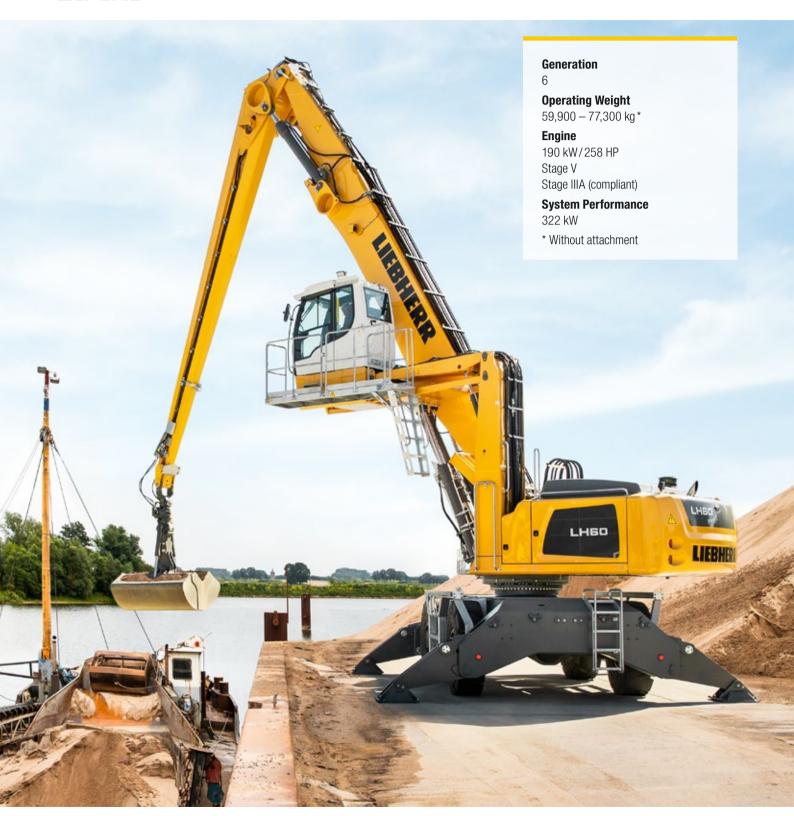
# Material Handling Machine

# **LH 60 Port**

Litronie



# LIEBHERR

# **Technical Data**

# Diesel Engine

g			
Rating per ISO 9249	190 kW (258 HP) at 1,800 RPM		
Model	Liebherr D944		
Туре	4 cylinder in-line		
Bore/Stroke	130/150 mm		
Displacement	8.01		
Engine operation	4-stroke diesel		
	Common-Rail		
	turbo-charged and after-cooled		
	reduced emissions		
Air cleaner	dry-type air cleaner with pre-cleaner, primary		
	and safety elements		
Engine idling	sensor controlled		
Electrical system			
Voltage	24 V		
Batteries	2 x 180 Ah/12 V		
Alternator	three-phase current 28 V/140 A		
Stage V			
Harmful emissions values	according to regulation (EU) 2016/1628		
Emission control	Liebherr-SCRFilter technology		
Fuel tank	518		
Urea tank	65 I		
Stage IIIA (compliant)			
Harmful emissions values	in accordance with ECE-R.96 Power Band H		
Fuel tank	518 l		

# ≈ Cooling System

0,	
Diesel engine	water-cooled
	compact cooling system consisting cooling unit
	for water, hydraulic oil and charge air with step-
	less thermostatically controlled fan

# Hydraulic Controls

Power distribution	via control valves with integrated safety valves simultaneous actuation of chassis and equip-	
	ment. Swing drive in separate closed circuit	
Servo circuit		
Equipment and swing	with electro-hydraulic pilot control and proportional joystick levers	
Chassis		
Mobile	electroproportional via foot pedal	
Crawler	with electric proportionally functioning foot	
	pedals or adjusted with plugable levers	
Additional functions	via switch or electroproportional foot pedals	
Proportional control	proportionally acting transmitters on the joy-	
	sticks for additional hydraulic functions	

# Hydraulic System

	····			
Hydraulic pump				
for equipment	2 Liebherr axial piston variable displacement			
and travel drive	pumps (double construction)			
Max. flow	2 x 302 l/min.			
Max. pressure	350 bar			
for swing drive	reversible axial piston variable displacement pump, closed-loop circuit			
Max. flow	199 I/min.			
Max. pressure	370 bar			
Hydraulic pump regulation and control	2 circuit Liebherr-Synchron-Comfort-system (LSC) with electronic engine speed sensing regulation, pressure and flow compensation, automatic oil flow optimizer			
Hydraulic tank	265 l			
Hydraulic system	890			
Hydraulic oil filter	2 main return filters with integrated partial microfiltration (5 µm)			
MODE selection	adjustment of engine and hydraulic performand via a mode pre-selector to match application, e.g. for especially economical and environmentally friendly operation or for maximum material handling and heavy-duty jobs			
S (Sensitive)	mode for precision work and lifting through ver sensitive movements			
E (Eco)	mode for especially economical and environ- mentally friendly operation			
P (Power)	mode for high performance with low fuel consumption			
P+ (Power-Plus)	mode for highest performance and for very heavy duty applications, suitable for continuo operation			
Engine speed and	stepless alignment of engine output and			
performance setting	hydraulic power via engine speed			
Option	Tool Control: 20 preadjustable pump flows and pressures for add-on attachments			
	<u>'</u>			

# Swing Drive

Drive	Liebherr axial piston motor in a closed system Liebherr planetary reduction gear			
Swing ring	Liebherr, sealed race ball bearing swing ring, internal teeth			
Swing speed	0 – 6.5 RPM stepless			
Swing torque	118 kNm			
Holding brake	wet multi-disc (spring applied, pressure released)			
Option	slewing gear brake Comfort			

# Operator's Cab

Operator s Ca	U
Cab	safety cab structure with individual windscreens or featuring a slide-in subpart under the ceiling, work headlights integrated in the ceiling, a door with a sliding window (can be opened on both sides), large stowing and depositing possibilities, shock-absorbing suspension, sounddamping insulating, tinted laminated safety glass, separate shades for the sunroof window and windscreen
High Rise	deviating from standard: safety cab structure with fixed built-in front and roof window made from impact-resistant laminated safety glass
Operator's seat Comfort	air cushioned operator's seat with 3D-adjust- able armrests, headrest, lap belt, seat heater, adjustable seat cushion inclination and length, lockable horizontal suspension, automatic weight adjustment, adjustable suspension stiff- ness, pneumatic lumbar vertebrae support and passive seat climatisation with active coal
Operator's seat Premium (Option)	in addition to operator's seat comfort: active electronic weight adjustment (automatic re- adjustment), pneumatic low frequency suspen- sion and active seat climatisation with active coal and ventilator
Control system	joysticks with control consoles and swivel seat, folding left control console
Operation and displays	large high-resolution operating unit, selfexplan- atory, colour display with touchscreen, video- compatible, numerous setting, control and monitoring options, e.g. air conditioning control, fuel consumption, machine and attachment parameters
Air-conditioning	automatic air-conditioning, recirculated air function, fast de-icing and demisting at the press of a button, air vents can be operated via a menu; recirculated air and fresh air filters can be easily replaced and are accessible from the outside; heating-cooling unit, designed for extreme outside temperatures, sensors for solar radiation, inside and outside temperatures
Refrigerant	R134a
Global warming potential	1,430
Quantity at 25 °C*	1,400 – 2,000 g
CO <sub>2</sub> equivalent*	2.002 – 2.86 t
Vibration emission **	
Hand/arm vibrations	< 2.5 m/s <sup>2</sup>
Whole-body vibrations	< 0.5 m/s <sup>2</sup>
Measuring inaccuracy	according with standard EN 12096:1997

1	
~4^	Equipment
1-1	Equipment

Equipment	
Туре	weight-optimised design for bulk and general cargo handling at optimal handling capacity. Complex and stable mountings of equipment and cylinders
Hydraulic cylinders	Liebherr cylinders with special sealing and guide system and, depending on cylinder type, shock absorption
Energy recovering cylinder	Liebherr gas cylinder with special sealing and control system
Bearings	sealed, low maintenance



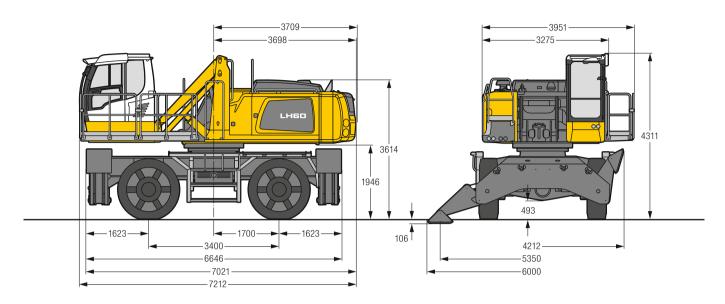
	90
Mobile	
Version	Standard, High Rise
Drive	one axle drive per drive axle with Liebherr axial piston motor and functional brake valve on both sides
Travel speed	
Joystick steering	<ul> <li>0 – 4.0 km/h stepless (creeper speed)</li> <li>0 – 12.0 km/h stepless</li> <li>0 – 3.5 km/h stepless (creeper speed) (High Rise)</li> <li>0 – 10.0 km/h stepless (High Rise)</li> </ul>
Driving operation	automotive driving using accelerator pedal, cruise control function: storage of variable accelerator pedal positions
Axles	70 t/90 t drive axles (LH 60 M/LH 60 M High Rise); manual or automatic hydraulically con- trolled front axle oscillation lock
Service brake	two circuit travel brake system with accumulator disc brake
Holding brake	wet multi-disc (spring applied, pressure released)
Stabilization	4 point outriggers
Crawler	
Versions	SW, High Rise
Drive	Liebherr compact planetary reduction gear with Liebherr axial piston motor per side of under- carriage
Travel speed	0 – 2.8 km/h stepless (creeper speed) 0 – 4.0 km/h stepless 0 – 2.5 km/h stepless (creeper speed) (High Rise) 0 – 4.0 km/h stepless (High Rise)
Brake	functional brake valves on both sides
Holding brake	wet multi-disc (spring applied, pressure released)
Track pads	triple grouser, flat
Tracks	sealed and greased

・ 神神 i 本温 Comp	nete Machine
Lubrication	Liebherr central lubrication system for upper- carriage and equipment, automatically
Mobile (Option)	Liebherr central lubrication system for under- carriage, automatically
Steps system	safe and durable access system with anti-slip steps; main components hot-galvanised
Noise emission	<u> </u>
ISO 6396	$L_{pA}$ (inside cab) = 70 dB(A) (Stage V)
2000/14/EC	L <sub>WA</sub> (surround noise) = 103 dB(A) (Stage V)
ISO 6396	L <sub>pA</sub> (inside cab) = not specified (Stage IIIA compliant)
2000/14/EC	$L_{WA}$ (surround noise) = not specified (Stage IIIA compliant)

<sup>\*</sup> depending on configuration
\*\* for risk assessment according to 2002/44/EC see ISO/TR 25398:2006

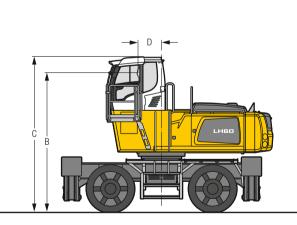
# LH 60 M – Dimensions

Port



## LH 60 M - Choice of Cab Elevation

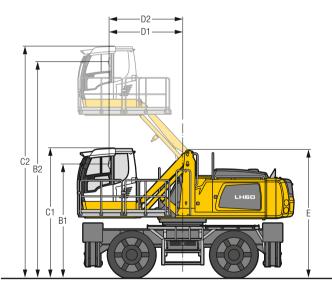
# Cab Elevation LFC (Rigid Elevation)



Increase type	LFC 120
Height	1,200 mm
В	4,646 mm
С	5,159 mm
D	788 mm

A rigid cab elevation has a fixed eye level height. For a lower transport height, the shell of the cab can be removed and replaced by a transport device. The dimension C is in this machine design for all rigid cab elevations 4,263 mm.

# Cab Elevation LHC (Hydraulic Elevation)

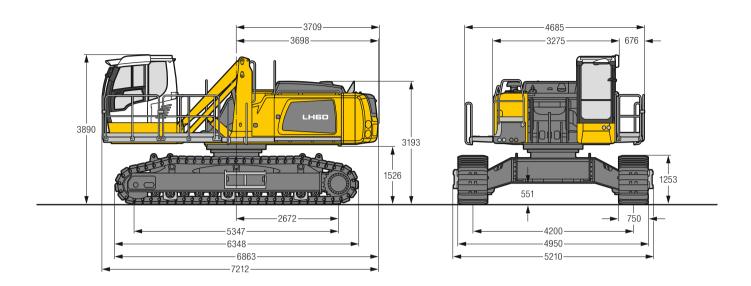


Increase type		LHC 255	LHC 340-35
B1	mm	3,436	3,797
B2	mm	5,983	7,213
C1	mm	3,949	4,311
C2	mm	6,496	7,727
D1	mm	1,343	2,457
D2	mm	1,469	2,457
E	mm	3,851	4,251

The hydraulically adjustable cab allows the driver, that he can choose his field of view freely and at any time within the stroke.

