



# Åkerman H7MC

International 13

Engine power.....107 kW (145 hp)  
Operating weight .....14.9 t  
Bucket .....280 - 965 l



**ÅKERMAN**

# BASE MACHINE



## DIESEL ENGINE

### VOLVO TD61ACE

The TD61ACE is a turbocharged 6-cylinder, 4-stroke diesel engine with water cooling and direct injection.

Output at 1800 rpm ..... 107 kW (145 hp)  
(According to ISO 3046 and DIN 6271)

Cylinder diameter ..... 98.43 mm

Piston stroke ..... 120 mm

Stroke volume ..... 5.48 dm<sup>3</sup>

The engine is equipped with an electric heater element to facilitate starting in cold weather.



## ELECTRIC SYSTEM, 24V

A.C. Generator ..... 28V/55A

Battery ..... 4 pcs. (12V)

Battery capacity ..... 2 x 60 Ah



## HYDRAULIC SYSTEM

### Pump 1 (slew, pressure controlled)

Max. pressure ..... 28 MPa (280 bar)

Max. flow ..... 64 l/min

### Pumps 2 and 3 (power and pressure controlled)

Max. pressure ..... 25 MPa (250 bar)

Max. flow ..... 2 x 114 l/min

### Pumps 2 and 3 with HLD

Max. pressure ..... 29 MPa (290 bar)

### Servo pump

Pressure ..... 6.5 MPa (65 bar)

Flow ..... approx. 18 l/min

### Steering pump

Pressure ..... 14 MPa (140 bar)

Flow ..... 34 l/min



## SLEWING SYSTEM

The superstructure is slewed by an axial piston motor. Cab lock, slew gearbox and slew drive shaft are geared between the slew motor and the inner tooth race of the slew ring.

Slewing speed ..... 7.9 rpm

90° turn, from start to stop ..... 4.1 s

180° turn, from start to stop ..... 6.1 s

(Bucket empty - equipment extended)



## UNDERCARRIAGE

### Running

A hydraulically variable piston motor operates both drive shafts (4 wheel drive) via a two-step gearbox.

The drive shafts have hub reduction and are provided with drum brakes.

The parking brake is of drum type and is activated by spring power and hydraulically released.

Two separately controlled outriggers, hydraulically locked.

Twin wheels ..... 10.00 - 20PR16

Travel speed, road travel ..... 0 - 28 km/h

Travel speed, site travel ..... 0 - 6.7 km/h

Max. tractive force, site travel ..... 101 kN (10.3 Mp)



## CYLINDER DATA

### Boom cylinder

Internal diameter ..... 150 mm

Piston rod diameter ..... 105 mm

Piston stroke ..... 1225 mm

Piston force, out ..... 442 kN (45.0 Mp)

Piston force, out with HLD ..... 512 kN (52.2 Mp)

### Dipper arm cylinder

Internal diameter ..... 140 mm

Piston rod diameter ..... 90 mm

Piston stroke ..... 1100 mm

Piston force, out ..... 385 kN (39.2 Mp)

Piston force, out with HLD ..... 446 kN (45.5 Mp)

### Bucket cylinder

Internal diameter ..... 125 mm

Piston rod diameter ..... 80 mm

Piston stroke ..... 850 mm

Piston force, out ..... 307 kN (31.3 Mp)

Piston force, out with HLD ..... 356 kN (36.3 Mp)



## VOLUMES

Fuel tank ..... 290 l

Hydraulically driven fuel pump, capacity ..... approx. 90 l/min

Cooling system (incl. glycol) ..... 28 l

Hydraulic system, total ..... 320 l

Hydraulic oil tank ..... 220 l

Diesel engine (lubricating oil) ..... 22 l

Pump gearbox ..... 3.1 l

Slew gearbox ..... 16.5 l

Slew ring ..... 20 l

Travel gearbox ..... 5 l

Front and rear axle ..... 2 x 12 l

Hub gear ..... 4 x 1.5 l



## SOUND LEVEL

Surroundings (10 metres distance from the machine)

