

Product Information Crawler Excavator

R 970 SME

Litronic®



Generation

6.1

Engine

330 kW/443 HP

Tier 4 Final

Operating Weight

Backhoe: 80.150 kg/176.700 lb

Shovel: 81.000 kg/178.570 lb

Bucket Capacity

Backhoe: 4,00 – 5,00 m³/5,88 – 6,54 yd³

Shovel: 4,00 – 5,00 m³/5,23 – 6,54 yd³

LIEBHERR

Crawler Excavator R 970 SME

Super Mass Excavation

Resized Attachments

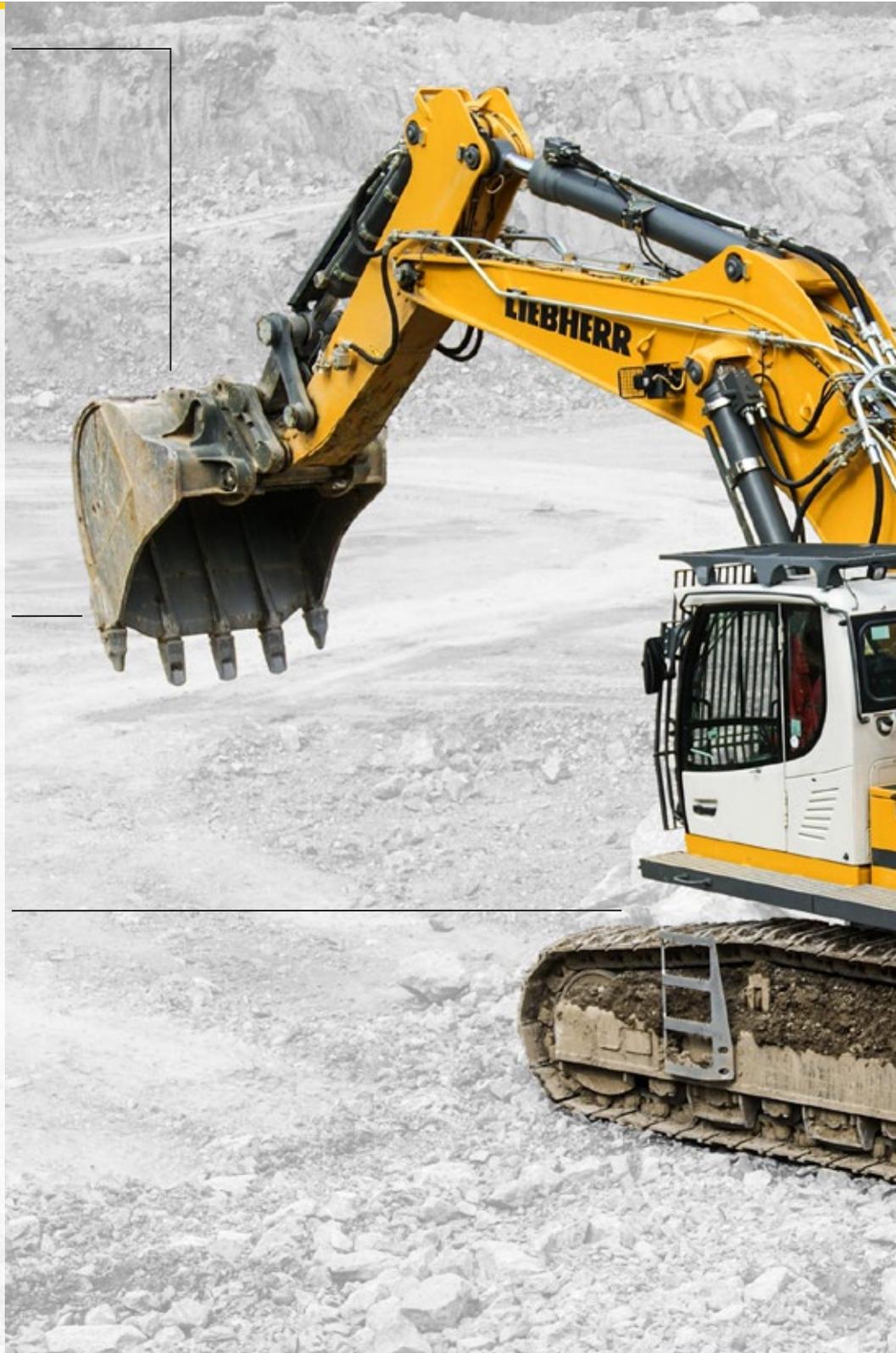
- Reinforced welded structure
- Larger kinematics components
- Integrated bottom boom and stick protection as standard
- Additional protection available (bucket cylinders)