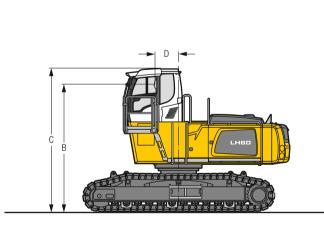
#### Tyres 18.00-25

# LH 60 C – Dimensions



## LH 60 C - Choice of Cab Elevation

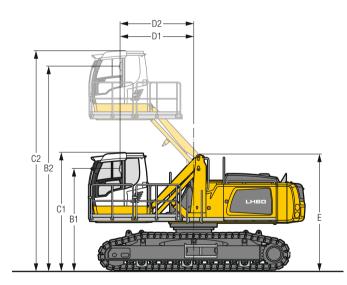
# Cab Elevation LFC (Rigid Elevation)



Increase type	LFC 120
Height	1,200 mm
В	4,228 mm
C	4,741 mm
D	788 mm

A rigid cab elevation has a fixed eye level height. For a lower transport height, the shell of the cab can be removed and replaced by a transport device. The dimension C is in this machine design for all rigid cab elevations 3,845 mm.

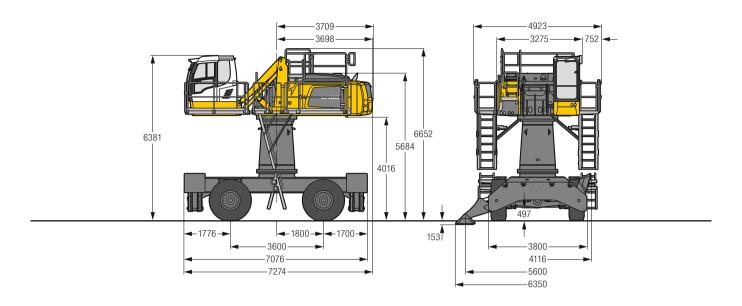
# Cab Elevation LHC (Hydraulic Elevation)



Increase type		LHC 255	LHC 340-35
B1	mm	3,025	3,377
B2	mm	5,572	6,793
C1	mm	3,539	3,890
C2	mm	6,086	7,306
D1	mm	1,343	2,457
D2	mm	1,469	2,457
E	mm	3,441	3,831

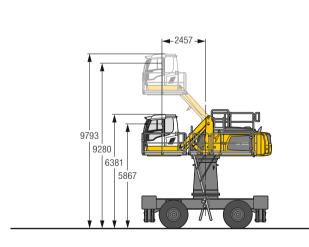
The hydraulically adjustable cab allows the driver, that he can choose his field of view freely and at any time within the stroke.

# LH 60 M HR – Dimensions



## LH 60 M HR - Choice of Cab Elevation

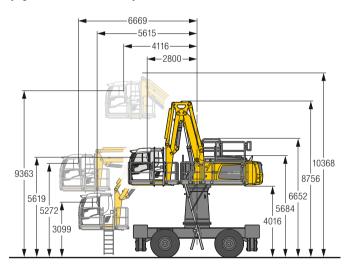
# Cab Elevation LHC (Hydraulic Elevation)



Increase type LHC 340-35

The hydraulically adjustable cab allows the driver, that he can choose his field of view freely and at any time within the stroke.

## Cab Elevation LHC-D (Hydraulic Elevation)

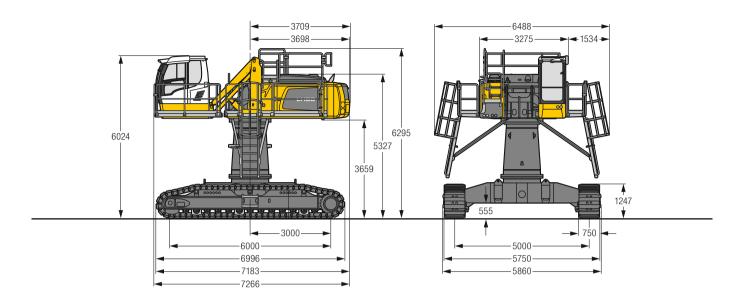


Increase type LHC-D 730

The hydraulically adjustable cab allows the driver, that he can choose his field of view freely and at any time within the stroke.

Tyres 23.5-25

# LH 60 C HR - Dimensions



## LH 60 C HR - Choice of Cab Elevation

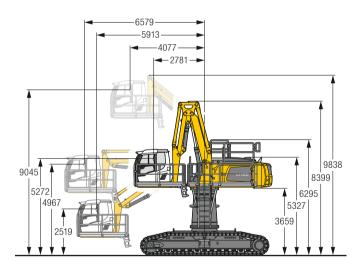
#### **Cab Elevation LHC** (Hydraulic Elevation)

# **4**-2457 **→** 9436 8923 6024 5510

LHC 340-35 Increase type

The hydraulically adjustable cab allows the driver, that he can choose his field of view freely and at any time within the stroke.

#### **Cab Elevation LHC-D** (Hydraulic Elevation)



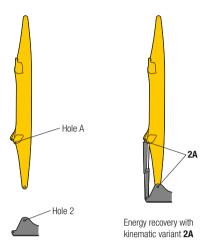
LHC-D 730

The hydraulically adjustable cab allows the driver, that he can choose his field of view freely and at any time within the stroke.

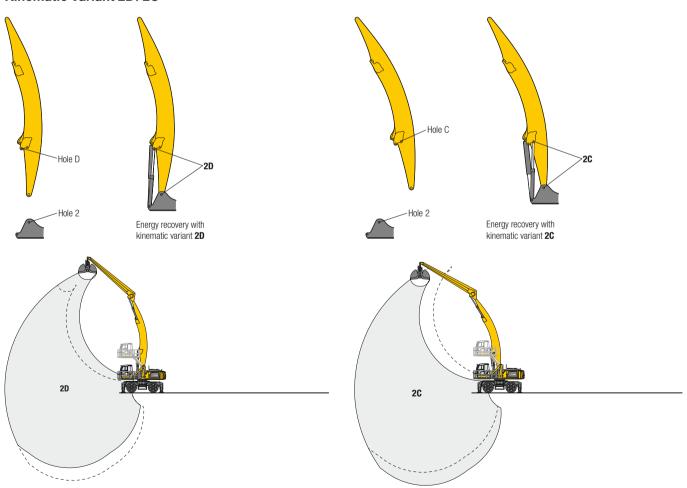
## Kinematic Variants



#### Kinematic Variant 2A



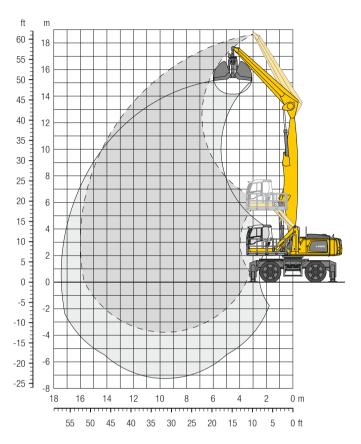
## Kinematic Variant 2D/2C



Altered range curve with additional reach depth, e.g. for unloading from ships

## LH 60 M - Equipment GG16

#### Port - Kinematic 2A

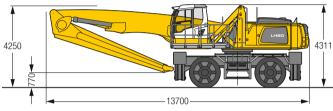


## Operating Weight

The operating weight includes the basic machine with 4 point outriggers, hydr. cab elevation, 4 solid tyres, straight boom 9.50 m, straight stick 6.80 m and grab for loose material GMZ 80/6.00 m<sup>3</sup>.

Weight 63,900 kg

#### Dimensions

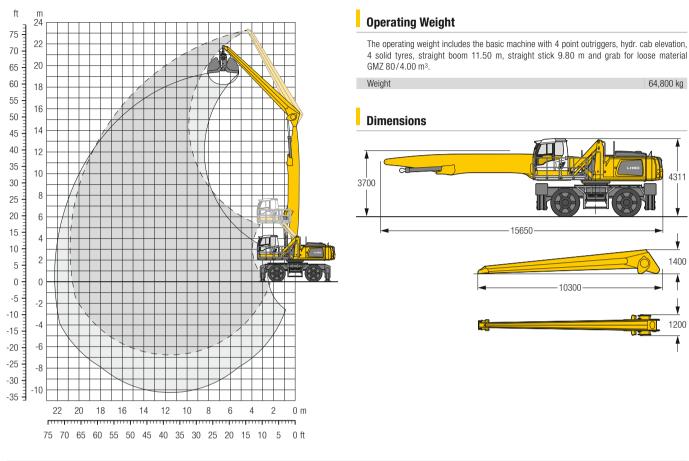


13		6.0	) m	7.5	m	9.0	) m	10.	5 m	12.	0 m	13.	5 m	15.	0 m	16.	5 m	18.	0 m	19.	5 m	21.	0 m	22.	5 m			<b>1</b>
m	Undercarriage	⊶ <b>_</b>	<u>L</u>	<b>⊶</b> ∰	<u>L</u>	<b>⊶</b> ∰	<u>L</u>	<u>⊶</u> 5	<u>L</u>	5	<u>L</u>	<b></b> ∰	<u>L</u>	<u>≨</u> )	ď	<u>5</u>	<u>L</u>	<u>⊶</u> 5	<u>L</u>	5	<u>L</u>	<b></b> 5	<u>L</u>	5	<u>Ľ</u>	<b></b> -∰	l d	m
18.0	4 pt. outriggers down																									15.6*	15.6*	5.
16.5	4 pt. outriggers down	16.9*	16.9*	14.6*	14.6*																					11.9*	11.9*	8.
15.0	4 pt. outriggers down			16.1*	16.1*	14.4*	14.4*	10.6*	10.6*																	10.4*	10.4*	10
3.5	4 pt. outriggers down			15.7*	15.7*	14.1*	14.1*	12.9*	12.9*	9.8*	9.8*															9.5*	9.5*	12
2.0	4 pt. outriggers down			15.6*	15.6*	14.0*	14.0*	12.8*	12.8*	11.8*	11.8*															9.0*	9.0*	13
0.5	4 pt. outriggers down			15.8*	15.8*	14.1*	14.1*	12.8*	12.8*	11.8*	11.8*	10.9*	10.9*													8.7*	8.7*	14
9.0	4 pt. outriggers down	17.5*	17.5*	16.4*	16.4*	14.5*	14.5*	13.0*	13.0*	11.9*	11.9*	10.9*	10.9*													8.5*	8.5*	14
7.5	4 pt. outriggers down	19.3*	19.3*	17.2*	17.2*	15.0*	15.0*	13.3*	13.3*	12.0*	12.0*	11.0*	11.0*	9.9*	9.9*											8.4*	8.4*	15
6.0	4 pt. outriggers down	22.1*	22.1*	18.2*	18.2*	15.6*	15.6*	13.7*	13.7*	12.2*	12.2*	11.0*	11.0*	9.9	9.9*											8.4*	8.4*	15
1.5	4 pt. outriggers down	24.0*	24.0*	19.3*	19.3*	16.3*	16.3*	14.1*	14.1*	12.5*	12.5*	11.1*	11.1*	9.8	9.8*											8.5*	8.5*	15
3.0	4 pt. outriggers down	25.6*	25.6*	20.2*	20.2*	16.8*	16.8*	14.4*	14.4*	12.6*	12.6*	11.1*	11.1*	9.7*	9.7*											8.4*	8.4*	16
1.5	4 pt. outriggers down	15.8*	15.8*	20.7*	20.7*	17.1*	17.1*	14.5*	14.5*	12.5*	12.5*	10.9*	10.9*	9.3*	9.3*											7.8*	7.8*	15
0	4 pt. outriggers down	12.7*	12.7*	20.3*	20.3*	16.8*	16.8*	14.2*	14.2*	12.2*	12.2*	10.4*	10.4*	8.5*	8.5*											7.2*	7.2*	15
1.5	4 pt. outriggers down	12.9*	12.9*	19.1*	19.1*	16.0*	16.0*	13.5*	13.5*	11.4*	11.4*	9.5*	9.5*													7.7*	7.7*	14
3.0	4 pt. outriggers down			16.8*	16.8*	14.3*	14.3*	12.1*	12.1*	10.0*	10.0*															9.0*	9.0*	12

The lift capacities on the stick end without attachment are stated in metric tons (t) and are valid on a firm, level supporting surface with blocked oscillating axle. These capacities can be slewed through  $360^{\circ}$  with the undercarriage in the transverse position. Capacities in the longitudinal position of the undercarriage  $(+/-15^{\circ})$  are specified over the rigid axle with the stabilizers down. Indicated loads based on the ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity. The lift capacity values indicated are attained at the corresponding operating temperature. This operating temperature is ensured by continuous movement of the boom. Weights of fitted attachments (grabs, load hooks, etc.) and load accommodation attachment are to be deducted from the lift capacity values. The lift capacity of the unit is limited by its stability, the lifting capability of the hydraulic elements, or the maximum permissible lifting capacity of the load hook.

