps also powers the swing function, and both power the travel circuit.

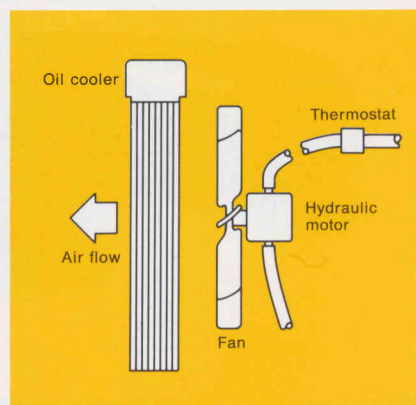




THE CATERPILLAR 211 EXCAVATOR is backed by your Caterpillar dealer with CAT PLUS services – the most comprehensive customer support system in the industry. Your dealer provides an extensive parts inventory, factory-qualified servicemen and many special support programs designed specifically for your needs. By reducing downtime and increasing productivity, these services are an important part of the total value you expect from Caterpillar.



Integrated final drives protect the track motors, disc brakes and hydraulic lines. These components are contained within the envelope of the track shoes, including shoes 500 mm wide. Track motor guards are not required.

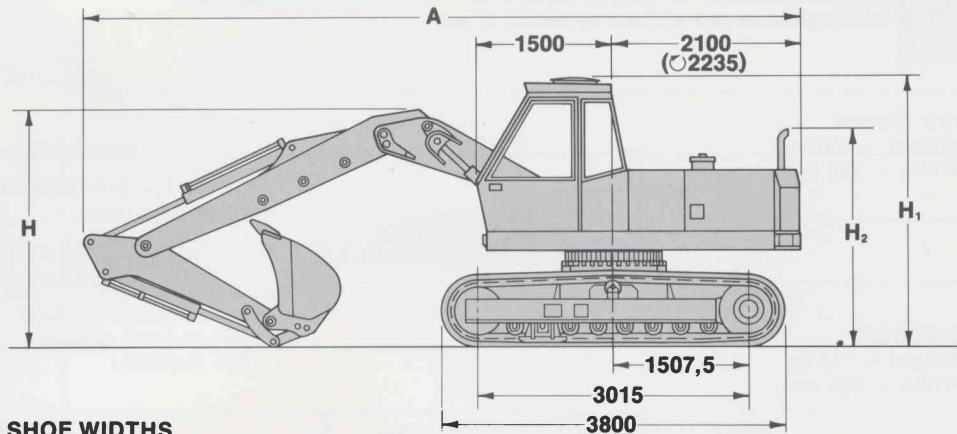
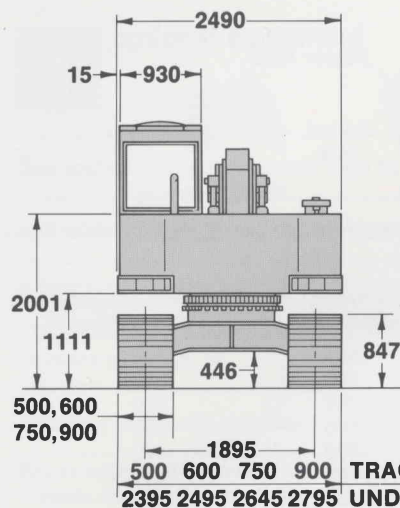


Hydraulic oil cooler is independent from engine fan and assures cooling capability in high ambient temperatures. The cooler fan is hydraulically driven and thermostatically controlled for efficiency. A light on the instrument panel indicates when the fan is running.



Left armrest lifts for operator entry and exit. Raising the armrest prevents actuation of all hydraulic functions except circuits in use at that time.

211 with Standard Undercarriage



weight (approximate)



Shipping — (includes Deutz engine, 10% fuel, 2-piece boom, 2300 mm stick, 900 mm general purpose bucket, and 500 mm shoes):

Standard undercarriage 14 440 kg
Long (LC) undercarriage 15 140 kg

Operating — (shipping weight plus full fuel tank, and operator):

Standard undercarriage 14 700 kg
Long (LC) undercarriage 15 400 kg

For the following equipment, change the above weights:

With Perkins engine +100 kg
With one-piece boom -115 kg
With 1600 mm stick -85 kg
With 2800 mm stick +45 kg

Transport Dimensions (with standard or long undercarriage)

	Two-piece Boom				One-piece Boom	
	Foreboom extended and in lower position		Foreboom extended and in upper position		A (mm)	H (mm)
Stick	A (mm)	H (mm)	A (mm)	H (mm)	A (mm)	H (mm)
1600 mm	7990	2850	8220	2640	7990	2770
2300 mm	8010	2950	8220	2820	8010	2920
2800 mm	8000	2900	8210	2820	8000	2870

H₁ — Maximum height of base machine:

Standard undercarriage 3054 mm
Long (LC) undercarriage 3037 mm

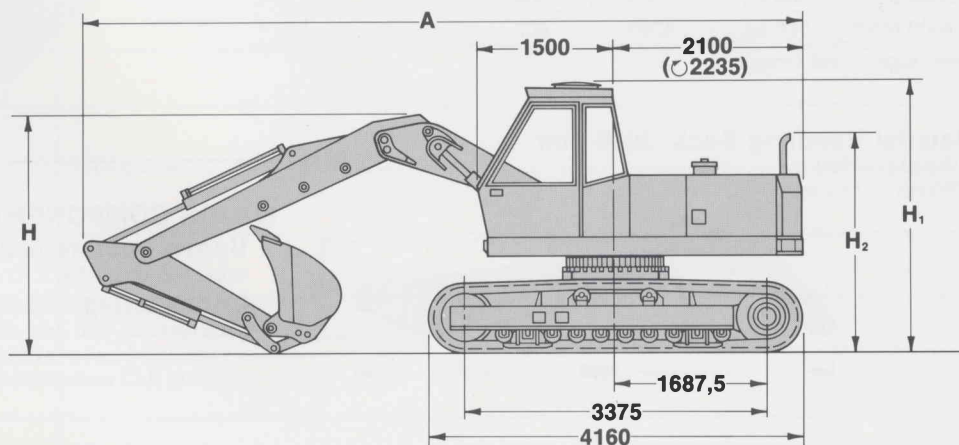
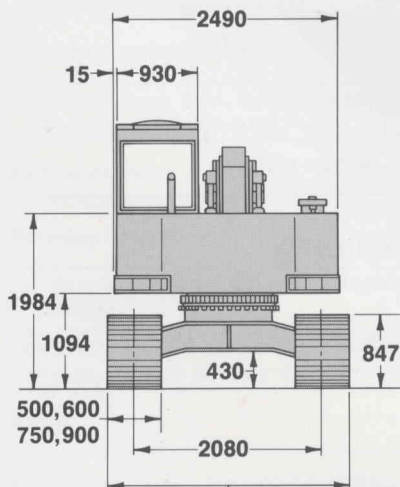
H₂ — Maximum height of base machine without cab:

Standard undercarriage 2464 mm
Long (LC) undercarriage 2447 mm

Ground Pressure

Shoe Width (Triple Grouser)	Standard Undercarriage		Long (LC) Undercarriage	
500 mm	0,43 bar	43 kPa	0,41 bar	41 kPa
600 mm	0,36 bar	36 kPa	0,35 bar	35 kPa
750 mm	0,30 bar	30 kPa	0,28 bar	28 kPa
900 mm	0,26 bar	26 kPa	0,25 bar	25 kPa

211 with Long (LC) Undercarriage



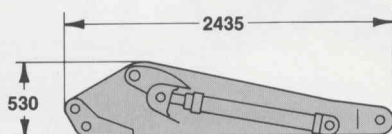
500 600 750 900 TRACK SHOE WIDTHS
2580 2680 2830 2980 UNDERCARRIAGE WIDTHS



Specifications of Major Options (with cylinders but without hydraulic lines)

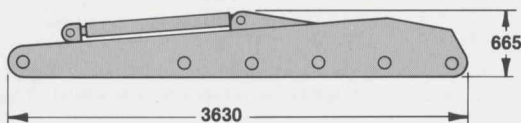
Stub Boom

Weight — 750 kg
Width — 725 mm



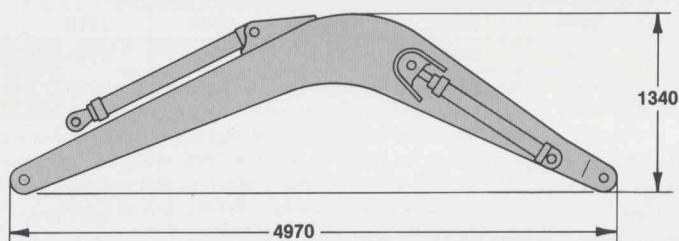
Foreboom

Weight — 735 kg
Width — 460 mm

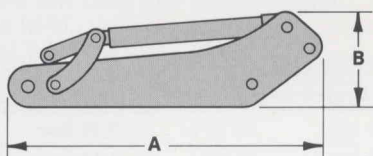


One-piece Boom

Weight — 1370 kg
Width — 725 mm



Sticks

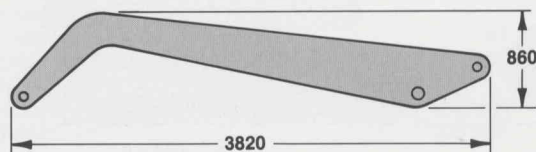


	Weight	A (mm)	B (mm)	Width (mm)
1600 mm	475 kg	2345	695	455
2300 mm	555 kg	3035	610	455
2800 mm	600 kg	3560	605	455
4000 mm*	790 kg	4760	600	455

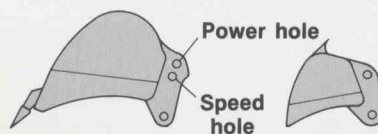
*See page 13 for usage.

Material Handling Stick, 3000 mm

Weight — 380 kg
Width — 285 mm



Buckets



General Purpose

Ditch Cleaning

All general purpose buckets have power and speed holes to adapt to working conditions.

	Cutting width (mm)	Capacity, Heaped, ISO (liters)
General Purpose (Includes weld-on tooth adapters. Tips required.)	500	245
	600	310
	700	380
	800	450
	900	520
	1000	590
	1100	660
	1200	725
	1300	790
	1400	855

Rock (Includes weld-on tooth adapters. Tips required.)	600	330
	750	440
	1000	625

Trenching (with ejector). (Includes weld-on tooth adapters. Tips required.)	280	185
	380	220

Clamshell (Hydraulically rotatable. Available with bolt-on adapters with pinned teeth.)	280*	135
	380*	190
	600	310
	700	360
	800	410
	800	450

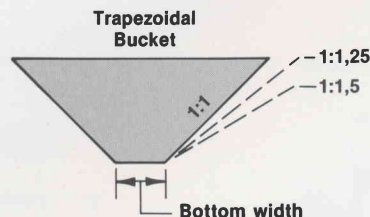
*Available with ejectors.

Ditch Cleaning (without teeth)*:	1500	355
	1800	430
	2000	480
	2400	580

Ditch Grading (with strike-off plate)*:	2000	230
	2400	280

*Available with optional hydraulic tilting (45° to either side).