Average value L<sub>pA</sub> (acoustic pressure) ..... 75 dB(A)

Average value L<sub>WA</sub> (acoustic power) ..... 103 dB(A)

(According to ISO 6393)

Inside the cab with the door closed

Average value L<sub>pA</sub> (acoustic pressure) ..... 73 dB(A)

(According to ISO 6394)

Approved according to 86/662/EEC



## WEIGHTS

Base machine incl. counterweight ..... 12380 kg

Counterweight ..... 1750 kg

Dozer blade ..... 600 kg

Equipment, with 2.0 m dipper arm ..... 2560 kg

Equipment, with 2.4 m dipper arm ..... 2650 kg

Equipment, with 2.8 m dipper arm ..... 2670 kg

### Total weight, complete excavator with 2.0 m

dipper arm and dozer blade ..... 14.9 t

### Axle load, complete excavator with dozer blade

Front axle ..... 7.9 t

Rear axle ..... 7.0 t



# BACKHOE EQUIPMENT

## BACKHOE EQUIPMENT

Boom length .....4.65 m

### Data for 2.0 m dipper arm

HD-bucket 700 litres CECE = 725 litres SAE J296

Weight.....540 kg

Cutting width .....990 mm

### Data for 2.4 m dipper arm

HD-bucket 700 litres CECE = 725 litres SAE J296

Weight.....540 kg

Cutting width .....990 mm

### Data for 2.8 m dipper arm

HD-bucket 600 litres CECE = 625 litres SAE J296

Weight.....480 kg

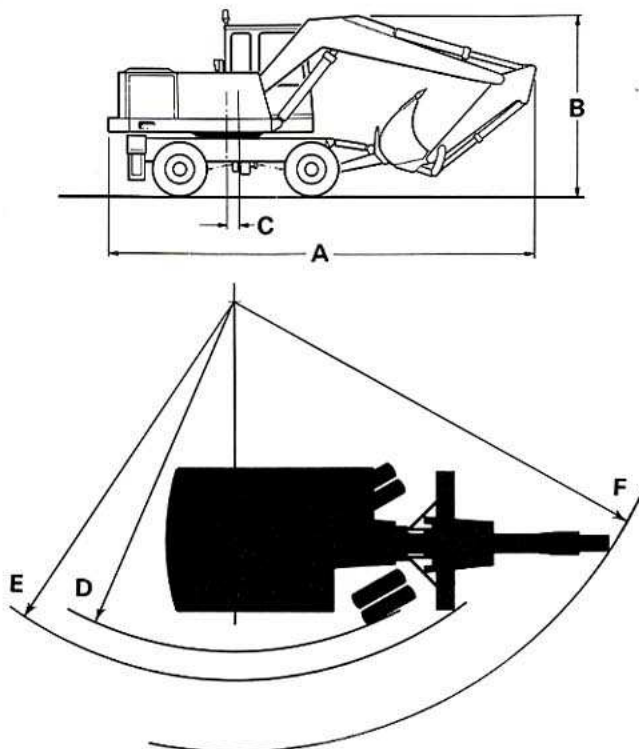
Cutting width .....930 mm

## DIGGING FORCE

	Dipper arm 2.0 m	Dipper arm 2.4 m	Dipper arm 2.8 m
Digging force at bucket teeth due to bucket cylinder at 160° torsional angle of the bucket	106 kN (10.8 Mp)	106 kN (10.8 Mp)	111 kN (11.3 Mp)

Digging force at bucket teeth due to dipper arm	84 kN (8.6 Mp)	75 kN (7.7 Mp)	69 kN (7.0 Mp)
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Digging forces are calculated with Åkermans' standard buckets.