## LH 60 M - Equipment GG21

#### Port - Kinematic 2A

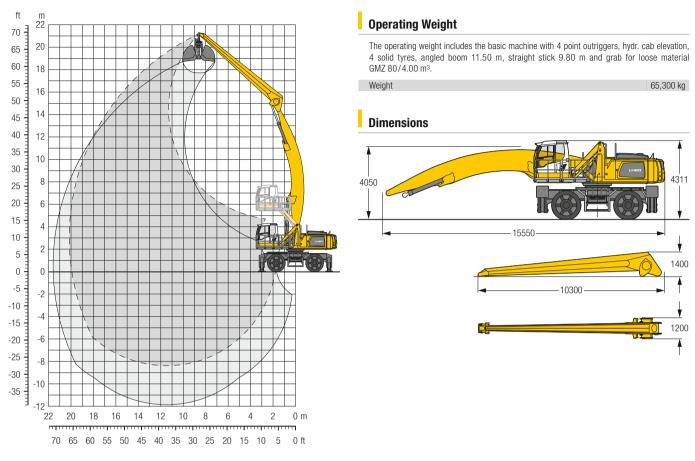


<b>1</b> /3		6.0	) m	7.5	m	9.0	m	10.	5 m	12.	0 m	13.5	5 m	15.0	0 m	16.	5 m	18.0	) m	19.	5 m	21.	0 m	22.	5 m			
<b>↓</b> // m	Undercarriage	<b>5</b>	<u>L</u>	<u>⊶</u> 5_	L	5	ď		L	<b>⊶</b>	ď	<u>5</u>	ď	5	ď	<b>⊶</b> 5	ď	5	<u>.</u>	5	<u>L</u>	5	ď	5	Ŀ	5	ď	m
22.5	4 pt. outriggers down	12.1*	12.1*																							10.5*	10.5*	7.1
21.0	4 pt. outriggers down			11.6*	11.6*	10.2*	10.2*																			8.3*	8.3*	10.4
19.5	4 pt. outriggers down					11.2*	11.2*	10.1*	10.1*	8.4*	8.4*															7.3*	7.3*	12.7
18.0	4 pt. outriggers down							10.8*	10.8*	9.8*	9.8*	8.3*	8.3*													6.7*	6.7*	14.4
16.5	4 pt. outriggers down							10.7*	10.7*	9.8*	9.8*	9.0*	9.0*	7.8*	7.8*											6.2*	6.2*	15.8
15.0	4 pt. outriggers down							10.6*	10.6*	9.7*	9.7*	8.9*	8.9*	8.3*	8.3*	7.1*	7.1*									6.0*	6.0*	17.0
13.5	4 pt. outriggers down							10.6*	10.6*	9.7*	9.7*	8.9*	8.9*	8.3*	8.3*	7.7*	7.7*									5.8*	5.8*	18.0
12.0	4 pt. outriggers down							10.7*	10.7*	9.7*	9.7*	8.9*	8.9*	8.3*	8.3*	7.7*	7.7*	7.2*	7.2*							5.6*	5.6*	18.8
10.5	4 pt. outriggers down					11.9*	11.9*	10.9*	10.9*	9.9*	9.9*	9.0*	9.0*	8.3*	8.3*	7.7*	7.7*	7.2*	7.2*							5.5*	5.5*	19.4
9.0	4 pt. outriggers down					12.4*	12.4*	11.1*	11.1*	10.0*	10.0*	9.2*	9.2*	8.4*	8.4*	7.8*	7.8*	7.2*	7.2*	6.5	6.6*					5.5*	5.5*	19.9
7.5	4 pt. outriggers down			12.1*	12.1*	13.0*	13.0*	11.5*	11.5*	10.3*	10.3*	9.3*	9.3*	8.5*	8.5*	7.8*	7.8*	7.2*	7.2*	6.4	6.6*					5.5*	5.5*	20.3
6.0	4 pt. outriggers down	12.1*	12.1*	14.8*	14.8*	13.6*	13.6*	11.9*	11.9*	10.6*	10.6*	9.5*	9.5*	8.6*	8.6*	7.9*	7.9*	7.2*	7.2*	6.3	6.6*					5.5*	5.5*	20.6
4.5	4 pt. outriggers down	21.1*	21.1*	17.0*	17.0*	14.2*	14.2*	12.3*	12.3*	10.8*	10.8*	9.7*	9.7*	8.7*	8.7*	7.9*	7.9*	7.2	7.2*	6.3	6.5*					5.6*	5.6*	20.8
3.0	4 pt. outriggers down	22.5*	22.5*	17.8*	17.8*	14.8*	14.8*	12.6*	12.6*	11.1*	11.1*	9.8*	9.8*	8.8*	8.8*	7.9*	7.9*	7.0	7.2*	6.2	6.4*					5.4*	5.4*	20.8
1.5	4 pt. outriggers down	11.6*	11.6*	18.4*	18.4*	15.2*	15.2*	12.9*	12.9*	11.2*	11.2*	9.9*	9.9*	8.8*	8.8*	7.9	7.9*	6.9	7.1*	6.1	6.2*					5.1*	5.1*	20.8
0	4 pt. outriggers down	7.6*	7.6*	18.6*	18.6*	15.3*	15.3*	13.0*	13.0*	11.2*	11.2*	9.9*	9.9*	8.7*	8.7*	7.7	7.8*	6.8	6.8*	5.8*	5.8*					4.8*	4.8*	20.6
-1.5	4 pt. outriggers down	7.0*	7.0*	14.2*	14.2*	15.1*	15.1*	12.8*	12.8*	11.1*	11.1*	9.7*	9.7*	8.5*	8.5*	7.5*	7.5*	6.5*	6.5*	5.3*	5.3*					4.4*	4.4*	20.3
-3.0	4 pt. outriggers down	7.4*	7.4*	12.8*	12.8*	14.5*	14.5*	12.4*	12.4*	10.7*	10.7*	9.3*	9.3*	8.1*	8.1*	7.0*	7.0*	5.9*	5.9*	0.0	0.0					4.6*	4.6*	19.3
-4.5	4 pt. outriggers down	8.1*	8.1*	12.8*	12.8*	13.3*	13.3*	11.5*	11.5*	9.9*	9.9*	8.6*	8.6*	7.4*	7.4*	6.3*	6.3*									5.1*	5.1*	17.9
-6.0	4 pt. outriggers down	3	311		0	11.6*	11.6*	10.1*	10.1*	8.8*	8.8*	7.6*	7.6*	6.4*	6.4*	2.0	2.0									6.0*	6.0*	15.4
3.0	. p. canggord down						0	10.1		0.0	0.0			0.1	0.1											0.0	0.0	
1/3-1	leight 👊 Can be	slewe	d thro	niah 3	en°	d <sub>in</sub>	longi	tudins	ıl nne	ition o	of und	ercarı	riane		-	<b>М</b>	ax. re	ach	* I in	nited I	hv hv	dr ca	pacity					

The lift capacities on the stick end without attachment are stated in metric tons (t) and are valid on a firm, level supporting surface with blocked oscillating axle. These capacities can be slewed through 360° with the undercarriage in the transverse position. Capacities in the longitudinal position of the undercarriage (+/-15°) are specified over the rigid axle with the stabilizers down. Indicated loads based on the ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity. The lift capacity values indicated are attained at the corresponding operating temperature. This operating temperature is ensured by continuous movement of the boom. Weights of fitted attachments (grabs, load hooks, etc.) and load accommodation attachment are to be deducted from the lift capacity values. The lift capacity of the unit is limited by its stability, the lifting capability of the hydraulic elements, or the maximum permissible lifting capacity of the load hook.

## LH 60 M - Equipment AG20

#### Port - Kinematic 2D



1/3		6.0	) m	7.5	5 m	9.0	m	10.	5 m	12.	0 m	13.	5 m	15.0	) m	16.	5 m	18.0	) m	19.	5 m	21.	0 m	22.	5 m		0	
<b>₩</b> m	Undercarriage	5	<u>L</u>	5	<u>L</u>	5	L	5	ď	<b></b> -5	ď	<b></b> -5	ď	5	ď	<b></b> -5	ď	<del>5</del>	<u>.</u>	5	ď	5	ď	5	Ŀ	5	<u>L</u>	m
21.0	4 pt. outriggers down																									7.8*	7.8*	9.0
19.5	4 pt. outriggers down							8.1*	8.1*																	6.8*	6.8*	11.5
18.0	4 pt. outriggers down									8.1*	8.1*															6.3*	6.3*	13.4
16.5	4 pt. outriggers down									8.4*	8.4*	7.9*	7.9*													6.0*	6.0*	15.0
15.0	4 pt. outriggers down									8.3*	8.3*	7.8*	7.8*	7.3*	7.3*											5.7*	5.7*	16.2
13.5	4 pt. outriggers down									8.3*	8.3*	7.7*	7.7*	7.3*	7.3*	6.8*	6.8*									5.6*	5.6*	17.2
12.0	4 pt. outriggers down									8.4*	8.4*	7.8*	7.8*	7.3*	7.3*	6.9*	6.9*	5.6*	5.6*							5.5*	5.5*	18.0
10.5	4 pt. outriggers down							9.3*	9.3*	8.5*	8.5*	7.9*	7.9*	7.4*	7.4*	6.9*	6.9*	6.6*	6.6*							5.5*	5.5*	18.7
9.0	4 pt. outriggers down							9.6*	9.6*	8.7*	8.7*	8.0*	8.0*	7.5*	7.5*	7.0*	7.0*	6.6*	6.6*							5.5*	5.5*	19.3
7.5	4 pt. outriggers down					11.2*	11.2*	10.0*	10.0*	9.0*	9.0*	8.2*	8.2*	7.6*	7.6*	7.1*	7.1*	6.6*	6.6*	5.9*	5.9*					5.5*	5.5*	19.7
6.0	4 pt. outriggers down			13.8*	13.8*	11.9*	11.9*	10.4*	10.4*	9.3*	9.3*	8.5*	8.5*	7.8*	7.8*	7.2*	7.2*	6.7*	6.7*	6.3*	6.3*					5.6*	5.6*	19.9
4.5	4 pt. outriggers down	18.4*	18.4*	14.9*	14.9*	12.6*	12.6*	10.9*	10.9*	9.7*	9.7*	8.7*	8.7*	8.0*	8.0*	7.3*	7.3*	6.8*	6.8*	6.3*	6.3*					5.7*	5.7*	20.1
3.0	4 pt. outriggers down	20.2*	20.2*	16.0*	16.0*	13.3*	13.3*	11.4*	11.4*	10.0*	10.0*	9.0*	9.0*	8.1*	8.1*	7.4*	7.4*	6.8*	6.8*	6.2	6.3*					5.8	5.9*	20.2
1.5	4 pt. outriggers down	17.5*	17.5*	16.9*	16.9*	13.9*	13.9*	11.9*	11.9*	10.4*	10.4*	9.2*	9.2*	8.3*	8.3*	7.5*	7.5*	6.9*	6.9*	6.1	6.3*					5.8	6.0*	20.1
0	4 pt. outriggers down	10.9*	10.9*	17.6*	17.6*	14.4*	14.4*	12.2*	12.2*	10.6*	10.6*	9.4*	9.4*	8.4*	8.4*	7.6*	7.6*	6.8	6.9*	6.0	6.1*					5.8	5.9*	19.9
-1.5	4 pt. outriggers down	9.4*	9.4*	17.2*	17.2*	14.7*	14.7*	12.4*	12.4*	10.7*	10.7*	9.5*	9.5*	8.4*	8.4*	7.5*	7.5*	6.7	6.8*	5.9*	5.9*					5.8*	5.8*	19.7
-3.0	4 pt. outriggers down	9.2*	9.2*	14.9*	14.9*	14.6*	14.6*	12.4*	12.4*	10.7*	10.7*	9.4*	9.4*	8.3*	8.3*	7.4*	7.4*	6.5*	6.5*							5.7*	5.7*	19.2
-4.5	4 pt. outriggers down	9.5*	9.5*	14.2*	14.2*	14.2*	14.2*	12.1*	12.1*	10.5*	10.5*	9.2*	9.2*	8.1*	8.1*	7.1*	7.1*	6.1*	6.1*							5.5*	5.5*	18.7
-6.0	4 pt. outriggers down	10.0*	10.0*	14.2*	14.2*	13.4*	13.4*	11.5*	11.5*	10.0*	10.0*	8.7*	8.7*	7.6*	7.6*	6.5*	6.5*									5.3*	5.3*	17.9
-7.5	4 pt. outriggers down			14.1*	14.1*	12.2*	12.2*	10.5*	10.5*	9.1*	9.1*	7.9*	7.9*	6.7*	6.7*											6.3*	6.3*	15.6

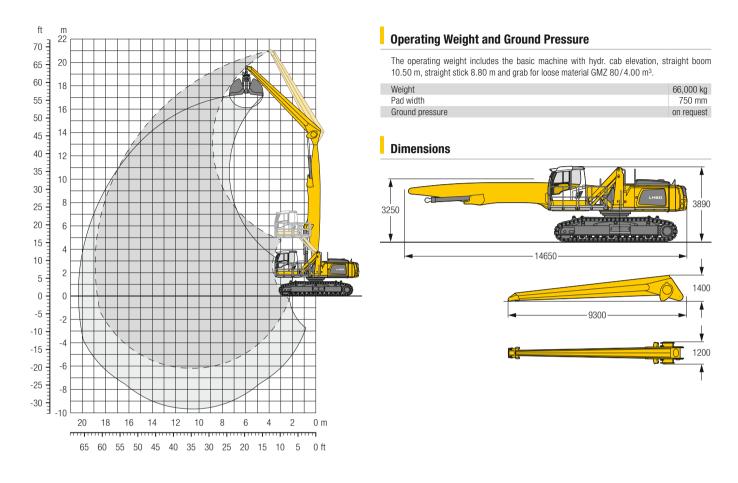
The lift capacities on the stick end without attachment are stated in metric tons (t) and are valid on a firm, level supporting surface with blocked oscillating axle. These capacities can be slewed through 360° with the undercarriage in the transverse position. Capacities in the longitudinal position of the undercarriage (+/-15°) are specified over the rigid axle with the stabilizers down. Indicated loads based on the ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity. The lift capacity values indicated are attained at the corresponding operating temperature. This operating temperature is ensured by continuous movement of the boom. Weights of fitted attachments (grabs, load hooks, etc.) and load accommodation attachment are to be deducted from the lift capacity values. The lift capacity of the unit is limited by its stability, the lifting capability of the hydraulic elements, or the maximum permissible lifting capacity of the load hook.