	Slope	Bottom width (mm)	Capacity, Heaped, ISO (liters)
Trapezoidal ditching:	1:1	400	380
	1:1	600	475
	1:1,25	400	435
	1:1,25	600	535
	1:1,5	400	495
	1:1,5	600	595



MAJOR COMPONENT WEIGHTS:

Upperstructure (with swing bearing, but without boom or other attachments) 6660 kg

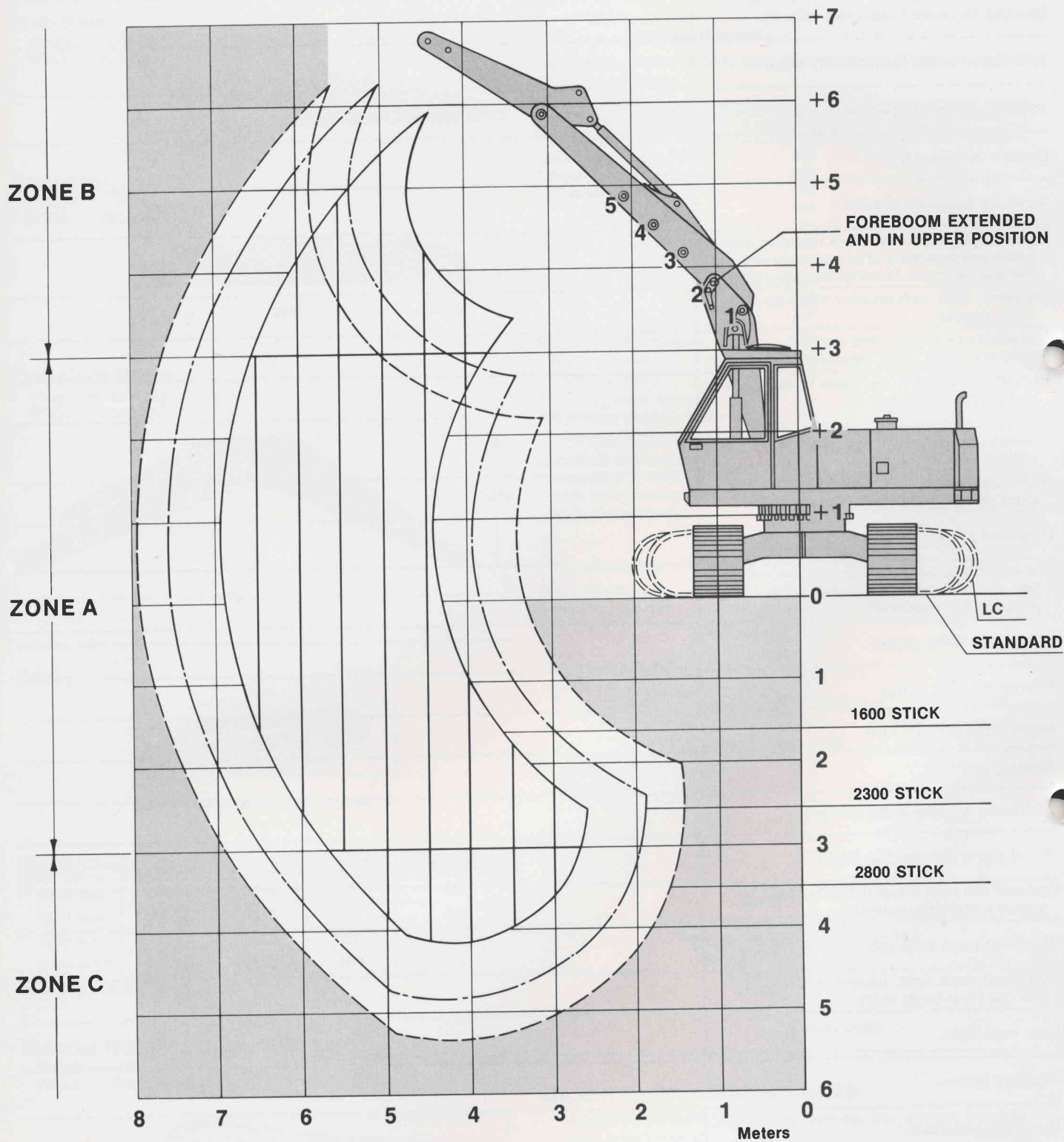
Undercarriage Assembly (without swing bearing, no attachments, 500 mm shoes):