Increased Productivity

- HD bucket, up to 6.55 yd³ for density of 3,034 lbs/yd³
- Digging and breakout forces increased to over 15 %

Robust Undercarriage

- Fitted with excavator components from the next size up machine
- Track pads with double grouser chamfered for improved manoeuvrability on rough terrain
- Cast sprocket wheel with double tooth segment for longer life
- Double sided bearings on carrier rollers for increased reliability and long-term durability
- Reinforced protection of travel drive for increased resistance against wear on hard and abrasive rock





Silent and Comfortable Cab

- To date, the largest and quietest cab in its category
- Mounted on visco-elastic elements to absorb vibrations
- Impact-resistant front window and roof window
- Pneumatic suspension seat, heated, multidirectional (air-conditioned optional)
- Large colour touch screen with high resolution display
- Elevated cab for improved visibility of loading area (option)

Accessible and Protected Uppercarriage

- Left and right walkways as standard and large walkways with guardrails in option
- Platform with access to engine and hydraulic compartments for ergonomic and safe servicing
- Refined design for extended visibility
- New engine which conforms to Tier 4 Final standards
- Heavy counterweight for enhanced stability and better performance

Crawler Excavator R 970 SME Shovel

Super Mass Excavation

Attachments with No Compromises

- Cast steel components
- Parallel kinematics for powerful and constant penetration
- Bucket cylinders positioned under the attachments for better protection
- Safety valves for hose ruptures of boom cylinders
- Front shovel flap closure semi-automatic

Robust Undercarriage

- Fitted with excavator components from the next size up machine
- Track pads with 2 chamfered ribs for improved manoeuvrability on rough terrain
- Cast sprocket wheel with double tooth segment for longer life
- Dual-pivot carrier rollers for increased reliability and long-term durability
- Reinforced protection of travel drive for increased resistance against wear on hard and abrasive rock





Silent and Comfortable Cab

- Elevated cab for improved visibility of loading area
- To date, the largest and quietest cab in its category
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Accessible and Protected Uppercarriage

- Left and right walkways as standard and large walkways with optional guardrails
- Platform with access to engine and hydraulic compartments for ergonomic and safe servicing
- Refined design for extended visibility
- New engine which conforms to Tier 4 Final standards
- Heavy counterweight for enhanced stability and better performance

Technical Data



Engine

| | |
|------------------------------|--|
| Rating | |
| per SAE J1349 | 443 HP (330 kW) at 1,800 rpm |
| per ISO 9249 | 449 HP (330 kW) at 1,800 rpm |
| Torque | 2,750 Nm at 1,100 rpm / 2,028 lbf ft at 1,000 rpm |
| Model | Liebherr D9508 A7 SCR |
| Type | 8 cylinder V engine |
| Bore | 128 mm / 5.0 in |
| Stroke | 157 mm / 6.2 in |
| Displacement | 16.16 l / 986 in³ |
| Engine operation | 4-stroke diesel Common-Rail |
| Exhaust gas treatment | Tier 4 Final SCR Filter Passive regeneration by thermo management |
| Cooling system | Water-cooled and integrated motor oil cooler, after-cooled and fuel cooled |
| Air cleaner | Dry-type air cleaner with pre-cleaner, primary and safety elements |
| Fuel tank | 1,140 l / 301 gal |
| Urea tank | 180 l / 48 gal |
| Electrical system | |
| Voltage | 24 V |
| Batteries | 2 x 180 Ah / 12 V |
| Starter | 24 V / 7.8 kW |
| Alternator | Three-phase current 28 V / 140 A |
| Engine idling | Sensor controlled |
| Motor management | Connection to the integrated excavator system controlling via CAN-BUS to the economical utilisation of the service that is available |



Hydraulic Controls

| | |
|-----------------------------|---|
| Power distribution | Via control valves in single block with integrated safety valves |
| Flow summation | To boom and stick |
| Closed-loop circuit | For uppercarriage swing drive |
| Servo circuit | Electro-hydraulic control |
| Equipment and swing | Proportional via joystick levers |
| Travel | - Proportional control via foot pedals or removable levers - Speed pre-selection |
| Additional functions | Proportional regulation via foot pedals or joystick toggle switch |