Max. reach \* Limited by hydr. capacity

 Image: The interpretation of the image in the image is the image in the image.
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## LH 60 C - Equipment GG19

#### Port - Kinematic 2A

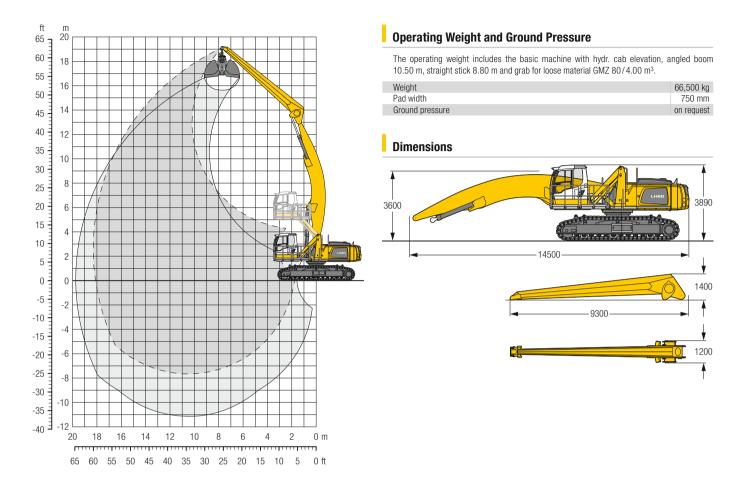


<b>1</b> /3		6.0	) m	7.5	5 m	9.0	m	10.	5 m	12.	0 m	13.	5 m	15.	0 m	16.	5 m	18.	0 m	19.	5 m	21.	0 m	22.	5 m		-00	
m	Undercarriage	5	l <mark>d</mark>	<b>5</b>	d.	<b>5</b>	al al	5	d.	5	ph.	3	Ŀ	3	d.	5	d.	5	J.	5	p <mark>l</mark>	5	J.	5	d.	5	ı <mark>₄</mark>	m
19.5	SW	_	_	11.6*	11.6*		_		-	_				_		_	_		-	_		_				10.3*	10.3*	8.2
18.0	SW			12.9*	12.9*	11.5*	11.5*	9.3*	9.3*																	8.6*	8.6*	10.8
16.5	SW					12.4*	12.4*	11.2*	11.2*	9.3*	9.3*															7.7*	7.7*	12.7
15.0	SW					12.5*	12.5*	11.4*	11.4*	10.5*	10.5*	8.8*	8.8*													7.2*	7.2*	14.2
13.5	SW					12.3*	12.3*	11.2*	11.2*	10.4*	10.4*	9.7*	9.7*	7.9*	7.9*											6.8*	6.8*	15.4
12.0	SW					12.4*	12.4*	11.2*	11.2*	10.3*	10.3*	9.6*	9.6*	8.5	9.0*											6.5*	6.5*	16.3
10.5	SW					12.5*	12.5*	11.4*	11.4*	10.4*	10.4*	9.6*	9.6*	8.5	9.0*	7.2	8.2*									6.4*	6.4*	17.1
9.0	SW					12.9*	12.9*	11.6*	11.6*	10.6*	10.6*	9.7*	9.7*	8.5	9.0*	7.1	8.4*									6.2	6.3*	17.8
7.5	SW			13.8*	13.8*	13.4*	13.4*	12.0*	12.0*	10.8*	10.8*	9.9*	9.9*	8.3	9.1*	7.1	8.4*	6.0	7.1*							5.9	6.2*	18.2
6.0	SW	13.4*	13.4*	16.0*	16.0*	14.0*	14.0*	12.4*	12.4*	11.1*	11.1*	9.7	10.1*	8.2	9.2*	7.0	8.4*	6.0	7.5							5.7	6.3*	18.6
4.5	SW	19.8*	19.8*	17.3*	17.3*	14.7*	14.7*	12.8*	12.8*	11.3	11.4*	9.4	10.2*	8.0	9.3*	6.9	8.4*	5.9	7.5							5.5	6.3*	18.8
3.0	SW	23.1*	23.1*	18.4*	18.4*	15.4*	15.4*	13.3*	13.3*	10.9	11.7*	9.2	10.4*	7.8	9.4*	6.7	8.4*	5.9	7.4							5.4	6.4*	18.9
1.5	SW	24.2*	24.2*	19.2*	19.2*	15.9*	15.9*	12.8	13.6*	10.5	11.9*	8.9	10.5*	7.6	9.3*	6.6	8.3*	5.8	7.2*							5.4	6.3*	18.9
0	SW	11.6*	11.6*	19.6*	19.6*	15.2	16.2*	12.3	13.7*	10.2	11.9*	8.7	10.5*	7.5	9.2*	6.5	8.1*	5.7	6.8*							5.4	5.9*	18.7
-1.5	SW	9.8*	9.8*	19.0	19.4*	14.7	16.1*		13.6*	9.9	11.7*	8.5	10.2*	7.3	8.9*	6.4	7.6*	5.7	6.1*							5.5*	5.5*	18.4
-3.0	SW	9.9*	9.9*	18.4*	18.4*	14.4	15.4*	11.6	13.1*	9.7	11.3*	8.3	9.7*	7.2	8.3*	6.4	6.9*									5.8*	5.8*	17.4
-4.5		10.7*	10.7*	16.7*	16.7*	14.2	14.2*	11.5	12.1*	9.6	10.4*	8.2	8.8*	7.2	7.4*											6.5*	6.5*	15.8
-6.0		-				12.2*	12.2*	10.5*	10.5*	8.9*	8.9*															8.3*	8.3*	12.6
• &	leight 👊 Can b		al Albara		000	ı.			al pos					_	-	<b>n</b> .	/lax. r			mited								

The lift capacities on the stick end without attachment are stated in metric tons (t) and can be slewed through 360° on a firm, level supporting surface. Capacities are valid for 750 mm wide triple grouser pads. Indicated loads based on the ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity. The lift capacity values indicated are attained at the corresponding operating temperature. This operating temperature is ensured by continuous movement of the boom. Weights of fitted attachments (grabs, load hooks, etc.) and load accommodation attachment are to be deducted from the lift capacity values. The lift capacity of the unit is limited by its stability, the lifting capability of the hydraulic elements, or the maximum permissible lifting capacity of the load hook. In accordance with the harmonised European Standard EN 474-5, hydraulic excavators used for lifting operations must be equipped with pipe fracture safety valves, an overload warning device, a load hook and a lift capacity chart.