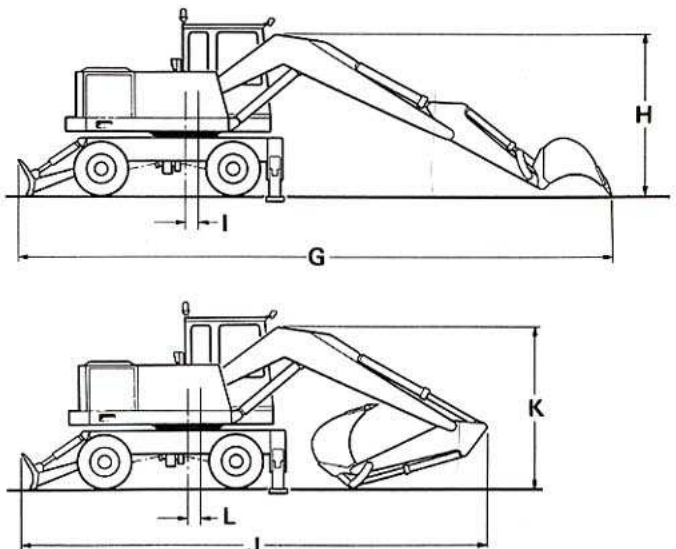


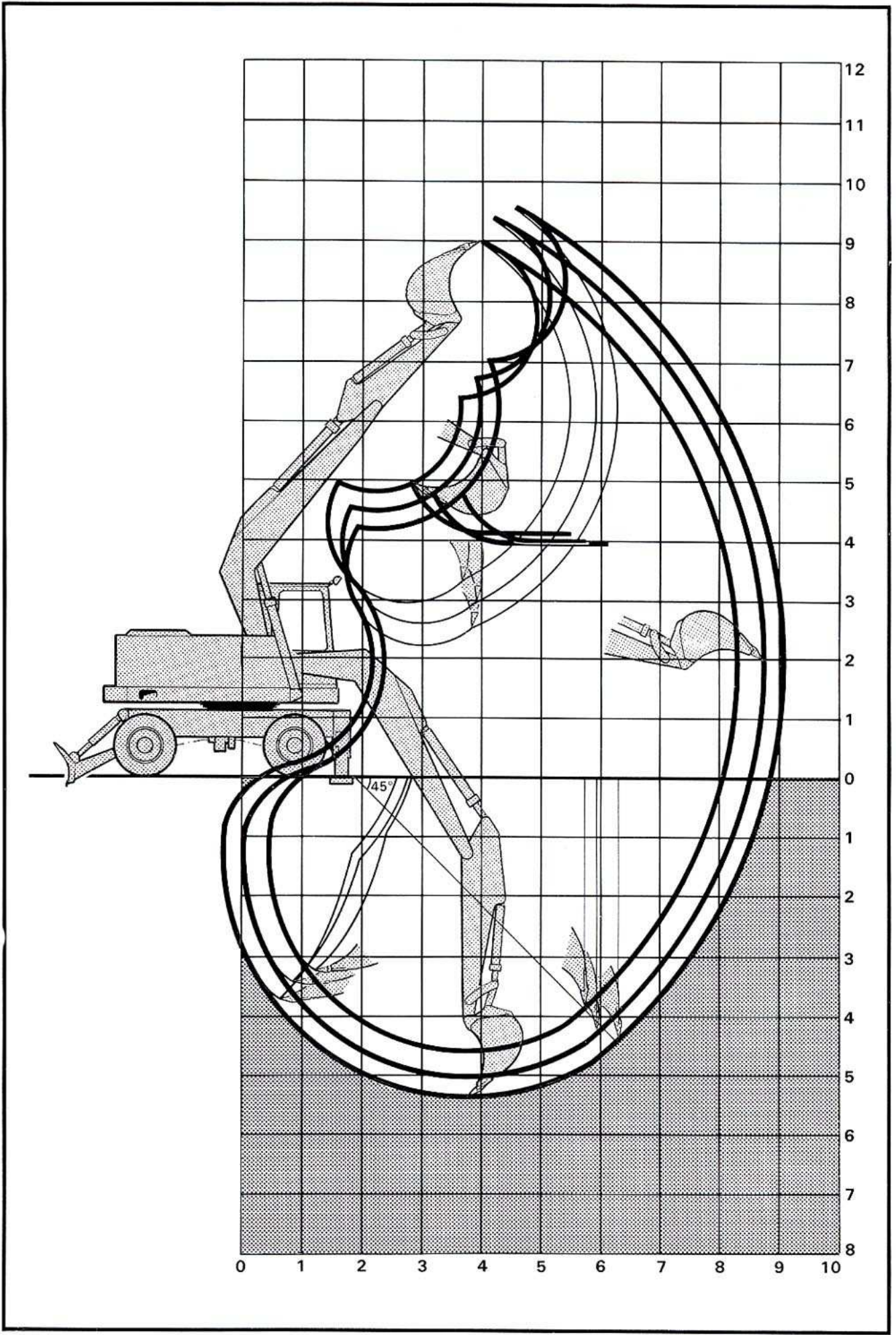
## DIGGING DATA

	Dipper arm 2.0 m	Dipper arm 2.4 m	Dipper arm 2.8 m
Max. reach at ground level	8.1 m	8.5 m	8.8 m
Max. digging depth	4.6 m	5.0 m	5.3 m
Max. height, ground - tooth tip	9.0 m	9.4 m	9.5 m
Max. practical dumping height	4.1 m	3.9 m	4.0 m
Practical digging depth at a repose of material of 45°	3.9 m	4.2 m	4.4 m
Max. vertical digging depth	3.8 m	4.2 m	4.3 m
Max. reach, slewing centre - bucket attachment	7.0 m	7.4 m	7.8 m
Max. height, ground - bucket attachment	7.7 m	8.1 m	8.3 m
Min. slewing radius in front	3.1 m	3.3 m	3.4 m

## TRANSPORT DATA

Min. transport length with folded equipment resting on dozer blade (A)	8.0 m	7.9 m	7.7 m
Min. transport height with folded equipment resting on dozer blade (B)	3.4 m	3.7 m	4.0 m
Distance, slewing centre - centre of gravity (folded equipment resting on dozer blade) (C)	0.3 m	0.3 m	0.3 m
Turning radius (D)	6.8 m	6.8 m	6.8 m
Turning radius, incl dozer blade (E)	7.4 m	7.4 m	7.4 m
Clearance radius (F)	8.2 m	8.0 m	7.8 m
Total length with extended equipment (G)	10.9 m	11.4 m	11.7 m