Hydraulic System

| | |
|--------------------------------|---|
| Hydraulic pumps | |
| For equipment and travel drive | Two Liebherr variable displacement, swashplate pumps |
| Max. flow | 2 x 410 l/min. / 2 x 108 gpm |
| Max. pressure | 350 bar / 5,076 psi |
| For swing drive | Reversible, variable displacement, swashplate pump, closed-loop circuit |
| Max. flow | 245 l/min. / 65 gpm |
| Max. pressure | 370 bar / 5,366 psi |
| Pump regulation | Electro-hydraulic with electronic engine speed sensing regulation, pressure compensation, flow compensation, high flow |
| Hydraulic tank | 435 l / 115 gal |
| Hydraulic system | 920 l / 243 gal |
| Hydraulic oil filter | 2 full flow filters in return line with integrated fine filter area (5 µm / 2,500 mesh) |
| Cooling system | Compact cooler for water cooler, after-cooler, fuel cooler and transmission pump oil, sandwiched with cooler for oil and condenser of air-conditioning with hydrostatically controlled fan drives |
| MODE selection | Adjustment of engine and hydraulic performance via a mode pre-selector to match application, e.g. for especially economical and environmentally friendly operation or for maximum digging performance and heavy-duty jobs |
| RPM adjustment | Stepless adjustment of engine output via RPM at each selected mode |
| Tool Control | 20 preadjustable pump flows and pressures for add-on attachments |



Swing Drive

| | |
|----------------------|---|
| Drive | Liebherr swashplate motor with integrated brake valve |
| Transmission | Liebherr compact planetary reduction gears |
| Swing ring | Liebherr, sealed race ball bearing swing ring, internal teeth |
| Swing speed | 0 – 5.6 rpm stepless |
| Swing torque | 233 kNm / 171,852 lbf ft |
| Holding brake | Wet multi-disc (spring applied, pressure released) |



Operator's Cab

| | |
|-------------------------------|---|
| Cab | LED work headlights integrated in the ceiling, a door with a sliding window (can be opened on both sides), large storing box and several stowing possibilities, shock-absorbing suspension, sounddamping insulating, tinted laminated safety glass, separate window shades for the sunroof window and windscreen, cigarette lighter and 12 V plug, storage bins, lunchbox, cup holder |
| Operator's seat | Liebherr-Comfort seat, airsprung with automatic weight adjustment, vertical and longitudinal seat damping including consoles and joysticks. Seat and armrests adjustable separately and in combination (adjustable in width, height and inclination), seat heating as standard |
| Arm consoles | Oscillating consoles with seat, tiltable console left |
| Operation and displays | Large high-resolution operating unit, intuitive, color 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 |
| Noise emission | |
| ISO 6396 | L_{pA} (inside cab) = 70 dB(A) |
| 2000/14/EC | L_{WA} (surround noise) = 108 dB(A) |



Undercarriage

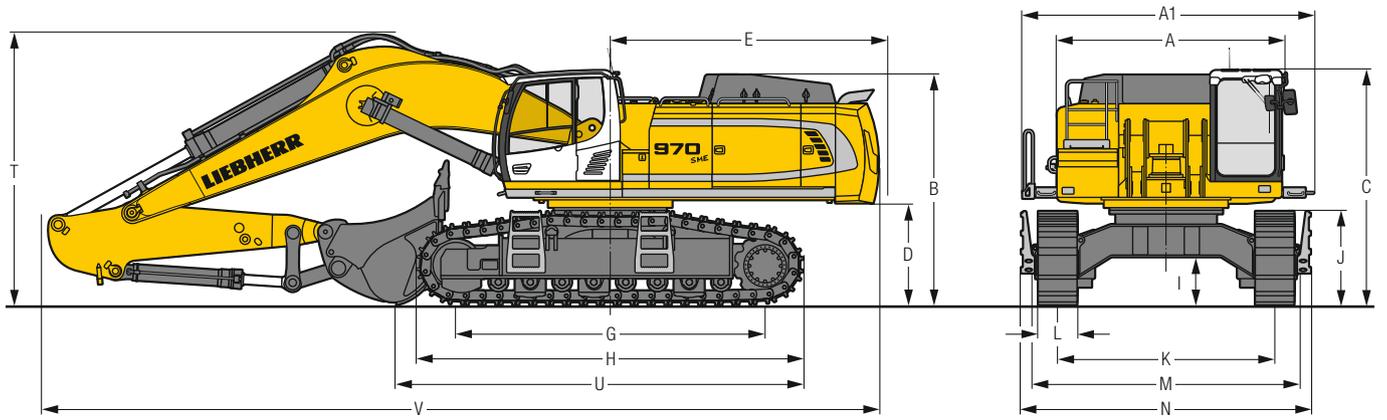
| | |
|--|---|
| S-HD | Gauge 3,350 mm / 11' |
| Drive | Liebherr swashplate motor with brake valves on both sides |
| Transmission | Liebherr compact planetary reduction gear |
| Maximum travel speed | Low range 2.2 km/h / 1.4 mph High range 3.5 km/h / 2.2 mph |
| Drawbar pull on crawler | 568 kN / 127,692 lbf |
| Track components | D9G, maintenance-free |
| Track rollers / Carrier rollers | 8/2 |
| Tracks | Sealed and greased |
| Track pads | Double grouser |
| Holding brake | Wet multi-disc (spring applied, pressure released) |
| Brake valves | Outside the travel motor |
| Lashing eyes | Integrated |