## LH 60 C - Equipment AG18

#### Port - Kinematic 2D

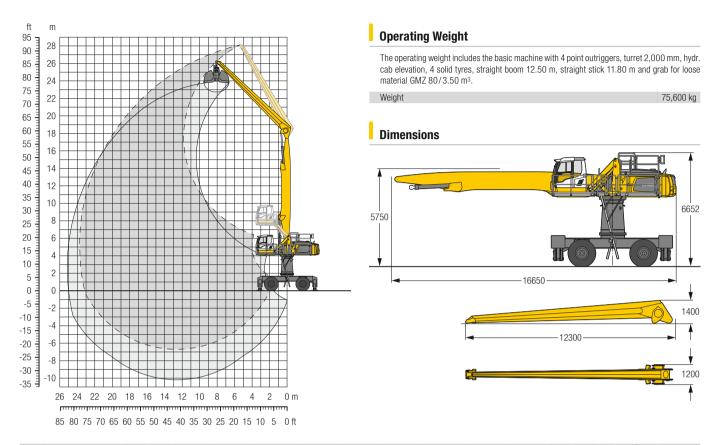


ndercarriage  V V V V V V V		ė	<b>(3)</b>	<u>L</u>	9.2*	9.2*	<b>5</b> )	<u>.</u>	<del>5</del>	Ŀ	<del>5</del>	<u>L</u>	3	j.		J,	_	d.	_	å		J,	ا ۾ ا	j,	5	<u>,</u>	
1 1 1 1 1 1					9.2*	9.2*		0.04									5	<u>.</u>	<del></del>			📋					m
V V V							9.3*	0.04																	8.1*	8.1*	9.7
l I								9.3*																	7.3*	7.3*	11.8
V V							9.8*	9.8*	9.1*	9.1*															6.8*	6.8*	13.4
l							9.6*	9.6*	9.0*	9.0*	8.6*	8.6*													6.5*	6.5*	14.6
							9.6*	9.6*	9.0*	9.0*	8.5*	8.5*	7.8*	7.8*											6.4*	6.4*	15.7
							9.8*	9.8*	9.1*	9.1*	8.5*	8.5*	8.1*	8.1*											6.3*	6.3*	16.5
V							10.0*	10.0*	9.3*	9.3*	8.6*	8.6*	8.1*	8.1*	7.2	7.7*									6.2*	6.2*	17.1
/					11.5*	11.5*	10.4*	10.4*	9.5*	9.5*	8.8*	8.8*	8.2*	8.2*	7.1	7.7*									6.3*	6.3*	17.6
V			14.0*	14.0*	12.2*	12.2*	10.9*	10.9*	9.9*	9.9*	9.1*	9.1*	8.3	8.4*	7.0	7.8*									6.0	6.3*	18.0
/	18.5*	18.5*	15.2*	15.2*	13.0*	13.0*	11.4*	11.4*	10.2*	10.2*	9.3*	9.3*	8.1	8.6*	6.9	7.9*	5.9	7.1*							5.8	6.5*	18.2
l .	20.6*	20.6*	16.5*	16.5*	13.8*	13.8*	12.0*	12.0*	10.6*	10.6*	9.3	9.6*	7.9	8.7*	6.7	8.0*	5.8	7.4							5.7	6.7*	18.3
/	22.4*	22.4*	17.6*	17.6*	14.6*	14.6*	12.5*	12.5*	10.6	11.0*	8.9	9.8*	7.6	8.9*	6.6	8.1*	5.7	7.3							5.6	6.9*	18.3
I	15.9*	15.9*	18.5*	18.5*	15.2*	15.2*	12.3	12.9*	10.2	11.3*	8.7	10.0*	7.4	9.0*	6.4	8.1*	5.7	7.2							5.6	7.1*	18.1
/	12.6*	12.6*	18.9*	18.9*	14.7	15.5*	11.9	13.2*	9.9	11.4*	8.4	10.1*	7.3	9.0*	6.3	8.0*									5.7	7.0*	17.8
V	11.9*	11.9*	18.4	18.8*	14.2	15.5*	11.6	13.2*	9.6	11.4*	8.2	10.0*	7.1	8.8*	6.3	7.7*									5.8	6.9*	17.4
/	12.1*	12.1*	18.1	18.1*	14.0	15.1*	11.3	12.9*	9.5	11.1*	8.1	9.6*	7.0	8.4*	6.2	7.0*									6.0	6.6*	16.9
l .	12.7*	12.7*	16.8*	16.8*	13.8	14.2*	11.2	12.1*	9.4	10.4*	8.0	8.9*	7.0	7.5*											6.6	6.8*	15.7
V					12.6*	12.6*	10.8*	10.8*	9.2*	9.2*															8.8*	8.8*	12.4
V V V V V		20.6* 22.4* 15.9* 12.6* 11.9* 12.1*	20.6* 20.6* 22.4* 22.4* 15.9* 15.9* 12.6* 12.6* 11.9* 11.9* 11.9* 12.1* 12.1* 12.7*	18.5* 18.5* 15.2* 20.6* 16.5* 22.4* 22.4* 17.6* 15.9* 15.9* 18.5* 12.6* 12.6* 18.9* 11.9* 11.9* 18.4* 12.1* 12.1* 12.1* 18.1* 12.7* 16.8*	18.5* 18.5* 15.2* 15.2* 20.6* 20.6* 20.6* 16.5* 16.5* 16.5* 16.5* 16.5* 16.5* 16.5* 16.5* 16.5* 16.5* 16.5* 16.5* 16.5* 16.5* 18.9* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5* 18.5*	18.5°   18.5°   15.2°   15.2°   13.0°     20.6°   20.6°   16.5°   16.5°   13.6°     22.4°   22.4°   17.6°   18.5°   15.2°     15.9°   15.9°   18.5°   18.5°   15.2°     12.6°   12.6°   18.9°   18.9°   14.7°     11.9°   11.9°   18.4°   18.8°   14.2°     12.1°   12.1°   18.1   18.1°   14.0°     12.7°   12.7°   16.8°   16.8°   13.8°     12.6°   12.7°   16.8°   16.8°   13.8°     12.6°   12.7°   16.8°   16.8°   13.8°     12.6°   12.6°   16.8°   16.8°     12.6°   12.6°   16.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°     13.8°   13.8°   13.8°	14.0°   14.0°   12.2°   12.2°   13.0°   13.0°   13.0°   20.6°   20.6°   16.5°   16.5°   13.6°   13.0°   13.0°   20.6°   20.6°   16.5°   16.5°   13.6°   14.6°   15.9°   15.9°   18.5°   18.5°   18.5°   15.2°   15.2°   15.2°   15.2°   15.2°   15.2°   15.2°   15.5°   11.9°   11.9°   18.4°   18.8°   14.2°   15.5°   12.1°   12.1°   18.1°   18.1°   14.0°   15.5°   12.1°   12.7°   16.8°   16.8°   13.8°   14.2°   12.6°   12.6°   12.6°	18.5°   18.5°   18.0°   14.0°   12.2°   12.2°   10.9°     18.5°   18.5°   15.2°   15.2°   13.0°   13.0°   11.4°     20.6°   20.6°   16.5°   16.5°   13.8°   13.8°   12.0°     22.4°   22.4°   17.6°   17.6°   14.6°   14.6°   12.5°     15.9°   15.9°   18.5°   18.5°   15.2°   15.2°   15.2°     12.6°   12.6°   18.9°   18.9°   14.7°   15.5°   11.9°     11.9°   11.9°   18.4°   18.8°   14.2°   15.5°   11.6°     12.1°   12.1°   18.1°   18.1°   14.0°   15.1°   11.3°     12.7°   12.7°   16.8°   16.8°   13.8°   14.2°   11.2°     12.6°   10.8°   10.8°     14.0°   12.6°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°   10.8°     15.0°   15.0°	14.0°   14.0°   12.2°   12.2°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.8°   10.9°   10.8°   10.8°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9°   10.9	18.5	18.5°   18.0°   14.0°   12.2°   12.2°   10.9°   10.9°   9.9°   9.9°     18.5°   18.5°   15.2°   15.2°   13.0°   13.0°   11.4°   11.4°   10.2°   10.2°     20.6°   20.6°   16.5°   16.5°   13.8°   13.8°   12.0°   12.0°   10.6°   10.6°     22.4°   22.4°   17.6°   17.6°   14.6°   14.6°   12.5°   12.5°   10.6   11.0°     15.9°   15.9°   18.5°   18.5°   15.2°   15.2°   12.3°   10.2°   11.3°     12.6°   12.6°   18.9°   18.9°   14.7   15.5°   11.9   13.2°   9.9   11.4°     11.9°   11.9°   18.4   18.8°   14.2   15.5°   11.6   13.2°   9.6   11.4°     12.1°   12.1°   18.1°   18.1°   14.0°   15.1°   11.3°   29.9°   9.5°   11.4°     12.7°   12.7°   16.8°   16.8°   13.8   14.2°   11.2   12.1°   9.4   10.4°     12.6°   12.6°   10.8°   10.8°   9.2°   9.2°	18.5   18.5   16.2   12.2   12.2   10.9   10.9   10.9   9.9   9.1     18.5   18.5   15.2   15.2   13.0   13.0   11.4   11.4   10.2   10.2   9.3     20.6   20.6   16.5   16.5   13.8   13.8   12.0   12.0   10.6   10.6   9.3     22.4   22.4   17.6   17.6   14.6   14.6   12.5   12.5   10.6   11.0   8.7     15.9   15.9   18.5   18.5   15.2   15.2   15.2   12.3   12.9   10.2   11.3   8.7     12.6   12.6   18.9   18.9   14.7   15.5   11.9   13.2   9.9   11.4   8.4     11.9   11.9   18.4   18.8   14.2   15.5   11.6   13.2   9.6   11.4   8.2     12.1   12.1   18.1   18.1   14.0   15.1   11.3   12.9   9.5   11.1   8.1     12.7   12.7   16.8   16.8   16.8   14.2   12.2   12.1   9.4   10.4   8.0	14.0°   14.0°   14.0°   12.2°   12.2°   10.9°   10.9°   9.9°   9.9°   9.1°   9.1°   9.1°   18.5°   18.5°   15.2°   13.0°   13.0°   11.4°   11.4°   10.2°   10.2°   9.3°   9.3°   9.3°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.9°   10.9°   10.9°   10.6°   10.6°   10.6°   10.6°   10.6°   10.9°   10.9°   10.9°   10.9°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.9°   10.9°   10.9°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6°   10.6	14.0°   14.0°   14.0°   12.2°   12.2°   10.9°   10.9°   9.9°   9.9°   9.1°   9.1°   9.1°   8.3°     18.5°   18.5°   15.2°   15.2°   13.0°   13.0°   11.4°   11.4°   10.2°   10.2°   9.3°   9.3°   8.1°     20.6°   20.6°   16.5°   16.5°   13.8°   13.8°   12.0°   12.0°   10.6°   10.6°   9.3°   9.6°   7.9°     22.4°   22.4°   17.6°   17.6°   14.6°   14.6°   12.5°   12.5°   10.6°   11.0°   8.9°   9.8°   7.6°     15.9°   15.9°   18.5°   18.5°   15.2°   15.2°   12.3°   12.9°   10.2°   11.3°   8.7°   10.0°   7.4°     12.6°   12.6°   18.9°   18.9°   14.7°   15.5°   11.9   13.2°   9.9   11.4°   8.4°   10.1°   7.3°     11.9°   11.9°   18.4°   18.8°   14.2°   15.5°   11.3°   13.2°   9.5°   11.1°   8.1°   8.1°   9.6°   7.0°     12.7°   12.7°   16.8°   16.8°   13.8°   14.2°   11.2°   12.1°   9.4°   10.4°   8.0°   8.9°   7.0°	14.0°   14.0°   14.0°   12.2°   12.2°   10.9°   10.9°   9.9°   9.1°   9.1°   9.1°   8.3   8.4°     18.5°   18.5°   15.2°   15.2°   13.0°   13.0°   11.4°   11.4°   10.2°   10.2°   9.3°   9.3°   9.3°   8.1°   8.6°     20.6°   20.6°   6.5°   16.5°   13.8°   13.8°   12.0°   12.0°   10.6°   10.6°   9.3   9.6°   7.9   8.7°     22.4°   22.4°   17.6°   17.6°   14.6°   14.6°   12.5°   12.5°   10.6°   10.6°   9.3   9.8°   7.6   8.9°     15.9°   15.9°   18.5°   18.5°   15.2°   15.2°   12.3°   12.9°   10.2   11.3°   8.7   10.0°   7.4   9.0°     12.6°   12.6°   18.9°   18.5°   14.7   15.5°   11.9   13.2°   9.9   11.4°   8.4   10.1°   7.3   9.0°     11.9°   11.9°   18.4   18.8°   14.2°   15.5°   11.6   13.2°   9.5   11.1°   8.2°   10.6°   7.0   8.4°     12.1°   12.1°   18.8°   18.8°   13.8   14.2°   11.2°   12.1°   9.4   10.4°   8.0   8.9°   7.0   7.5°     12.7°   12.7°   16.8°   16.8°   13.8   14.2°   11.2°   11.1°   9.4   10.4°   8.0   8.9°   7.0   7.5°	14.0°   14.0°   14.0°   12.2°   12.2°   10.9°   10.9°   9.9°   9.9°   9.1°   9.1°   8.3°   8.4°   7.0°     18.5°   18.5°   15.2°   15.2°   13.0°   13.0°   11.4°   11.4°   10.2°   10.2°   9.3°   9.3°   8.1°   8.6°   6.9°     20.6°   20.6°   16.5°   16.5°   13.8°   13.8°   12.0°   12.0°   10.6°   10.6°   9.3°   9.3°   8.1°   8.6°   6.7°     22.4°   22.4°   17.6°   17.6°   14.6°   14.6°   12.5°   12.5°   10.6°   11.0°   8.9°   9.8°   7.6°   8.9°   6.6°     15.9°   15.9°   18.5°   18.5°   15.2°   15.2°   12.3°   12.9°   10.2°   11.3°   8.7°   10.0°   7.4°   9.0°   6.3°     12.6°   12.6°   18.9°   18.9°   14.7°   15.5°   11.9°   13.2°   9.9°   11.4°   8.4°   10.1°   7.3°   9.0°   6.3°     11.9°   11.9°   18.4°   18.8°   14.2°   15.5°   11.6°   13.2°   9.5°   11.1°   8.1°   8.1°   9.6°   7.0°   8.4°   6.2°     12.7°   12.7°   16.8°   16.8°   13.8°   14.2°   11.2°   12.1°   9.4°   10.4°   8.0°   8.9°   7.0°   7.5°	18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5	14.0°   14.0°   14.0°   12.2°   12.2°   10.9°   10.9°   9.9°   9.9°   9.1°   9.1°   8.3°   8.4°   7.0°   7.8°     18.5°   18.5°   15.2°   15.2°   13.0°   13.0°   11.4°   11.4°   10.2°   10.2°   9.3°   9.3°   9.3°   8.1°   8.6°   6.9°   7.9°   5.9°     20.6°   20.6°   16.5°   16.5°   13.8°   13.8°   12.0°   12.0°   10.6°   10.6°   9.3°   9.6°   7.9°   8.7°   6.7°   8.0°   5.8°     22.4°   22.4°   17.6°   17.6°   14.6°   14.6°   12.5°   12.5°   10.6°   11.0°   8.9°   9.8°   7.6°   8.9°   6.6°   8.1°   5.7°     15.9°   15.9°   18.5°   18.5°   15.2°   15.2°   12.3°   12.9°   10.2°   11.3°   8.7°   10.0°   7.4°   9.0°   6.4°   8.1°   5.7°     12.6°   12.6°   18.9°   18.9°   14.7°   15.5°   11.9°   13.2°   9.9°   11.4°   8.4°   10.1°   7.3°   9.0°   6.3°   8.0°     11.9°   11.9°   18.4°   18.8°   14.2°   15.5°   11.8°   13.2°   9.5°   11.1°   8.1°   9.6°   7.0°   8.4°   6.3°   7.7°     12.1°   12.1°   18.1°   18.1°   14.0°   15.1°   11.3°   12.9°   9.5°   11.1°   8.1°   9.6°   7.0°   8.4°   6.2°   7.0°     12.7°   12.7°   16.8°   16.8°   13.8°   14.2°   11.2°   12.1°   9.4°   10.4°   8.0°   8.9°   7.0°   7.5°	18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5	18.5°   18.5°   15.2°   12.2°   12.2°   10.9°   10.9°   9.9°   9.1°   9.1°   8.3   8.4°   7.0   7.8°	18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5	14.0°   14.0°   14.0°   12.2°   12.2°   10.9°   10.9°   9.9°   9.9°   9.1°   9.1°   8.3   8.4°   7.0   7.8°	18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5   18.5	14.0°   14.0°   14.0°   12.2°   12.2°   10.9°   10.9°   9.9°   9.1°   9.1°   8.3   8.4°   7.0   7.8°     18.5°   18.5°   15.2°   15.2°   13.0°   13.0°   11.4°   11.4°   10.2°   10.2°   9.3°   9.3°   9.3°   8.1   8.6°   6.9   7.9°   5.9   7.1°     20.6°   20.6°   16.5°   16.5°   13.8°   13.8°   12.0°   12.0°   10.6°   10.6°   9.3   9.6°   7.9   8.7°   6.7   8.0°   5.8   7.4     22.4°   22.4°   17.6°   17.6°   14.6°   14.6°   12.5°   12.5°   10.6°   10.6°   9.3   9.8°   7.6   8.9°   6.6   8.1°   5.7   7.3     15.9°   15.9°   18.5°   18.5°   15.2°   15.2°   12.3°   12.9°   10.2   11.3°   8.7   10.0°   7.4   9.0°   6.4   8.1°   5.7   7.2     12.6°   12.6°   18.9°   18.8°   14.2°   15.5°   11.9   13.2°   9.9   11.4°   8.4   10.1°   7.3   9.0°   6.3   8.0°     11.9°   11.9°   18.4   18.8°   14.2   15.5°   11.6   13.2°   9.9   11.4°   8.2   10.0°   7.1   8.8°   6.3   7.7°     12.1°   12.1°   18.1   18.1°   14.0   15.1°   11.3   12.9°   9.5   11.1°   8.1   9.6°   7.0   8.4°   6.2   7.0°     12.7°   12.7°   16.8°   16.8°   13.8   14.2°   11.2   12.1°   9.4   10.4°   8.0   8.9°   7.0   7.5°	14.0°   14.0°   14.0°   12.2°   12.2°   10.9°   10.9°   9.9°   9.9°   9.1°   9.1°   8.3   8.4°   7.0   7.8°   7.0°   7.8°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.1°   7.	14.0°   14.0°   14.0°   12.2°   12.2°   10.9°   10.9°   9.9°   9.1°   9.1°   8.3   8.4°   7.0   7.8°   5.9   7.1°   5.9   7.1°   5.8   5.8   5.2°   15.2°   15.2°   13.0°   13.0°   11.4°   11.4°   10.2°   10.2°   9.3°   9.3°   9.3°   8.1   8.6°   6.9   7.9°   5.9   7.1°   5.9   7.1°   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5.8   5	14.0°   14.0°   14.0°   12.2°   12.2°   10.9°   10.9°   9.9°   9.9°   9.1°   9.1°   8.3   8.4°   7.0   7.8°   7.0°   7.8°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.7°   8.