Standard undercarriage 5170 kg
Long (LC) undercarriage 6035 kg

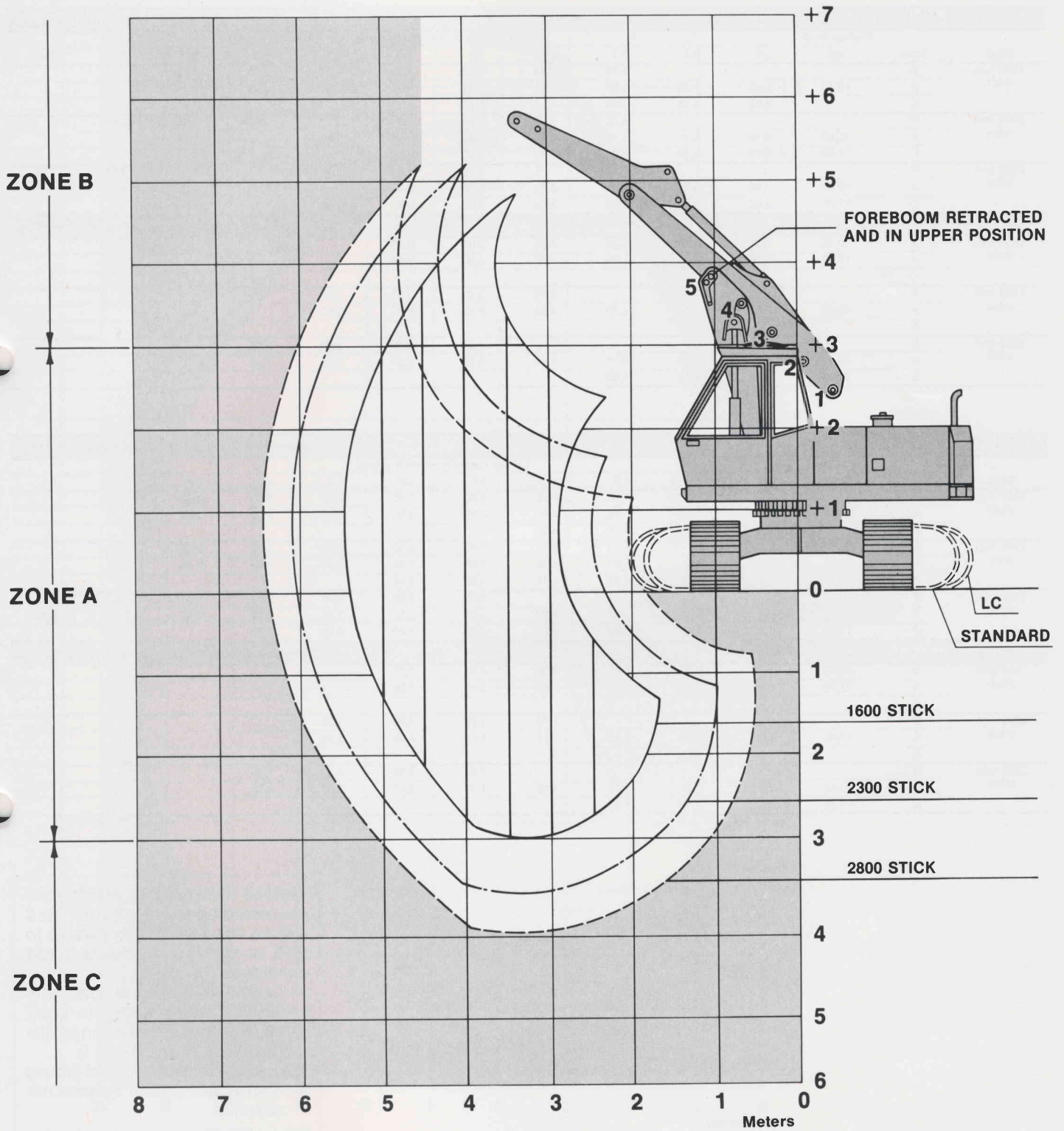


optional equipment

One and two-piece booms (see page 6).	
Articulated boom, hydraulically offset.	
Backhoe sticks (see page 6).	
Buckets (see page 6).	
Auxiliary hydraulic circuits.	
Boom height adjustment link (between stub boom and foreboom of two-piece boom). For use only with Material Handling stick.	
Clamshell lines with diverter valve for all stick lengths.	
Clamshell extensions (1000 mm and 2000 mm. Max. total extension: 4000 mm.)	
Bucket tilting device (for ditch cleaning and grading buckets only).	
Hydraulic hammer arrangement (controls, mounts, lines and linkage installed — with or without hammer).	
Multi-tine grapple (open tine or orange peel).	
Pulpwood grapple.	
Track (500 mm triple grouser shoes standard; 600 mm, 750 mm and 900 mm triple grouser shoes optional).	
Swing gear tooth guard.	
Electric refueling pump.	
Engine compartment light	
Elevated cab	
Additional warning horn, air operated.	
Travel alarm (standard in USA).	
Optional cab with integral FOPS (falling object protective structure).	
Third exit (rear) from cab.	
Additional work light, boom-mounted (for one-piece boom only).	
Rear work light.	
Rotating beacon.	
Headlight protection.	
Cab heater (engine oil heating with Deutz engine — water heating with Perkins).	
Radio.	
Windshield washer (standard in USA).	
Mirror, additional left.	



Lifting capacity data on page 10.



Lifting capacity
data on page 10.

STANDARD UNDERCARRIAGE — 360° swing

Foreboom fully extended/Upper position

Stick	Zone	Radius in m		Lifting capacity in metric tons									
		2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5
1600 mm stick	B				5,10	4,35	3,80	3,30	2,90	2,55	2,25		
	A	12,10	8,45	6,20	4,85	4,00	3,40	3,00	2,65	2,35	2,15		
	C		6,65	6,35	5,00	4,15							
2300 mm stick	B				5,05	4,30	3,75	3,30	2,90	2,60	2,30	2,05	
	A	12,50	8,10	5,95	4,75	3,90	3,30	2,90	2,55	2,30	2,05	1,90	
	C	11,85	8,25	6,10	4,80	3,95	3,35	2,95					
2800 mm stick	B						3,75	3,30	2,95	2,60	2,30	2,05	1,85
	A	12,20	7,95	5,90	4,65	3,85	3,25	2,85	2,50	2,25	2,00	1,85	1,70
	C	11,65	8,05	5,95	4,70	3,85	3,30	2,85	2,50	2,25			

Foreboom fully retracted/Upper position

1600 mm stick	B	10,45	7,85	6,25	5,20	4,55	3,80	3,20					
	A	12,15	8,35	6,20	4,90	4,10	3,50	3,05					
	C												
2300 mm stick	B					4,40	3,90	3,30	2,85				
	A	10,40	7,80	6,05	4,80	4,00	3,40	2,95	2,60				
	C												
2800 mm stick	B						3,80	3,40	2,90	2,50			
	A	10,40	7,80	6,00	4,75	3,95	3,35	2,90	2,55	2,30			
	C	11,75	8,30	6,15	4,90								