Min. transport height with extended equipment (H)	3.1 m	3.1 m	3.2 m
Distance slewing centre - centre of gravity (extended equipment) (I)	0.3 m	0.3 m	0.3 m
Min. transport length with folded equipment at ground level (J)	8.6 m	8.6 m	8.6 m
Min. transport height with folded equipment at ground level (K)	3.2 m	3.3 m	3.4 m
Distance slewing centre - centre of gravity (folded equipment at ground level) (L)	0.14 m	0.16 m	0.17 m





H7MC

# LIFTING CAPACITY

MAX LOAD IN BUCKET HOOK (kg) = 80% OF THE TIPPING LOAD

A = Height of bucket attachment (m) B = Reach of load from centre (m)

WITH 2.0 m DIPPER ARM

ALONG UNDERCARRIAGE

SUPPORT UP

A \ B	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	Max. reach
7			2960*						2740 /B= 5.5
6			3000*	2350					1990 /B= 6.5
5			3110	2310	1710				1600 /B= 7.2
4		4240	3000	2210	1670				1400 /B= 7.6
3		3860	2790	2100	1600				1300 /B= 7.8
2		3600	2610	1990	1540				1230 /B= 7.9
1		3470	2500	1900	1480				1200 /B= 7.9
0		3450	2450	1850	1450				1250 /B= 7.7
-1	5540	3460	2440	1840	1460				1370 /B= 7.3
-2	5600	3510	2470	1880					1630 /B= 6.6
-3	5560	3600	2560						2120 /B= 5.7
-4									
-5									
-6									