Equipment

| | |
|------------------------------|--|
| Type | Combination of resistant steel plates and cast steel components |
| Hydraulic cylinders | Liebherr cylinders with seal and guidance systems and shock protection |
| Bearings | Sealed, low maintenance |
| Lubrication | Automatic central lubrication system (except link and tilt geometry) |
| Hydraulic connections | Pipes and hoses equipped with SAE split-flange connections |
| Buckets | Standard equipped with Liebherr tooth system |

Dimensions



| | | mm/ft in | | |
|-----------|-----------------------------------|---------------------------|--------------|--------------|
| A | Uppercarriage width | 3,515/11' 6" | | |
| A1 | Uppercarriage width with catwalks | 4,495/14' 9" | | |
| B | Uppercarriage height | 3,585/11' 9" | | |
| C | Cab height | 3,665/3,860 / 12' 12' 8"* | | |
| D | Counterweight ground clearance | 1,585 / 5' 2" | | |
| E | Rear-end length | 4,270/14' | | |
| G | Wheelbase | 4,770/15' 8" | | |
| H | Undercarriage length | 5,960/19' 7" | | |
| I | Undercarriage ground clearance | 745 / 2' 5" | | |
| J | Track height | 1,460 / 4' 9" | | |
| K | Track gauge | 3,350/11' | | |
| L | Track pad width | 500 / 20" | 600 / 24" | 750 / 30" |
| M | Width over tracks | 4,130/13' 7" | 4,130/13' 7" | 4,130/13' 7" |
| N | Width over steps | 4,460/14' 8" | 4,460/14' 8" | 4,460/14' 8" |

* with FOPS top guard

| | Stick length m/ft in | Mono boom SME 7.00 m/23' direct mounting mm/ft in |
|----------|-------------------------|---|
| T | Boom height | 2.60/8' 6" SME 4,200/13' 9" 3.00/9'10" SME 4,250/13'11" |
| U | Length on ground | 2.60/8' 6" SME 11,500/37' 9" 3.00/9'10" SME 6,300/20' 8" |
| V | Overall length | 2.60/8' 6" SME 12,800/42' 3.00/9'10" SME 12,900/42' 4" |
| | Bucket | 4.50 m ³ /5.88 yd ³ |