LONG (LC) UNDERCARRIAGE — 360° swing

Foreboom fully extended/Upper position

Stick	Zone	Radius in m		Lifting capacity in metric tons									
		2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5
1600 mm stick	B				5,10	4,35	3,80	3,40	3,35	3,00	2,65		
	A	12,10	9,65	7,45	5,80	4,75	4,05	3,50	3,10	2,80	2,50		
	C		9,05	7,25	6,00	4,90							
2300 mm stick	B				5,05	4,30	3,75	3,30	2,90	2,90	2,65	2,35	
	A	14,10	9,95	7,25	5,60	4,65	3,95	3,45	3,00	2,70	2,45	2,20	
	C	11,85	8,85	7,05	5,75	4,70	4,00	3,45					
2800 mm stick	B						3,75	3,30	2,95	2,60	2,65	2,40	2,15
	A	15,30	9,80	7,15	5,05	4,30	3,80	3,35	2,95	2,65	2,40	2,20	2,00
	C	11,65	8,70	6,95	5,65	4,60	3,90	3,40	3,00	2,70			

Foreboom fully retracted/Upper position

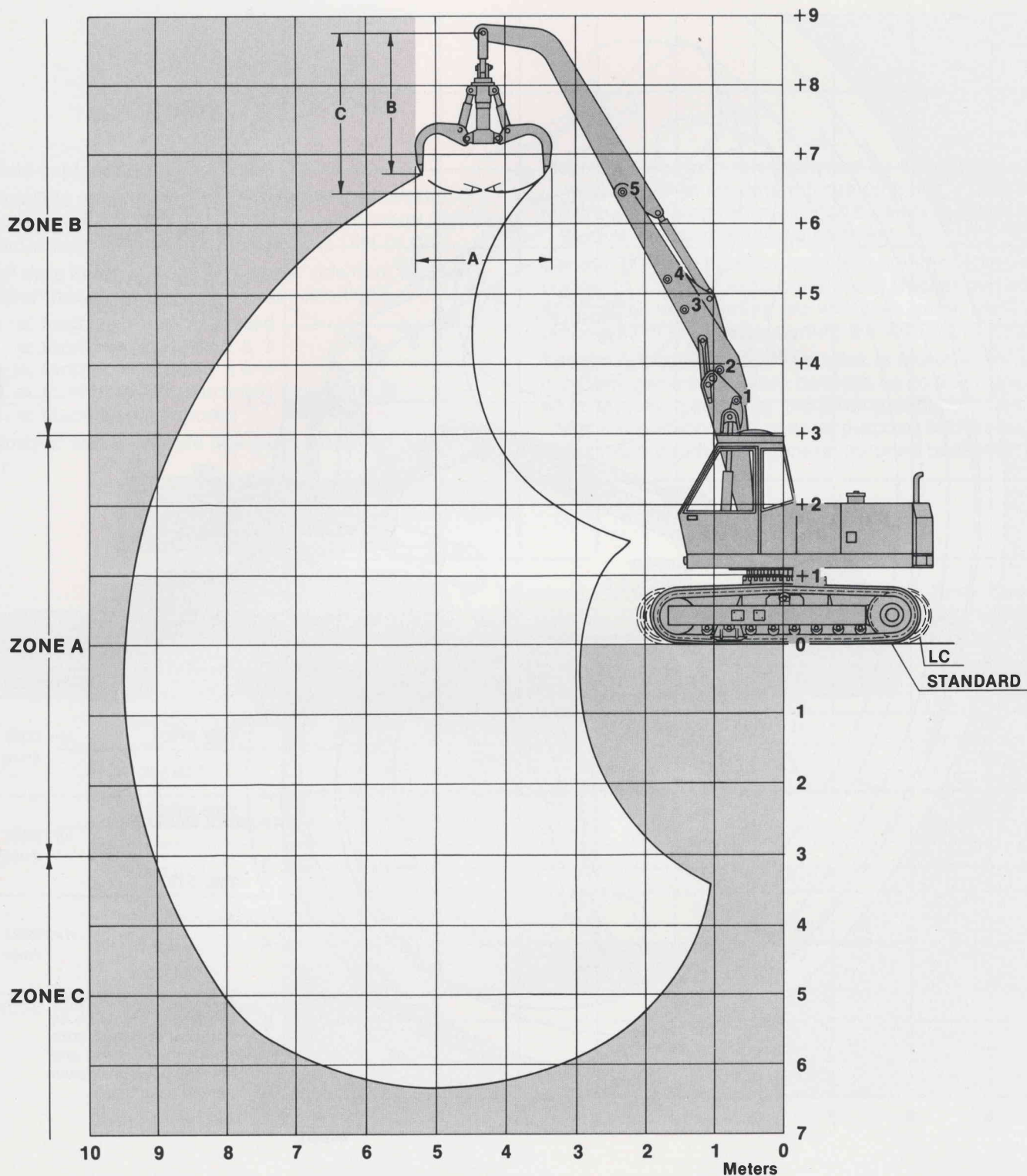
1600 mm stick	B	10,45	7,85	6,25	5,20	4,90	4,45	3,75					
	A	12,15	8,70	7,15	5,90	4,85	4,10	3,55					
	C												
2300 mm stick	B					4,40	3,95	3,85	3,30				
	A	10,40	7,80	6,20	5,15	4,75	4,05	3,50	3,10				
	C												
2800 mm stick	B						3,80	3,45	3,40	2,95			
	A	10,40	7,80	6,20	5,15	4,40	4,00	3,45	3,05	2,70			
	C	11,75	8,80	7,00	5,85								

Payload capacities in metric tons are according to DIN 15 019 Part 2 (values not directly comparable to SAE or PCSA ratings) with these conditions:

- Center of gravity of load acts directly below stick pin point and conforms to the range diagrams on pages 8 and 9
- Machine on firm and level ground
- Bucket and bucket cylinder not attached

When attachments such as bucket and bucket cylinder are installed, the weights of these attachments should be deducted from the data in the tables.