WITH 2.0 m DIPPER ARM

ACROSS UNDERCARRIAGE

SUPPORT UP

A \ B	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	Max. reach
7			2960*						2560 /B= 5.5
6			2990*	2180					1830 /B= 6.5
5			2950	2140	1550				1450 /B= 7.2
4		4010	2800	2040	1520				1260 /B= 7.6
3		3610	2590	1920	1450				1160 /B= 7.8
2		3350	2410	1810	1390				1090 /B= 7.9
1		3220	2290	1730	1330				1070 /B= 7.9
0		3190	2240	1680	1300				1110 /B= 7.7
-1	5250	3210	2230	1660	1310				1220 /B= 7.3
-2	5310	3260	2260	1700					1470 /B= 6.6
-3	5260	3350	2360						1940 /B= 5.7
-4									
-5									
-6									

Loads marked with an asterisk (\*) are limited by the lifting capacity of the hydraulic system. Other loads limited due to machine stability.  
Working pressure with HLD = 29 MPa (290 bar)

# LIFTING CAPACITY

MAX LOAD IN BUCKET HOOK (kg) = 80% OF THE TIPPING LOAD

A = Height of bucket attachment (m) B = Reach of load from centre (m)

WITH 2.0 m DIPPER ARM

ALONG UNDERCARRIAGE

SUPPORT UP

A \ B	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	Max. reach
7			2960*						2740 /B= 5.5
6			3000*	2350					1990 /B= 6.5
5			3110	2310	1710				1600 /B= 7.2
4		4240	3000	2210	1670				1400 /B= 7.6
3		3860	2790	2100	1600				1300 /B= 7.8
2		3600	2610	1990	1540				1230 /B= 7.9
1		3470	2500	1900	1480				1200 /B= 7.9
0		3450	2450	1850	1450				1250 /B= 7.7
-1	5540	3460	2440	1840	1460				1370 /B= 7.3
-2	5600	3510	2470	1880					1630 /B= 6.6
-3	5560	3600	2560						2120 /B= 5.7
-4									
-5									
-6									

WITH 2.0 m DIPPER ARM

ACROSS UNDERCARRIAGE

SUPPORT UP

A \ B	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	Max. reach
7			2960*						2560 /B= 5.5
6			2990*	2180					1830 /B= 6.5
5			2950	2140	1550				1450 /B= 7.2
4		4010	2800	2040	1520				1260 /B= 7.6
3		3610	2590	1920	1450				1160 /B= 7.8
2		3350	2410	1810	1390				1090 /B= 7.9
1		3220	2290	1730	1330				1070 /B= 7.9
0		3190	2240	1680	1300				1110 /B= 7.7
-1	5250	3210	2230	1660	1310				1220 /B= 7.3
-2	5310	3260	2260	1700					1470 /B= 6.6
-3	5260	3350	2360						1940 /B= 5.7
-4									
-5									
-6									

Loads marked with an asterisk (\*) are limited by the lifting capacity of the hydraulic system. Other loads limited due to machine stability.  
Working pressure with HLD = 29 MPa (290 bar)

# LIFTING CAPACITY

MAX LOAD IN BUCKET HOOK (kg) = 100% OF THE TIPPING LOAD  
 A = Height of bucket attachment (m) B = Reach of load from centre (m)

WITH 2.4 m DIPPER ARM                      ALONG UNDERCARRIAGE                      SUPPORT UP

A \ B	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	Max. reach
7				2360					2180 /B= 6.2
6				2380	1710				1710 /B= 7.0
5			2940*	2320	1720				1420 /B= 7.6
4		4090*	3040	2220	1660	1240			1240 /B= 8.0
3		3930	2820	2100	1590	1210			1110 /B= 8.3
2		3620	2620	1970	1520	1170			1050 /B= 8.4
1		3430	2480	1870	1450	1130			1060 /B= 8.3
0		3370	2400	1810	1410	1120			1090 /B= 8.1
-1	5380	3370	2370	1780	1390				1200 /B= 7.7
-2	5450	3400	2390	1790	1430				1370 /B= 7.2
-3	5560	3480	2450	1890					1750 /B= 6.3
-4									
-5									
-6									