The lift capacities on the stick end without attachment are stated in metric tons (t) and can be slewed through 360° on a firm, level supporting surface. Capacities are valid for 750 mm wide triple grouser pads. Indicated loads based on the ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity. The lift capacity values indicated are attained at the corresponding operating temperature. This operating temperature is ensured by continuous movement of the boom. Weights of fitted attachments (grabs, load hooks, etc.) and load accommodation attachment are to be deducted from the lift capacity values. The lift capacity of the unit is limited by its stability, the lifting capability of the hydraulic elements, or the maximum permissible lifting capacity of the load hook. In accordance with the harmonised European Standard EN 474-5, hydraulic excavators used for lifting operations must be equipped with pipe fracture safety valves, an overload warning device, a load hook and a lift capacity chart.

## LH 60 M HR - Equipment GG24

#### Port - Kinematic 2A

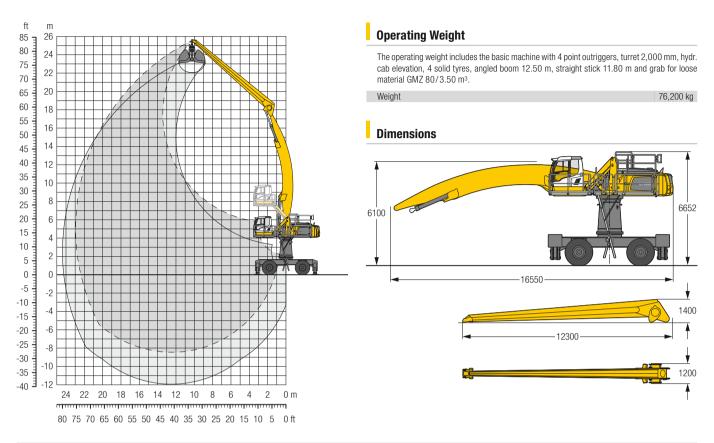


1/2		6.0	) m	7.5	m	9.0	m	10.	5 m	12.	0 m	13.5	5 m	15.0	) m	16.5	5 m	18.0	) m	19.	5 m	21.	0 m	22.5	5 m			
m	Undercarriage	5	<u>L</u>	5	L		<u>L</u>		į.		<u>L</u>	5	<u>L</u>		<u>L</u>		<u>L</u>		j		<u>L</u>		ď		<u>L</u>		L	m
27.0	4 pt. outriggers down			9.6*	9.6*																					8.1*	8.1*	9
25.5	4 pt. outriggers down					9.3*	9.3*	8.3*	8.3*	6.7*	6.7*															6.7*	6.7*	12
24.0	4 pt. outriggers down							9.0*	9.0*	8.1*	8.1*	6.9*	6.9*													5.9*	5.9*	14
22.5	4 pt. outriggers down									8.7*	8.7*	7.9*	7.9*	6.8*	6.8*											5.4*	5.4*	16
21.0	4 pt. outriggers down									9.0*	9.0*	8.3*	8.3*	7.6*	7.6*	6.5*	6.5*									5.1*	5.1*	17
9.5	4 pt. outriggers down									8.9*	8.9*	8.2*	8.2*	7.6*	7.6*	7.0*	7.0*	6.0*	6.0*							4.8*	4.8*	18
18.0	4 pt. outriggers down									8.8*	8.8*	8.1*	8.1*	7.5*	7.5*	7.0*	7.0*	6.5*	6.5*	5.3*	5.3*					4.6*	4.6*	19
16.5	4 pt. outriggers down									8.9*	8.9*	8.1*	8.1*	7.5*	7.5*	7.0*	7.0*	6.5*	6.5*	6.1*	6.1*					4.5*	4.5*	2
15.0	4 pt. outriggers down									8.9*	8.9*	8.2*	8.2*	7.5*	7.5*	7.0*	7.0*	6.5*	6.5*	6.1*	6.1*	5.4*	5.4*			4.4*	4.4*	2
3.5	4 pt. outriggers down									9.0*	9.0*	8.2*	8.2*	7.6*	7.6*	7.0*	7.0*	6.5*	6.5*	6.1*	6.1*	5.7*	5.7*			4.4*	4.4*	2
2.0	4 pt. outriggers down							9.7*	9.7*	9.2*	9.2*	8.4*	8.4*	7.7*	7.7*	7.1*	7.1*	6.5*	6.5*	6.1*	6.1*	5.7*	5.7*	4.7*	4.7*	4.3*	4.3*	2
0.5	4 pt. outriggers down							10.2*	10.2*	9.4*	9.4*	8.5*	8.5*	7.8*	7.8*	7.1*	7.1*	6.6*	6.6*	6.1*	6.1*	5.7*	5.7*	5.2*	5.2*	4.3*	4.3*	2
9.0	4 pt. outriggers down					10.1*	10.1*	10.8*	10.8*	9.6*	9.6*	8.7*	8.7*	7.9*	7.9*	7.2*	7.2*	6.6*	6.6*	6.1*	6.1*	5.6*	5.6*	5.1*	5.1*	4.3*	4.3*	2
7.5	4 pt. outriggers down			10.3*	10.3*	12.2*	12.2*	11.2*	11.2*	9.9*	9.9*	8.9*	8.9*	8.0*	8.0*	7.3*	7.3*	6.7*	6.7*	6.1*	6.1*	5.6*	5.6*	5.1*	5.1*	4.3*	4.3*	2
6.0	4 pt. outriggers down	13.7*	13.7*	15.9*	15.9*	13.5*	13.5*	11.6*	11.6*	10.1*	10.1*	9.0*	9.0*	8.1*	8.1*	7.4*	7.4*	6.7*	6.7*	6.1*	6.1*	5.6*	5.6*	5.0*	5.0*	4.4*	4.4*	2
4.5	4 pt. outriggers down	21.3*	21.3*	16.9*	16.9*	14.0*	14.0*	11.9*	11.9*	10.4*	10.4*	9.2*	9.2*	8.2*	8.2*	7.4*	7.4*	6.7*	6.7*	6.1*	6.1*	5.5*	5.5*	4.9*	4.9*	4.2*	4.2*	2
3.0	4 pt. outriggers down	11.0*	11.0*	17.4*	17.4*	14.3*	14.3*	12.1*	12.1*	10.5*	10.5*	9.3*	9.3*	8.3*	8.3*	7.4*	7.4*	6.7*	6.7*	6.0*	6.0*	5.4*	5.4*	4.7*	4.7*	4.0*	4.0*	2
1.5	4 pt. outriggers down	6.6*	6.6*	16.5*	16.5*	14.5*	14.5*	12.3*	12.3*	10.6*	10.6*	9.3*	9.3*	8.2*	8.2*	7.4*	7.4*	6.6*	6.6*	5.9*	5.9*	5.2*	5.2*	4.4*	4.4*	3.7*	3.7*	2
0	4 pt. outriggers down	5.8*	5.8*	11.4*	11.4*	14.4*	14.4*	12.2*	12.2*	10.5*	10.5*	9.2*	9.2*	8.1*	8.1*	7.2*	7.2*	6.4*	6.4*	5.7*	5.7*	4.9*	4.9*	4.0*	4.0*	3.4*	3.4*	2
1.5	4 pt. outriggers down	5.9*	5.9*	10.0*	10.0*	13.9*	13.9*	11.9*	11.9*	10.2*	10.2*	9.0*	9.0*	7.9*	7.9*	7.0*	7.0*	6.1*	6.1*	5.3*	5.3*	4.5*	4.5*			3.4*	3.4*	2
3.0	4 pt. outriggers down	6.4*	6.4*	9.8*	9.8*	13.1*	13.1*	11.2*	11.2*	9.8*	9.8*	8.5*	8.5*	7.5*	7.5*	6.5*	6.5*	5.7*	5.7*	4.8*	4.8*	3.8*	3.8*			3.7*	3.7*	2
4.5	4 pt. outriggers down	7.0*	7.0*	10.0*	10.0*	11.8*	11.8*	10.3*	10.3*	9.0*	9.0*	7.8*	7.8*	6.8*	6.8*	5.9*	5.9*	5.0*	5.0*							4.1*	4.1*	1
6.0	4 pt. outriggers down	1				10.1*	10.1*	8.9*	8.9*	7.8*	7.8*	6.8*	6.8*	5.9*	5.9*	5.0*	5.0*									5.0*	5.0*	1
<u>a</u>	leight 🔫 Can be	slewe	d thro	ough 3	60°	L In		tudina		ition c	of und	ercarı	iage			M.	ax. re	ach	* Lin	nited I	oy hyd	ir. car	acity					

The lift capacities on the stick end without attachment are stated in metric tons (t) and are valid on a firm, level supporting surface with blocked oscillating axle. These capacities can be slewed through 360° with the undercarriage in the transverse position. Capacities in the longitudinal position of the undercarriage (+/-15°) are specified over the rigid axle with the stabilizers down. Indicated loads based on the ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity. The lift capacity values indicated are attained at the corresponding operating temperature. This operating temperature is ensured by continuous movement of the boom. Weights of fitted attachments (grabs, load hooks, etc.) and load accommodation attachment are to be deducted from the lift capacity values. The lift capacity of the unit is limited by its stability, the lifting capability of the hydraulic elements, or the maximum permissible lifting capacity of the load hook.

## LH 60 M HR - Equipment AG23

#### Port - Kinematic 2D

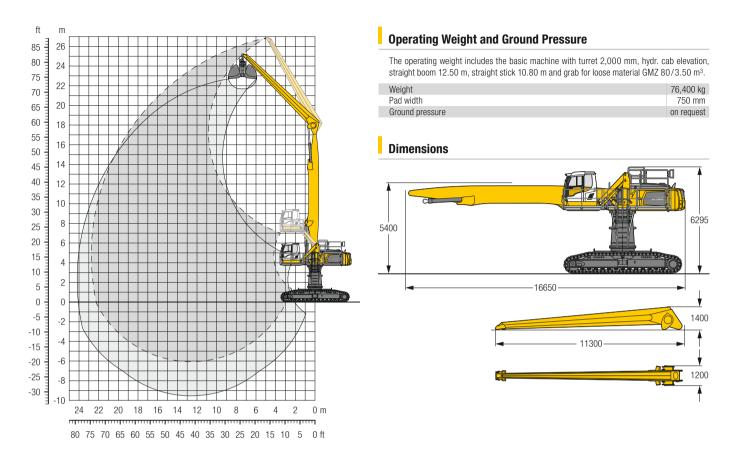


12		6.0	) m	7.5	m	9.0	m	10.	5 m	12.0	) m	13.5	5 m	15.0	) m	16.5	5 m	18.0	) m	19.	5 m	21.	0 m	22.5	5 m			
m	Undercarriage	<b>⊶</b> 50	<u>L</u>	<b>⊶</b> ∰	<u>L</u>	<b>⊶</b>	<u>L</u>	5	<u>L</u>	5	<u>L</u>	<b></b> 5	g.	<u>⊶4</u>	d L	<u>⊶4</u>	<u>L</u>	<u>⊶</u>	<u>L</u>	<u>5</u>	Ŀ	<b></b> ∰	<u>L</u>	<u></u> 5	<u>L</u>	<u>5</u>	<u>.</u>	1
25.5	4 pt. outriggers down																									6.3*	6.3*	1
4.0	4 pt. outriggers down									6.4*	6.4*															5.5*	5.5*	1
2.5	4 pt. outriggers down											6.4*	6.4*													5.1*	5.1*	
1.0	4 pt. outriggers down											7.0*	7.0*	6.3*	6.3*	4.9*	4.9*									4.8*	4.8*	Т
9.5	4 pt. outriggers down											6.9*	6.9*	6.5*	6.5*	6.0*	6.0*									4.6*	4.6*	
3.0	4 pt. outriggers down											6.9*	6.9*	6.4*	6.4*	6.0*	6.0*	5.6*	5.6*							4.5*	4.5*	
3.5	4 pt. outriggers down											6.9*	6.9*	6.4*	6.4*	6.0*	6.0*	5.7*	5.7*	4.9*	4.9*					4.4*	4.4*	
.0	4 pt. outriggers down											6.9*	6.9*	6.4*	6.4*	6.0*	6.0*	5.7*	5.7*	5.4*	5.4*					4.3*	4.3*	
.5	4 pt. outriggers down											7.0*	7.0*	6.5*	6.5*	6.1*	6.1*	5.7*	5.7*	5.4*	5.4*	4.8*	4.8*			4.3*	4.3*	
.0	4 pt. outriggers down											7.1*	7.1*	6.6*	6.6*	6.1*	6.1*	5.7*	5.7*	5.4*	5.4*	5.1*	5.1*			4.3*	4.3*	
5	4 pt. outriggers down									8.0*	8.0*	7.3*	7.3*	6.7*	6.7*	6.2*	6.2*	5.8*	5.8*	5.5*	5.5*	5.1*	5.1*			4.3*	4.3*	
0	4 pt. outriggers down							9.2*	9.2*	8.3*	8.3*	7.5*	7.5*	6.9*	6.9*	6.3*	6.3*	5.9*	5.9*	5.5*	5.5*	5.2*	5.2*	4.6*	4.6*	4.4*	4.4*	
5	4 pt. outriggers down					11.1*	11.1*	9.7*	9.7*	8.6*	8.6*	7.7*	7.7*	7.0*	7.0*	6.5*	6.5*	6.0*	6.0*	5.6*	5.6*	5.2*	5.2*	4.8*	4.8*	4.5*	4.5*	
0	4 pt. outriggers down	17.2*	17.2*	13.9*	13.9*	11.7*	11.7*	10.1*	10.1*	8.9*	8.9*	8.0*	8.0*	7.2*	7.2*	6.6*	6.6*	6.1*	6.1*	5.6*	5.6*	5.2*	5.2*	4.8*	4.8*	4.6*	4.6*	
5	4 pt. outriggers down	18.8*	18.8*	14.8*	14.8*	12.3*	12.3*	10.5*	10.5*	9.2*	9.2*	8.2*	8.2*	7.4*	7.4*	6.7*	6.7*	6.2*	6.2*	5.7*	5.7*	5.2*	5.2*	4.8*	4.8*	4.7*	4.7*	
0	4 pt. outriggers down	17.4*	17.4*	15.6*	15.6*	12.8*	12.8*	10.9*	10.9*	9.5*	9.5*	8.4*	8.4*	7.5*	7.5*	6.8*	6.8*	6.2*	6.2*	5.7*	5.7*	5.2*	5.2*	4.8*	4.8*	4.6*	4.6*	
.5	4 pt. outriggers down	9.8*	9.8*	16.2*	16.2*	13.3*	13.3*	11.2*	11.2*	9.7*	9.7*	8.6*	8.6*	7.6*	7.6*	6.9*	6.9*	6.3*	6.3*	5.7*	5.7*	5.2*	5.2*	4.6*	4.6*	4.6*	4.6*	
	4 pt. outriggers down	8.1*	8.1*	14.3*	14.3*	13.5*	13.5*	11.4*	11.4*	9.9*	9.9*	8.7*	8.7*	7.7*	7.7*	6.9*	6.9*	6.3*	6.3*	5.7*	5.7*	5.1*	5.1*			4.5*	4.5*	
5	4 pt. outriggers down	7.7*	7.7*	12.0*	12.0*	13.5*	13.5*	11.5*	11.5*	9.9*	9.9*	8.7*	8.7*	7.7*	7.7*	6.9*	6.9*	6.2*	6.2*	5.5*	5.5*	4.9*	4.9*			4.4*	4.4*	
0	4 pt. outriggers down	7.7*	7.7*	11.2*	11.2*	13.3*	13.3*	11.3*	11.3*	9.8*	9.8*	8.6*	8.6*	7.6*	7.6*	6.7*	6.7*	6.0*	6.0*	5.3*	5.3*	4.6*	4.6*			4.3*	4.3*	
5	4 pt. outriggers down	8.0*	8.0*	11.1*	11.1*	12.8*	12.8*	11.0*	11.0*	9.5*	9.5*	8.3*	8.3*	7.3*	7.3*	6.5*	6.5*	5.7*	5.7*	4.9*	4.9*	0	0			4.1*	4.1*	
0	4 pt. outriggers down	8.4*	8.4*	11.2*	11.2*	12.0*	12.0*	10.3*	10.3*	9.0*	9.0*	7.8*	7.8*	6.9*	6.9*	6.0*	6.0*	5.2*	5.2*	4.3*	4.3*					4.2*	4.2*	
.5	4 pt. outriggers down	5.4	0.4	111.2	11.2	10.7*	10.7*	9.3*	9.3*	8.1*	8.1*	7.1*	7.1*	6.2*	6.2*	5.3*	5.3*	0.2	0.2	1.0	1.0					5.0*	5.0*	
	T pt. outriggers down					10.7	10.7	0.0	0.0	0.1	0.1	7.1	131	0.2	0.2	0.0	0.0									0.0	0.0	