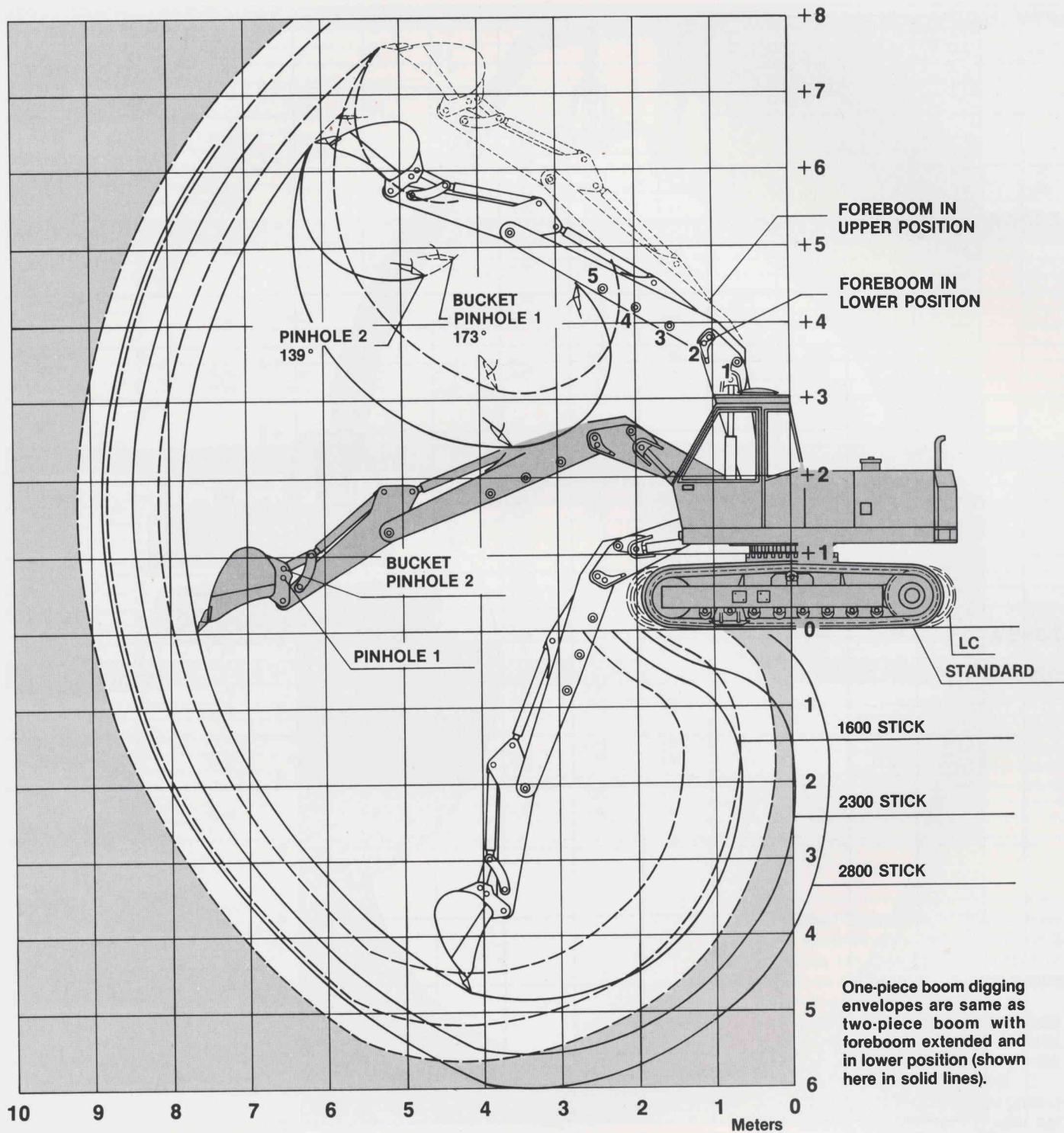
Weight of bucket cylinder and linkage = 210 kg.



Multi-tine Grapple
(with hydraulic rotator)

A. Opening width	mm	1960
B. Height opened	mm	1870
C. Height closed	mm	2130
Number of times		5
Capacity	l	330
Weight	kg	1065 (1250)

Weight in parentheses is for enclosed multi-tine (orange peel) grapple.



Lifting capacity data on page 10.

Data explanation:

Possible stick/bucket combinations for material weighing up to 1800 kg per loose cubic meter. Safety factor over 360° swing according to DIN 24 087.

All data is for foreboom in upper position. (Data in parentheses: foreboom in lower position.)

- x = foreboom fully extended
- 1 = foreboom in holes 2 & 3
- 2 = foreboom in holes 3 & 4
- 3 = foreboom fully retracted (holes 4 & 5)
- = stability not assured

Shaded areas indicate one-piece boom range.

Maximum breakout force (exerted by bucket cylinder with bucket in maximum force pinhole): 93,3 kN
Maximum digging force (exerted by stick cylinder with bucket in maximum force pinhole): 75 kN

General purpose buckets have two pinholes to adapt bucket to different work conditions. Bucket pinhole #1 provides wide curling arc with less force, and pinhole #2 is for smaller curling arc with more force.