WITH 2.4 m DIPPER ARM                      ACROSS UNDERCARRIAGE                      SUPPORT UP

A \ B	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	Max. reach
7				2180					2010 /B= 6.2
6				2210	1560				1560 /B= 7.0
5			2910*	2150	1570				1280 /B= 7.6
4		3990	2840	2050	1510	1110			1110 /B= 8.0
3		3690	2620	1930	1440	1080			980 /B= 8.3
2		3370	2410	1800	1360	1040			920 /B= 8.4
1		3180	2270	1700	1300	1000			930 /B= 8.3
0		3110	2190	1630	1250	980			960 /B= 8.1
-1	5080	3110	2160	1610	1240				1060 /B= 7.7
-2	5150	3150	2180	1620	1270				1220 /B= 7.2
-3	5270	3230	2240	1710					1580 /B= 6.3
-4									
-5									
-6									

Loads marked with an asterisk (\*) are limited by the lifting capacity of the hydraulic system. Other loads limited due to machine stability.  
 Working pressure with HLD = 29 MPa (290 bar)



# LIFTING CAPACITY

MAX LOAD IN BUCKET HOOK (kg) = 100% OF THE TIPPING LOAD  
 A = Height of bucket attachment (m) B = Reach of load from centre (m)

WITH 2.4 m DIPPER ARM		ALONG UNDERCARRIAGE							SUPPORT DOWN
A \ B	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	Max. reach
7				2860*					2790*/B= 6.2
6				2740*	2870*				2870*/B= 7.0
5			2940*	2920*	2980*				2910*/B= 7.6
4		4090*	3580*	3280*	3140*	2960*			2960*/B= 8.0
3		5300*	4290*	3720*	3390*	3170*			2440*/B= 8.3
2		6630*	4980*	4160*	3650*	3180			2240*/B= 8.4
1		7600*	5660*	4520*	3870*	3140			2900*/B= 8.3
0		8020*	6020*	4770*	3850	3120			2960*/B= 8.1
-1	11010*	7920*	6070*	4850*	3840				3320 /B= 7.7
-2	10260*	7550*	5830*	4670*	3690*				3000*/B= 7.2
-3	8930*	6660*	5110*	3960*					3520*/B= 6.3
-4									
-5									
-6									

WITH 2.4 m DIPPER ARM		ACROSS UNDERCARRIAGE							SUPPORT DOWN
A \ B	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	Max. reach
7				2860*					2790*/B= 6.2
6				2740*	2870*				2870*/B= 7.0
5			2940*	2920*	2980*				2670 /B= 7.6
4		4090*	3580*	3280*	3030	2390			2390 /B= 8.0
3		5300*	4290*	3720*	2990	2360			2190 /B= 8.3
2		6630*	4980*	3750	2900	2310			2120 /B= 8.4
1		7090	4860	3630	2830	2270			2130 /B= 8.3
0		7020	4770	3550	2780	2250			2200 /B= 8.1
-1	11010*	7000	4740	3520	2770				2400 /B= 7.7
-2	10260*	7030	4760	3530	2800				2690 /B= 7.2
-3	8930*	6660*	4830	3630					3380 /B= 6.3
-4									
-5									
-6									

Loads marked with an asterisk (\*) are limited by the lifting capacity of the hydraulic system. Other loads limited due to machine stability.  
 Working pressure with HLD = 29 MPa (290 bar)

# LIFTING CAPACITY

MAX LOAD IN BUCKET HOOK (kg) = 80% OF THE TIPPING LOAD  
 A = Height of bucket attachment (m) B = Reach of load from centre (m)

WITH 2.8 m DIPPER ARM                      ALONG UNDERCARRIAGE                      SUPPORT UP

A \ B	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	Max. reach
7				2410					1980 /B= 6.6
6				2380	1780				1560 /B= 7.4
5				2360	1760	1290			1290 /B= 8.0
4			3030	2280	1700	1280			1130 /B= 8.4
3		4070	2900	2150	1630	1240			1040 /B= 8.6
2		3700	2670	2010	1540	1190			990 /B= 8.7
1		3460	2500	1900	1470	1140			990 /B= 8.6
0	5160	3340	2400	1810	1410	1110			1020 /B= 8.4
-1	5250	3310	2350	1770	1380	1110			1090 /B= 8.1
-2	5300	3330	2350	1770	1400				1260 /B= 7.5
-3	5410	3400	2390	1820					1520 /B= 6.8
-4		3520	2510						2240 /B= 5.4
-5									
-6									