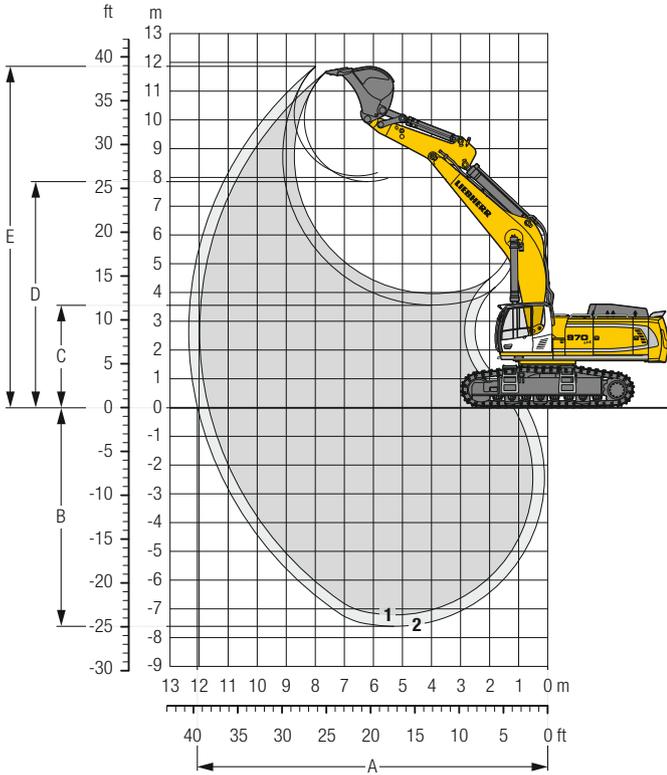
Transport Dimensions

removable elements disassembled

| | Stick m/ft in | Mono boom SME 7.00 m/23' mm/ft in |
|------------------|----------------------------------|---|
| Transport width | | 4,495/14' 9" |
| Transport length | 2.60/8' 6" SME 3.00/9'10" SME | 12,800/42' 12,900/42' 4" |
| Transport height | 2.60/8' 6" SME 3.00/9'10" SME | 4,200/13' 9" 4,250/13'11" |
| Bucket | | 4.50 m ³ /5.88 yd ³ |

Backhoe Bucket

with Mono Boom SME 7.00 m/23' and Counterweight 14.5 t/31,970 lb



Digging Envelope

| without quick coupler | | 1 | 2 |
|------------------------------|---------|-------------|--------------|
| Stick length | m/ft in | 2.60/ 8'6" | 3.00/ 9'10" |
| | | SME | SME |
| A Max. reach at ground level | m/ft in | 11.65/38'3" | 12.05/39' 6" |
| B Max. digging depth | m/ft in | 7.20/23'7" | 7.60/24'11" |
| C Min. dumping height | m/ft in | 3.95/13' | 3.55/11' 8" |
| D Max. dumping height | m/ft in | 7.85/25'9" | 8.05/26' 5" |
| E Max. cutting height | m/ft in | 11.65/38'3" | 11.85/38'11" |

Forces

| without quick coupler | | 1 | 2 |
|----------------------------------|---------|-------------|-------------|
| Stick digging force (ISO 6015) | kN/ lbf | 357/ 80,260 | 328/ 73,740 |
| Bucket digging force (ISO 6015) | kN/ lbf | 392/ 88,130 | 392/ 88,130 |
| Stick digging force (SAE J1179) | kN/ lbf | 335/ 75,310 | 309/ 69,470 |
| Bucket digging force (SAE J1179) | kN/ lbf | 339/ 76,210 | 339/ 76,210 |

Operating Weight and Ground Pressure

The operating weight includes the basic machine with counterweight 14.5 t/31,970 lb, mono boom SME 7.00 m/23', stick SME 2.60 m/8'6" and HD bucket 4.50 m³/5.88 yd³ (4,850 kg/10,690 lb).

| Undercarriage | | S-HD | | |
|-----------------|-------------|----------------|----------------|----------------|
| Pad width | mm/in | 500/20" | 600/24" | 750/30" |
| Weight | kg/ lb | 78,350/172,730 | 79,050/174,280 | 80,150/176,700 |
| Ground pressure | kg/cm²/ psi | 1.54/ 21.9 | 1.30/ 18.5 | 1.05/ 14.9 |

Buckets Machine stability per ISO 10567* (75% of tipping capacity)

| | Cutting width | Capacity ISO 7461 | Weight | S-HD-Undercarriage SME-Equipment (with track pads 750 mm/30") | |
|-------------------|---------------|-------------------|--------|---|------------|
| | | | | Stick length (m/ft in) | |
| | | | | 2.60 8'6" | 3.00 9'10" |
| HD ¹⁾ | 2,200 | 4.50 | 4,850 | ▲ | ▲ |
| | 87" | 5.88 | 10,690 | ▲ | ▲ |
| | 2,300 | 5.00 | 5,050 | ▲ | ■ |
| HD ²⁾ | 91" | 6.54 | 11,130 | ▲ | ■ |
| | 2,200 | 4.50 | 4,950 | ▲ | ▲ |
| | 87" | 5.88 | 10,910 | ▲ | ▲ |
| HDV ³⁾ | 2,300 | 5.00 | 5,200 | ▲ | ■ |
| | 91" | 6.54 | 11,460 | ▲ | ■ |
| | 2,000 | 4.00 | 5,000 | ▲ | ▲ |
| HDV ⁴⁾ | 79" | 5.23 | 11,020 | ▲ | ▲ |
| | 2,200 | 4.50 | 5,350 | ▲ | ▲ |
| | 87" | 5.88 | 11,800 | ▲ | ▲ |
| HDV ⁵⁾ | 2,300 | 5.00 | 5,600 | ▲ | ■ |
| | 91" | 6.54 | 12,350 | ▲ | ■ |
| | 2,000 | 4.00 | 5,100 | ▲ | ▲ |
| HDV ⁶⁾ | 79" | 5.23 | 11,240 | ▲ | ▲ |
| | 2,200 | 4.50 | 5,450 | ▲ | ▲ |
| | 87" | 5.88 | 12,020 | ▲ | ▲ |
| HDV ⁶⁾ | 2,300 | 5.00 | 5,700 | ▲ | ■ |
| | 91" | 6.54 | 12,570 | ▲ | ■ |