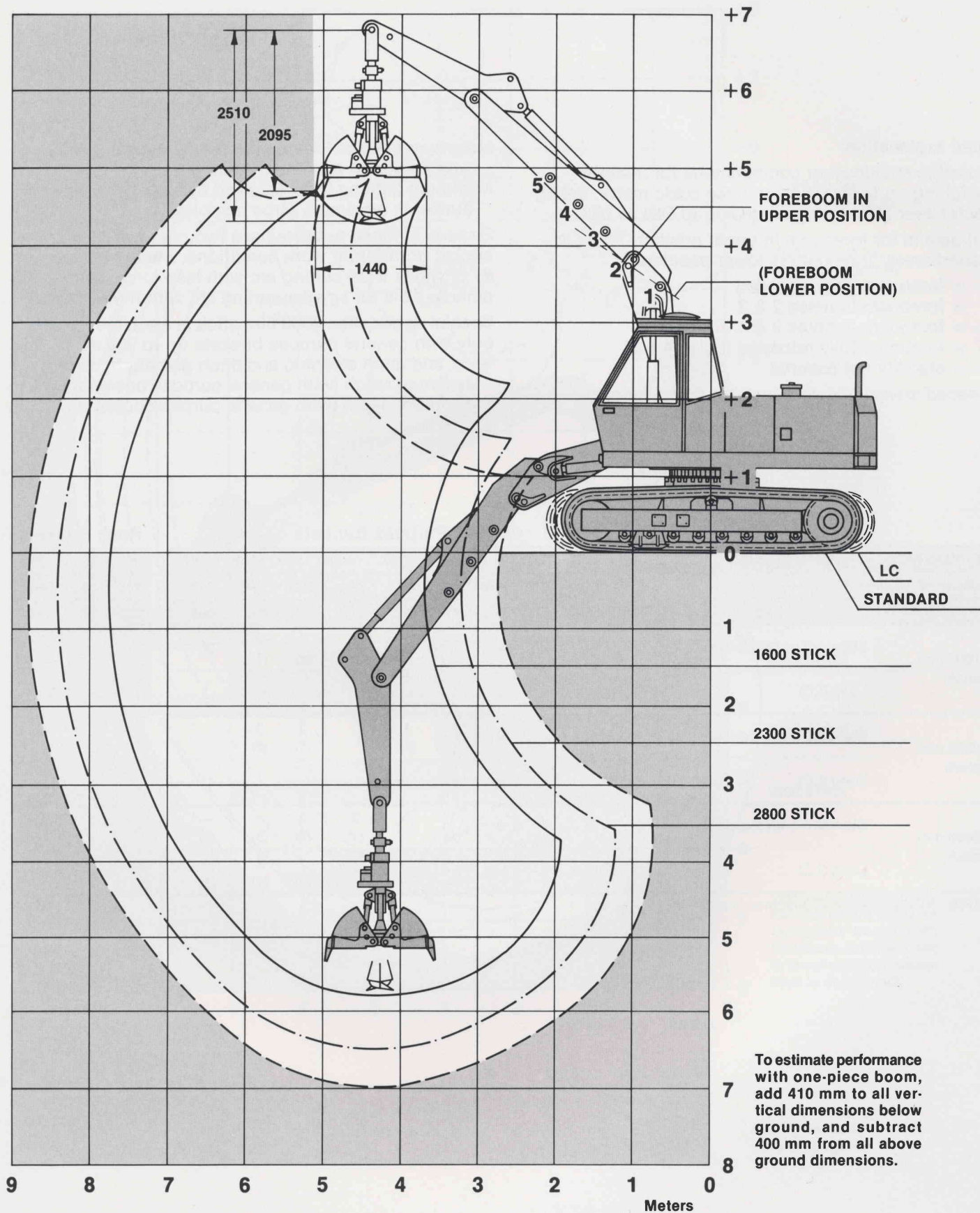
Special Application 4000 mm stick is available for use only with general purpose buckets up to 900 mm wide, and ditch cleaning and ditch grading buckets —
Maximum reach (with general purpose buckets): 9,9 m
Maximum depth (with general purpose buckets): 7,1 m

General Purpose Buckets

Rock Buckets

Cutting width		mm	500	600	700	800	900	1000	1100	1200	1300	1400			
Capacity (ISO-Norm)		l	245	310	380	450	520	590	660	725	790	855	600	750	1000
Weight		kg	295	315	350	370	410	435	460	510	575	600	325	375	435
1600 mm stick	Standard undercarriage		x	x	x	x	x	x	1 (x)	1 (x)	2 (1)	2	x	x	x
	Long (LC)		x	x	x	x	x	x	x	x	x	1 (x)	x	x	x
2300 mm stick	Standard undercarriage		x	x	x	x	x	1 (x)	1	2 (1)	3 (2)	3	x	x	1 (x)
	Long (LC)		x	x	x	x	x	x	x	x	1 (x)	1	x	x	x
2800 mm stick	Standard undercarriage		x	x	x	x	1 (x)	1	2 (1)	3 (2)	— (3)	— (3)	x	x	2 (1)
	Long (LC)		x	x	x	x	x	x	x	1 (x)	2 (1)	2 (1)	x	x	x

NOTE: All data assumes machine on firm, level ground.



Data explanation:

Possible stick/clamshell combinations for material weighing up to 1800 kg per loose cubic meter. Safety factor over 360° swing according to DIN 24 087.

All data is for foreboom in upper position. (Data in parentheses: foreboom in lower position.)

With foreboom in lower position, digging depths are increased 410 mm and dumping heights are reduced by:

- 1095 mm (for 1600 mm stick)
- 1270 mm (for 2300 mm stick)
- 1390 mm (for 2800 mm stick)

With clamshell extensions, digging depth increases and dump height decreases proportionally with the length of the extension.

Data in the chart below is with bucket cylinder and linkage (totaling 210 kg) and indicated clam installed.

x = foreboom fully extended (holes 1 & 2)

1 = foreboom in holes 2 & 3

2 = foreboom in holes 3 & 4

3 = foreboom full retracted (holes 4 & 5)

— = stability not assured

Shaded area indicates one-piece boom range.