WITH 2.8 m DIPPER ARM                      ACROSS UNDERCARRIAGE                      SUPPORT UP

A \ B	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	Max. reach
7				2270					1830 /B= 6.6
6				2250	1630				1420 /B= 7.4
5				2210	1610	1160			1160 /B= 8.0
4			2890*	2110	1550	1150			1000 /B= 8.4
3		3840	2700	1980	1480	1110			920 /B= 8.6
2		3450	2470	1840	1390	1060			870 /B= 8.7
1		3210	2290	1720	1310	1010			860 /B= 8.6
0	4850	3090	2190	1640	1260	980			890 /B= 8.4
-1	4940	3060	2140	1590	1230	970			960 /B= 8.1
-2	5000	3080	2140	1590	1240				1110 /B= 7.5
-3	5120	3150	2190	1640					1360 /B= 6.8
-4		3270	2300						2050 /B= 5.4
-5									
-6									

Loads marked with an asterisk (\*) are limited by the lifting capacity of the hydraulic system. Other loads limited due to machine stability.  
 Working pressure with HLD = 29 MPa (290 bar)

# LIFTING CAPACITY

MAX LOAD IN BUCKET HOOK (kg) = 80% OF THE TIPPING LOAD  
 A = Height of bucket attachment (m) B = Reach of load from centre (m)

WITH 2.8 m DIPPER ARM                      ALONG UNDERCARRIAGE                      SUPPORT DOWN

A \ B	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	Max. reach
7				2470					2680*/B= 6.6
6				2430*	2680*				2670*/B= 7.4
5				2630*	2720*	2400*			2400*/B= 8.0
4			3190*	3010*	2910*	2920*			2140*/B= 8.4
3		4740*	3940*	3470*	3190*	3050*			2340*/B= 8.6
2		6150*	4660*	3940*	3480*	3180*			2190*/B= 8.7
1		7300*	5390*	4350*	3750*	3150			2700*/B= 8.6
0	7780*	7870*	5870*	4650*	3860	3120			2890*/B= 8.4
-1	11080*	7930*	6050*	4830*	3820	3110			2580*/B= 8.1
-2	10630*	7700*	5940*	4760*	3830				3420*/B= 7.5
-3	9580*	7060*	5450*	4330*					3380*/B= 6.8
-4		5610*	4250*						3730*/B= 5.4
-5									
-6									

WITH 2.8 m DIPPER ARM                      ACROSS UNDERCARRIAGE                      SUPPORT DOWN

A \ B	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	Max. reach
7				2470*					2680*/B= 6.6
6				2430*	2680*				2670*/B= 7.4
5				2630*	2720*	2400*			2400*/B= 8.0
4			3190*	3010*	2910*	2430			2140*/B= 8.4
3		4740*	3940*	3470*	3010	2390			2080 /B= 8.6
2		6150*	4660*	3780*	2940	2330			2000 /B= 8.7
1		7120	4900	3660	2850	2280			2010 /B= 8.6
0	7780*	6970	4770	3560	2790	2240			2080 /B= 8.4
-1	11080*	6930	4720	3510	2750	2240			2200 /B= 8.1
-2	10630*	6960	4720	3510	2770				2500 /B= 7.5
-3	9580*	6990*	4770	3570					2960 /B= 6.8
-4		5610*	4250*						3730*/B= 5.4
-5									
-6									

Loads marked with an asterisk (\*) are limited by the lifting capacity of the hydraulic system. Other loads limited due to machine stability.  
 Working pressure with HLD = 29 MPa (290 bar)

Specifications and design are subject to change without notice.  
Reservation is made for minor deviations of dimensions and weights listed.

Åkerman Printing M90721/06/91 From machine No. 2149 - up

**VME Excavators AB**  
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