* Indicated loads are based on ISO 10567, at maximum reach, and may be swung 360° on firm and even ground

¹⁾ HD bucket with teeth Z 90 (appropriate for materials above classification 6, according to VOB, Section C, DIN 18300)

²⁾ HD bucket with delta cutting edge and teeth Z 90 (appropriate for materials above classification 6, according to VOB, Section C, DIN 18300)

³⁾ HDV bucket with teeth Z 90 (appropriate for materials above classification 6, according to VOB, Section C, DIN 18300)

⁴⁾ HDV bucket with delta cutting edge and teeth Z 90 (appropriate for materials above classification 6, according to VOB, Section C, DIN 18300)

Other buckets available upon request

Max. material weight ▲ = ≤ 2.0 t/m³/3,400 lb/yd³, ■ = ≤ 1.8 t/m³/3,000 lb/yd³

Lift Capacities

with Mono Boom SME 7.00 m/23', Counterweight 14.5 t/31,970 lb and Track Pads 750 mm/30"

Stick SME 2.60 m/8'6"

| Under-carriage | Height | 3.0 m 10 ft | | 4.5 m 15 ft | | 6.0 m 20 ft | | 7.5 m 25 ft | | 9.0 m 30 ft | | m ft in |
|----------------|------------------|----------------|-------------|----------------|-------------|----------------|-------------|----------------|-------------|----------------|---|---|
| | | ↕ | ↔ | ↕ | ↔ | ↕ | ↔ | ↕ | ↔ | ↕ | ↔ | |
| S-HD | 9.0 m 30 ft | t | | | | | | | | | | 13.5* 13.5* 7.3 30,1* 30,1* 23'7" |
| | 7.5 m 25 ft | t | | | | | | 14.6* 14.6* | | | | 12.7* 12.7* 8.5 32,0* 32,0* 27'6" |
| | 6.0 m 20 ft | t | | 23.5* 23.5* | 18.1* 18.1* | 15.4* 15.4* | 14.1* 14.1* | 12.5* 12.5* | | | | 9.2 28,5* 28,5* 30'1" |
| | 4.5 m 15 ft | t | | | 20.8* 20.8* | 16.7* 16.7* | 14.6* 14.6* | 12.6* 12.6* | | | | 9.6 33,5* 33,5* 31'7" |
| | 3.0 m 10 ft | t | | | 23.3* 23.3* | 18.0* 18.0* | 15.2* 15.2* | 13.2* 13.2* | | | | 9.8 50,1* 50,1* 32'2" |
| | 1.5 m 5 ft | t | | | 24.5* 24.5* | 18.9* 18.9* | 15.2* 15.2* | 13.6* 14.2* | | | | 9.7 52,9* 52,9* 32,7 33,8* 30,0 31,2* 32' |
| | 0 m 0 ft | t | | | 24.6* 24.6* | 24.3* 24.3* | 19.1* 19.1* | 15.0* 15.5* | 14.2* 14.5* | | | 9.4 57,6* 57,6* 52,8* 52,8* 41,3* 41,3* 32,4 33,4* 31,2 32,0* 30'11" |
| | -1.5 m -5 ft | t | 26.2* 26.2* | 29.1* 29.1* | 23.1* 23.1* | 18.2* 18.2* | | | 14.6* 14.6* | | | 8.8 32,2* 32,2* 28'11" |
| | -3.0 m -10 ft | t | 29.8* 29.8* | 25.4* 25.4* | 20.4* 20.4* | 15.8* 15.8* | | | 14.4* 14.4* | | | 7.9 31,7* 31,7* 25'10" |
| | -4.5 m -15 ft | t | 19.0* 19.0* | 14.8* 14.8* | | | | | 13.1* 13.1* | | | 6.5 40,6* 40,6* 31,1* 31,1* 28,6* 28,6* 20'11" |