Clamshells (with hydraulic rotator)

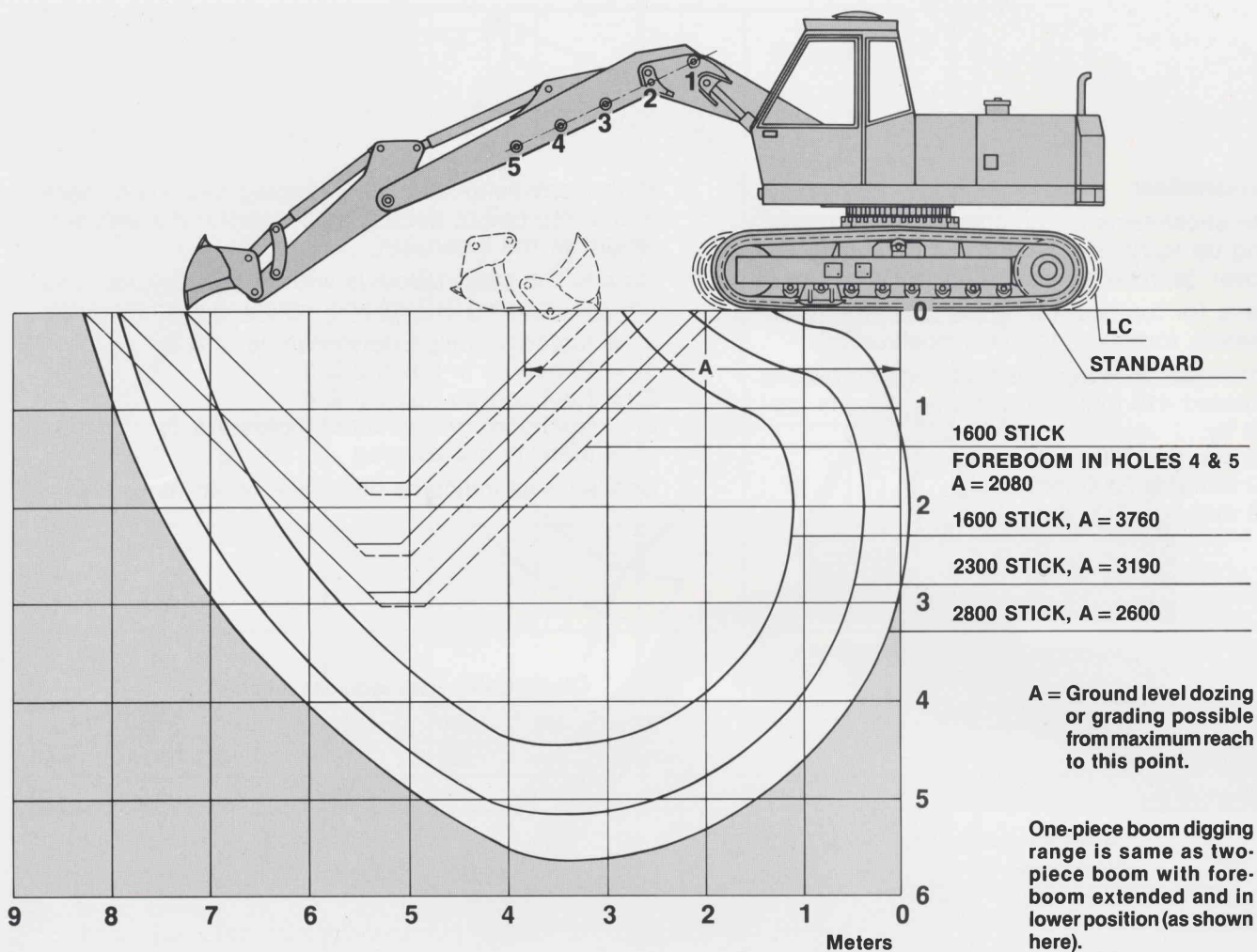
Cutting width	mm	280	280†	380	380†	600	700	800	800
Capacity	l	135	135	190	190	310	360	410	450
Weight	kg	525	550	565	590	625	675	725	740
1600 mm stick	Standard undercarriage	x	x	x	x	x	x	x	x
	Long (LC)	x	x	x	x	x	x	x	x
2300 mm stick	Standard undercarriage	x	x	x	x	x	x	x	1 (x)
	Long (LC)	x	x	x	x	x	x	x	x
2800 mm stick	Standard undercarriage	x	x	x	x	x	x	1 (x)	1
	Long (LC)	x	x	x	x	x	x	x	x

NOTE: All data assumes machine on firm, level ground.

Closing force:
41 kN

Closing force:
39 kN

†With ejector.



Data explanation:

Possible stick/ditch cleaning and grading bucket combinations for material weighing up to 1800 kg per loose cubic meter. Safety factor over 360° swing according to DIN 24 087.

All data is for foreboom in upper position. (Data in parentheses: foreboom in lower position.)

x = foreboom fully extended.

1 = foreboom in holes 2 & 3.

2 = foreboom in holes 3 & 4.

Shaded areas indicate one-piece boom range.

Special Application 4000 mm stick available —

Maximum reach (ditch cleaning buckets): 9,1 m

Maximum depth (ditch cleaning buckets): 6,7 m

		Ditch Cleaning Buckets								Ditch Grading			
		Rigid ($\pm 0^\circ$)				Hydraulically Tilttable $\pm 45^\circ$ (adjustable to angle of slope)				Rigid ($\pm 0^\circ$)		Hydraulically Tilttable $\pm 45^\circ$	
Cutting width	mm	1500	1800	2000	2400	1500	1800	2000	2400	2000	2400	2000	2400
Capacity	l	355	430	480	580	355	430	480	580	230	280	230	280
Weight	kg	330	405	440	505	495	550	585	650	340	395	495	550
1600 mm stick	Standard undercarriage	x	x	x	x	x	x	x	1 (x)	x	x	x	x
	Long (LC)	x	x	x	x	x	x	x	x	x	x	x	x
2300 mm stick	Standard undercarriage	x	x	x	1 (x)	x	x	x	1	x	x	x	x
	Long (LC)	x	x	x	x	x	x	x	x	x	x	x	x
2800 mm stick	Standard undercarriage	x	x	x	1	x	x	1 (x)	2 (1)	x	x	x	x
	Long (LC)	x	x	x	x	x	x	x	1 (x)	x	x	x	x

NOTE: All data assumes machine on firm, level ground.