The lift capacities on the stick end without attachment are stated in metric tons (t) and are valid on a firm, level supporting surface with blocked oscillating axle. These capacities can be slewed through 360° with the undercarriage in the transverse position. Capacities in the longitudinal position of the undercarriage (+/-15°) are specified over the rigid axle with the stabilizers down. Indicated loads based on the ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity. The lift capacity values indicated are attained at the corresponding operating temperature. This operating temperature is ensured by continuous movement of the boom. Weights of fitted attachments (grabs, load hooks, etc.) and load accommodation attachment are to be deducted from the lift capacity values. The lift capacity of the unit is limited by its stability, the lifting capability of the hydraulic elements, or the maximum permissible lifting capacity of the load hook.

## LH 60 C HR - Equipment GG23

#### Port - Kinematic 2A

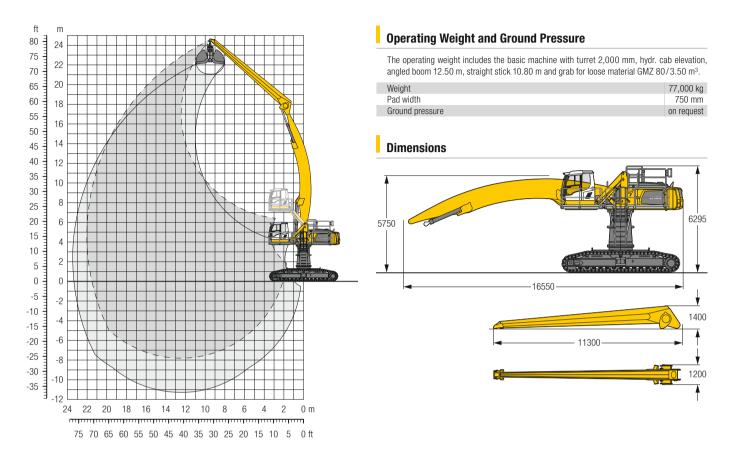


<b>1</b> /3		6.0	0 m	7.5	5 m	9.0	) m	10.	5 m	12.	0 m	13.	5 m	15.0	) m	16.	5 m	18.0	) m	19.	5 m	21.	0 m	22.	5 m		-	
<b>↓</b> // m	Undercarriage	<b>⊶</b> 55	<u>L</u>	<b></b> -∰	<u>L</u>	<u>⊶</u>	<u>L</u>	<u></u> 5	<u>L</u>	<u>5</u>	<u>L</u>		<u>L</u>		<u>L</u>	<b></b> -5	<u>Ľ</u>	5	<u>.</u>	5	<u>L</u>	5	<u>,</u>	5	<u>L</u>	<b></b> -∰	į.	m
25.5	SW			10.4*	10.4*	8.7*	8.7*																			8.5*	8.5*	9.1
24.0	SW					10.1*	10.1*	8.9*	8.9*																	7.1*	7.1*	12.0
22.5	SW							9.7*	9.7*	8.8*	8.8*	7.3*	7.3*													6.4*	6.4*	14.1
21.0	SW							10.1*	10.1*	9.4*	9.4*	8.6*	8.6*	7.2*	7.2*											5.9*	5.9*	15.9
19.5	SW									9.3*	9.3*	8.5*	8.5*	7.9*	7.9*	6.8*	6.8*									5.5*	5.5*	17.3
18.0	SW									9.2*	9.2*	8.4*	8.4*	7.8*	7.8*	7.2*	7.2*	6.2*	6.2*							5.3*	5.3*	18.5
16.5	SW									9.2*	9.2*	8.4*	8.4*	7.8*	7.8*	7.2*	7.2*	6.7*	6.7*							5.1*	5.1*	19.5
15.0	SW									9.2*	9.2*	8.4*	8.4*	7.8*	7.8*	7.2*	7.2*	6.7*	6.7*	6.2*	6.2*					5.0*	5.0*	20.3
13.5	SW							10.3*	10.3*	9.3*	9.3*	8.5*	8.5*	7.8*	7.8*	7.2*	7.2*	6.7*	6.7*	6.2*	6.2*					4.9*	4.9*	21.0
12.0	SW							10.5*	10.5*	9.5*	9.5*	8.6*	8.6*	7.9*	7.9*	7.3*	7.3*	6.7*	6.7*	6.2*	6.2*	5.7*	5.7*			4.9*	4.9*	21.6
10.5	SW					10.9*	10.9*	10.8*	10.8*	9.7*	9.7*	8.7*	8.7*	8.0*	8.0*	7.3*	7.3*	6.8*	6.8*	6.2*	6.2*	5.7*	5.7*			4.8*	4.8*	22.0
9.0	SW			10.5*	10.5*	12.2*	12.2*	11.1*	11.1*	9.9*	9.9*	8.9*	8.9*	8.1*	8.1*	7.4*	7.4*	6.8*	6.8*	6.2*	6.2*	5.7*	5.7*			4.8*	4.8*	22.3
7.5	SW	10.6*	10.6*	13.3*	13.3*	13.3*	13.3*	11.5*	11.5*	10.1*	10.1*	9.1*	9.1*	8.2*	8.2*	7.5*	7.5*	6.8*	6.8*	6.2*	6.2*	5.7*	5.7*	5.0*	5.0*	4.9*	4.9*	22.6
6.0	SW	20.7*	20.7*	16.5*	16.5*	13.8*	13.8*	11.8*	11.8*	10.4*	10.4*	9.2*	9.2*	8.3*	8.3*	7.5*	7.5*	6.8*	6.8*	6.2*	6.2*	5.6*	5.6*	4.9*	4.9*	4.7*	4.7*	22.7
4.5	SW	21.9*	21.9*	17.3*	17.3*	14.2*	14.2*	12.1*	12.1*	10.6*	10.6*	9.3*	9.3*	8.4*	8.4*	7.5*	7.5*	6.8*	6.8*	6.2*	6.2*	5.5*	5.5*	4.7*	4.7*	4.5*	4.5*	22.8
3.0	SW	7.5*	7.5*	17.7*	17.7*	14.6*	14.6*	12.3*	12.3*	10.7*	10.7*	9.4*	9.4*	8.4*	8.4*	7.5*	7.5*	6.8*	6.8*	6.1*	6.1*	5.4*	5.4*	4.4*	4.4*	4.3*	4.3*	22.7
1.5	SW	5.4*	5.4*	12.9*	12.9*	14.6*	14.6*	12.4*	12.4*	10.7*	10.7*	9.4*	9.4*	8.3*	8.3*	7.4*	7.4*	6.6*	6.6*	5.9*	5.9*	5.1*	5.1*	4.0*	4.0*	4.0*	4.0*	22.5
0	SW	5.2*	5.2*	10.1*	10.1*	14.4*	14.4*	12.2*	12.2*	10.6*	10.6*	9.2*	9.2*	8.2*	8.2*	7.2*	7.2*	6.4*	6.4*	5.6*	5.6*	4.7*	4.7*			3.6*	3.6*	22.3
-1.5	SW	5.6*	5.6*	9.4*	9.4*	13.8*	13.8*	11.8*	11.8*	10.2*	10.2*	8.9*	8.9*	7.9*	7.9*	6.9*	6.9*	6.0*	6.0*	5.2*	5.2*	4.1*	4.1*			3.7*	3.7*	21.4
-3.0	SW	6.3*	6.3*	9.5*	9.5*	12.8*	12.8*	11.1*	11.1*	9.6*	9.6*	8.4*	8.4*	7.4*	7.4*	6.4*	6.4*	5.5*	5.5*	4.5*	4.5*					4.0*	4.0*	20.1
-4.5	SW			10.0*	10.0*	11.3*	11.3*	9.9*	9.9*	8.7*	8.7*	7.6*	7.6*	6.6*	6.6*	5.6*	5.6*	4.7*	4.7*							4.5*	4.5*	18.2
-6.0	SW									7.4*	7.4*	6.5*	6.5*													6.2*	6.2*	13.8
1/3 H	leight 🖰 🚾 Can I	oe slewe	ed thro	ough 3	360°	Lin	longi	tudina	al pos	ition (	of und	ercarı	riage			<b></b>	Лах. r	each	* Li	mited	by hy	dr. ca	pacit	y				

The lift capacities on the stick end without attachment are stated in metric tons (t) and can be slewed through 360° on a firm, level supporting surface. Capacities are valid for 750 mm wide flat pads. Indicated loads based on the ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity. The lift capacity values indicated are attained at the corresponding operating temperature. This operating temperature is ensured by continuous movement of the boom. Weights of fitted attachments (grabs, load hooks, etc.) and load accommodation attachment are to be deducted from the lift capacity values. The lift capacity of the unit is limited by its stability, the lifting capability of the hydraulic elements, or the maximum permissible lifting capacity of the load hook. In accordance with the harmonised European Standard EN 474-5, hydraulic excavators used for lifting operations must be equipped with pipe fracture safety valves, an overload warning device, a load hook and a lift capacity chart.