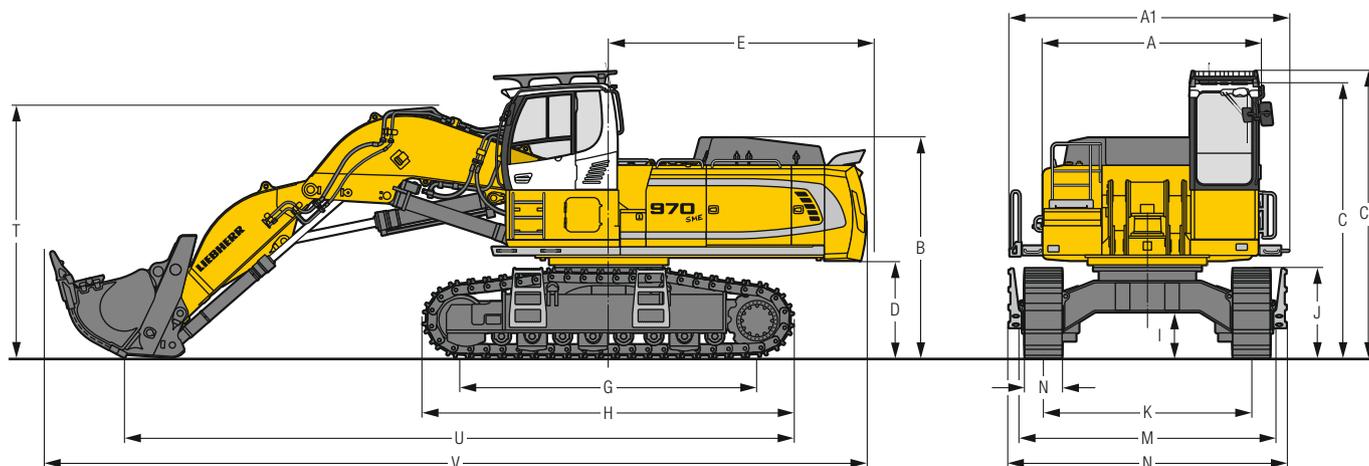
Stick SME 3.00 m/9'10"

| Under-carriage | Height | 3.0 m 10 ft | | 4.5 m 15 ft | | 6.0 m 20 ft | | 7.5 m 25 ft | | 9.0 m 30 ft | | m ft in |
|----------------|------------------|----------------|-------------|----------------|-------------|----------------|-------------|----------------|-------------|----------------|---|---|
| | | ↕ | ↔ | ↕ | ↔ | ↕ | ↔ | ↕ | ↔ | ↕ | ↔ | |
| S-HD | 9.0 m 30 ft | t | | | | | | | 13.8* 13.8* | | | 11.4* 11.4* 7.8 25,3* 25,3* 25'4" |
| | 7.5 m 25 ft | t | | | | | | 13.8* 13.8* | | | | 10.7* 10.7* 8.9 30,2* 30,2* 28'11" |
| | 6.0 m 20 ft | t | | | | 17.0* 17.0* | 14.7* 14.7* | 13.4* 13.4* | | | | 9.6 36,8* 36,8* 31,9* 31,9* 29,4* 29,4* 23,2* 23,2* 31'5" |
| | 4.5 m 15 ft | t | | | 28.4* 28.4* | 19.8* 19.8* | 16.0* 16.0* | 14.0* 14.0* | 10.6* 10.6* | | | 10.0 60,3* 60,3* 42,6* 42,6* 34,8* 34,8* 30,5* 30,5* 23,4* 23,4* 32'10" |
| | 3.0 m 10 ft | t | | | 22.4* 22.4* | 17.5* 17.5* | 14.7* 14.7* | 11.1* 11.1* | | | | 10.2 48,3* 48,3* 37,8* 37,8* 32,0* 32,0* 24,4* 24,4* 33'5" |
| | 1.5 m 5 ft | t | | | 36.5* 36.5* | 51.8* 51.8* | 40.0* 40.0* | 32.5* 33.1* | 26.1* 26.1* | | | 33'2" 26,9* 26,9* 62,0* 62,0* 52,5* 52,5* 40,9* 40,9* 32,0 33,2* 29,0* 29,0* 32'2" |
| | 0 m 0 ft | t | | | 25.4* 25.4* | 30.2* 30.2* | 23.3* 23.3* | 18.3* 18.3* | 14.6* 14.6* | | | 9.2 57,1* 57,1* 65,8* 65,8* 50,5* 50,5* 39,7* 39,7* 31,3* 31,3* 30,7* 30,7* 30'4" |
| | -1.5 m -5 ft | t | 25.4* 25.4* | 30.2* 30.2* | 23.3* 23.3* | 18.3* 18.3* | 14.6* 14.6* | 13.9* 13.9* | | | | 9.2 57,1* 57,1* 65,8* 65,8* 50,5* 50,5* 39,7* 39,7* 31,3* 31,3* 30,7* 30,7* 30'4" |
| | -3.0 m -10 ft | t | 33.6* 33.6* | 26.8* 26.8* | 21.0* 21.0* | 16.5* 16.5* | | | 13.9* 13.9* | | | 8.4 73,3* 73,3* 58,0* 58,0* 45,4* 45,4* 35,4* 35,4* 30,5* 30,5* 27'4" |
| | -4.5 m -15 ft | t | | | 21.1* 21.1* | 16.6* 16.6* | | | 13.1* 13.1* | | | 7.0 45,2* 45,2* 35,2* 35,2* 28,6* 28,6* 22'10" |