## LH 60 C HR - Equipment AG22

#### Port - Kinematic 2D



1 /2		6.0	) m	7.5	m	9.0	m	10.	5 m	12.	0 m	13.5	5 m	15.0	) m	16.	5 m	18.0	) m	19.	5 m	21.	0 m	22.	5 m			
m	Undercarriage	5	ď	5	<u>L</u>	5	<u>L</u>	5	<u>L</u>	- <del>-3</del>	<u>L</u>	5	<u>L</u>	5	ď	- <del>-5</del>	<u>L</u>	- <del>-5</del>	<u>j</u>	5	<u>j</u>	5	<u>L</u>	5	Ŀ	-5	<u>"</u>	m
24.0	SW							6.8*	6.8*																	6.7*	6.7*	10.
22.5	SW									7.0*	7.0*															6.0*	6.0*	12.
21.0	SW									8.0*	8.0*	7.0*	7.0*													5.6*	5.6*	14.
19.5	SW											7.3*	7.3*	6.8*	6.8*											5.3*	5.3*	16.
18.0	SW											7.2*	7.2*	6.7*	6.7*	6.3*	6.3*									5.1*	5.1*	17.0
16.5	SW											7.2*	7.2*	6.7*	6.7*	6.3*	6.3*	5.8*	5.8*							5.0*	5.0*	18.0
15.0	SW											7.2*	7.2*	6.7*	6.7*	6.3*	6.3*	5.9*	5.9*							4.9*	4.9*	19.
13.5	SW									7.9*	7.9*	7.3*	7.3*	6.8*	6.8*	6.3*	6.3*	5.9*	5.9*	5.6*	5.6*					4.8*	4.8*	20.
12.0	SW									8.1*	8.1*	7.4*	7.4*	6.8*	6.8*	6.4*	6.4*	6.0*	6.0*	5.6*	5.6*					4.8*	4.8*	20.8
10.5	SW							9.2*	9.2*	8.3*	8.3*	7.6*	7.6*	7.0*	7.0*	6.4*	6.4*	6.0*	6.0*	5.6*	5.6*	5.3*	5.3*			4.9*	4.9*	21.3
9.0	SW					10.9*	10.9*	9.6*	9.6*	8.6*	8.6*	7.8*	7.8*	7.1*	7.1*	6.5*	6.5*	6.1*	6.1*	5.7*	5.7*	5.3*	5.3*			4.9*	4.9*	21.6
7.5	SW			13.5*	13.5*	11.5*	11.5*	10.0*	10.0*	8.9*	8.9*	8.0*	8.0*	7.2*	7.2*	6.7*	6.7*	6.2*	6.2*	5.7*	5.7*	5.3*	5.3*			5.0*	5.0*	21.9
6.0	SW	18.0*	18.0*	14.4*	14.4*	12.1*	12.1*	10.4*	10.4*	9.2*	9.2*	8.2*	8.2*	7.4*	7.4*	6.8*	6.8*	6.2*	6.2*	5.8*	5.8*	5.3*	5.3*			5.1*	5.1*	22.0
4.5	SW	19.4*	19.4*	15.3*	15.3*	12.7*	12.7*	10.8*	10.8*	9.4*	9.4*	8.4*	8.4*	7.6*	7.6*	6.9*	6.9*	6.3*	6.3*	5.8*	5.8*	5.3*	5.3*			5.0*	5.0*	22.0
3.0	SW	12.1*	12.1*	16.0*	16.0*	13.2*	13.2*	11.2*	11.2*	9.7*	9.7*	8.6*	8.6*	7.7*	7.7*	7.0*	7.0*	6.4*	6.4*	5.8*	5.8*	5.3*	5.3*			5.0*	5.0*	22.0
1.5	SW	8.3*	8.3*	16.5*	16.5*	13.5*	13.5*	11.4*	11.4*	9.9*	9.9*	8.7*	8.7*	7.8*	7.8*	7.0*	7.0*	6.4*	6.4*	5.8*	5.8*	5.2*	5.2*			4.9*	4.9*	21.8
0	SW	7.4*	7.4*	12.7*	12.7*	13.7*	13.7*	11.6*	11.6*	10.0*	10.0*	8.8*	8.8*	7.8*	7.8*	7.0*	7.0*	6.3*	6.3*	5.7*	5.7*	5.1*	5.1*			4.8*	4.8*	21.5
-1.5	SW	7.3*	7.3*	11.3*	11.3*	13.7*	13.7*	11.6*	11.6*	10.0*	10.0*	8.8*	8.8*	7.8*	7.8*	7.0*	7.0*	6.2*	6.2*	5.5*	5.5*	4.8*	4.8*			4.7*	4.7*	21.1
-3.0	SW	7.6*	7.6*	10.9*	10.9*	13.3*	13.3*	11.4*	11.4*	9.8*	9.8*	8.6*	8.6*	7.6*	7.6*	6.8*	6.8*	6.0*	6.0*	5.2*	5.2*					4.6*	4.6*	20.6
-4.5	SW	8.1*	8.1*	11.0*	11.0*	12.7*	12.7*	10.9*	10.9*	9.5*	9.5*	8.3*	8.3*	7.3*	7.3*	6.4*	6.4*	5.6*	5.6*	4.7*	4.7*					4.3*	4.3*	20.0
-6.0	SW			11.4*	11.4*	11.7*	11.7*	10.1*	10.1*	8.8*	8.8*	7.7*	7.7*	6.8*	6.8*	5.9*	5.9*	4.9*	4.9*							4.6*	4.6*	18.5
-7.5	SW							9.0*	9.0*	7.9*	7.9*	6.8*	6.8*	5.9*	5.9*											5.9*	5.9*	15.1

The lift capacities on the stick end without attachment are stated in metric tons (t) and can be slewed through 360° on a firm, level supporting surface. Capacities are valid for 750 mm wide flat pads. Indicated loads based on the ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity. The lift capacity values indicated are attained at the corresponding operating temperature. This operating temperature is ensured by continuous movement of the boom. Weights of fitted attachments (grabs, load hooks, etc.) and load accommodation attachment are to be deducted from the lift capacity values. The lift capacity of the unit is limited by its stability, the lifting capability of the hydraulic elements, or the maximum permissible lifting capacity of the load hook. In accordance with the harmonised European Standard EN 474-5, hydraulic excavators used for lifting operations must be equipped with pipe fracture safety valves, an overload warning device, a load hook and a lift capacity chart.

Max. reach \* Limited by hydr. capacity

Height 👊 Can be slewed through 360° 🖟 In longitudinal position of undercarriage

# Equipment

Undercarriage	W 09	O 09	60 M HR	60 C HR
Track pads, variants		+		+
Individual control outriggers	+		•	
Three-piece chain guide		•		•
Shuttle axle lock, automatic	•		•	
Outrigger monitoring system	+		+	
Tyres, variants	+		+	
Protection for piston rods, outriggers	+		+	
Two lockable storage compartments	•			

Hydraulic System	W 09	O 09	60 M HR	60 C HR
Electronic pump regulation	•	•	•	•
Liebherr hydraulic oil from −20 °C to +40 °C	•	•	•	•
Liebherr hydraulic oil, biologically degradable	+	+	+	+
Liebherr hydraulic oil, specially for warm or cold regions	+	+	+	+
Magnetic rod in hydraulic tank	•	•	•	•
Bypass filter	+	+	+	+
Preheating hydraulic oil	+	+	+	+

Uppercarriage	W 09	0 O9	60 M HR	60 C HR
Uppercarriage right side light, 1 piece, LED	•	•	•	•
Uppercarriage rear light, 2 pieces, LED	+	+		
Uppercarriage underneath rear light, 1 piece, LED			+	+
Refuelling system with filling pump	+	+	+	+
Railing on uppercarriage	+	+	•	•
Generator	+	+	+	+
Main battery switch for electrical system	•	•	•	•
Amber beacon, at uppercarriage, LED double flash	+	+	+	+
Protection for headlights	+	+		
Protection for rear lights	+	+		
Tool equipment, extended	•	•	•	•

Engine	W 09	O 09	60 M HF	60 C HR
Fuel anti-theft device	+	+	+	+
Air pre-filter with dust discharge	+	+	+	+
Automatic engine shut-down (time adjustable)	+	+	+	+
Preheating fuel	+	+	+	+
Preheating coolant	+	+	+	+
Preheating engine oil*	+	+	+	+

≈ Cooling System	W 09	0 09	60 M HR	60 C HR
Reversible fan drive, fully automatic	+	+	+	+
Protective grid in front of cooler intake	•	•	•	•

Operator's Cab	60 M	O 09	60 M HR	60 C HR
Stabilizer, control lever, left console	+		+	
Stabilizer, proportional control on left joystick	•		•	
Cab lights rear, LED	+	+	+	+
Cab lights front, LED	+	+	+	+
Cab lights front, LED (under rain cover)	•	•	•	•
Armrest adjustable	•	•	•	•
Circular bubble level	+	+	•	•
Slewing gear brake Comfort, button on the left or right joystick	+	+	+	+
Driver profile, personalised (max. 5 drivers)	+	+	+	+
Operator's seat Comfort	•	•	•	•
Operator's seat Premium	+	+	+	+
Driving alarm				
(acoustic signal is emitted during travel, can be switched ON/OFF)	+	+	+	+
Fire extinguisher	+	+	+	+
Footrest	+	+	+	+
Horn, button on left joystick	•	•	•	•
Joystick steering	•		•	
Joystick and wheel steering (slim version)	+		+	
Cab elevation, hydraulic (LHC)	•	•	•	•
Cab elevation, hydraulic with double parallelogram (LHC-D)			+	+
Cab elevation, rigid (LFC)	+	+		
Automatic air conditioning	•	•	•	•
Wheel steering (slim version)	+		+	
LiDAT, vehicle fleet management	•	•	•	•
Proportional control	•	•	•	•
Radio Comfort, control via display with handsfree set	+	+	+	+
Preparation for radio installation Back-up alarm	•	•	•	•
(acoustic signal is emitted traveling backward, can not be switched off)  Amber beacon, on cabin, LED double flash	+		+	
Windows made from impact-resistant laminated safety glass	+	+	+	+
Windscreen wiper, roof	+	+	+	+
Windshield wiper, entire windscreen	•	+	•	•
Top guard	+	+	+	+
Front guard, adjustable	+	+	+	+
Sun visor	+	+	+	+
Left control console, folding	•	•	•	•

	Σ	ပ	MH	C HR
■ ぺ Equipment	09 W	90	90	90
Boom lights, 2 pieces, LED	•	•	•	•
Stick lights, 2 pieces, LED	•	•	•	•
Boom shutoff (retract/extend), electronically	+	+	•	•
Equipment with electro-hydraulic end position control	•	•	•	•
AutoLift	+	+	+	+
Pressure warning mechanism hoist cylinder	•	•	•	•
ERC system	•	•	•	•
Filter system for attachment	+	+	+	+
Electronic lift limitation	+	+	+	+
Boom cylinder cushioning	•	•	•	•
Stick camera (with separate monitor), bottom side, with protection	+	+	+	+
Load torque limitation	+	+	+	+
Liebherr multi coupling system	+	+	+	+
Pipe fracture safety valves hoist cylinders	•	•	•	•
Pipe fracture safety valves stick cylinders	•	•	•	•
Quick coupling system MH 110B	+	+	+	+
Protection for piston rod, energy recovering cylinder	+	+	+	+
Protection for piston rods, hoist cylinder	+	+	+	+
Stick shutoff (retract), electronically	•	•		
Stick shutoff (retract/extend), electronically	+	+	•	•
Retract stick without pressure	•	•	•	•
Sticks with quick coupling	+	+	+	+
Overload warning device	+	+	+	+

Complete Machine	60 M	0 O O	60 M HR	60 C HR
Lubrication				
Lubrication undercarriage, manually – decentralised (grease points)	•			
Lubrication undercarriage, manually - centralised (one grease point)	+		•	
Central lubrication system for uppercarriage and equipment, automatically	•	•	•	•
Central lubrication system for undercarriage, automatically	+		+	
Central lubrication system, extension for attachment	+	+	+	+
Special coating				
Special coating, variants	+	+	+	+
Monitoring				
Rear view monitoring with camera	•	•	•	•
Side view monitoring with camera	•	•	•	•

Options and / or special equipments, supplied by vendors other than Liebherr, are only to be installed with the knowledge and approval of Liebherr in order to retain warranty.

<sup>• =</sup> Standard, + = Option
\* = country-dependent

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## **Attachments**



## Grab for Loose Material

Shells for loose material with cutting edge (without teeth)

Grab model GMZ 50								
Width of shells	mm	1,400	1,600	1,800	2,000	2,200	2,400	3,200
Capacity	m <sup>3</sup>	3.50	4.00	4.50	5.00	5.50	6.00	8.00
Loose material, specific weight up to	t/m³	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Weight	kg	2,695	2,830	2,905	3,035	3,170	3,300	3,830
Grab model GMZ 80								
Width of shells	mm	1,300	1,500	1,750	2,000	2,200	2,600	
Capacity	m³	3.00	3.50	4.00	4.50	5.00	6.00	
Weight	kg	2,515	2,630	2,775	2,920	3,040	3,275	



#### Multi-Tine Grab closed

Grab model GMM 80-5 (5 tines)					
Capacity	m <sup>3</sup> 1.10*	1.40*	1.70*		
Weight	kg 2,440	2,580	2,740		
Grab model GMM 120-5 (5 tines)					
Capacity	m³ 1.70	2.00	2.50	3.00	

<sup>\*</sup> heart-shaped



#### **Wood Grab**

Grab model GMH 50 round-s	Grab model GMH 50 round-shaped (overlapping, horizontal cylinders)					
Size	m <sup>2</sup>	2.50	2.50	2.80	3.20	3.60
Cutting width	mm	870	1,000	1,000	1,000	1,000
Height of grab, closed	mm	2,520	2,531	2,642	2,772	2,942
Weight	kg	2,115	2,190	2,270	2,330	2,390
Grab model GMH 80 round-s	haped (comple	ete overlapping, vertica	al cylinders)			
Size	m <sup>2</sup>	1.60	1.90	2.20	2.50	
Cutting width	mm	870	870	870	870	
Height of grab, closed	mm	3,202	3,332	3,487	3,582	
Weight	kg	2,195	2,240	2,255	2,315	



## Load Hook

Max. load	t	12.5	
Height with suspension	mm	930	
Weight	ka	135	



### **Magnet Devices/Lifting Magnets**

Generator	kW	13/20/25
Electromagnet with suspension		
Power	kW	12.8/17.8
Diameter of magnet	mm	1,700
Weight	kg	3,280*

<sup>\*</sup> only magnet plate