Height
 Can be slewed through 360°
 In longitudinal position of undercarriage
 Max. reach
 * Limited by hydr. capacity

The load values are quoted in tons (t)/lb x 1,000 at stick end (without bucket), and may be swung 360° on firm and even ground. Adjacent values are valid for the undercarriage when in the longitudinal position. Capacities are valid for 750 mm/30" wide track pads. Indicated loads are based on ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity (indicated via *). Without bucket cylinder, link and lever the lift capacities will increase by 1,220 kg/2,690 lb. Lifting capacity of the excavator is limited by machine stability and hydraulic capacity.

Dimensions Front Shovel



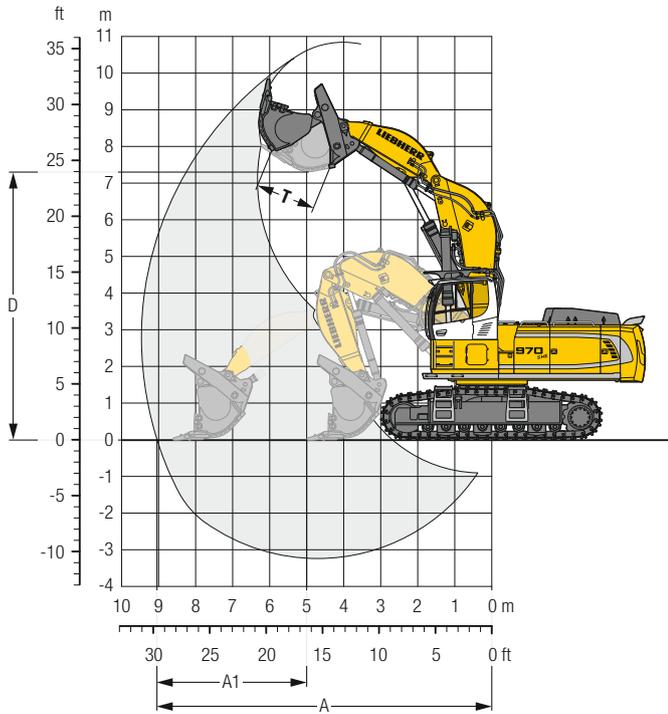
| | | mm / ft in |
|-----------|-----------------------------------|---------------|
| A | Uppercarriage width | 3,515 / 11'6" |
| A1 | Uppercarriage width with catwalks | 4,495 / 14'9" |
| B | Uppercarriage height | 3,585 / 11'9" |
| C | Cab height | 4,465 / 14'8" |
| C1 | Cab height with FOPS top guard | 4,660 / 15'3" |
| D | Counterweight ground clearance | 1,585 / 5'2" |
| E | Rear-end length | 4,270 / 14' |
| G | Wheelbase | 4,770 / 15'8" |
| H | Undercarriage length | 5,960 / 19'7" |

| | | mm / ft in |
|----------|--------------------------------|--|
| I | Undercarriage ground clearance | 745 / 2' 5" |
| J | Track height | 1,460 / 4' 9" |
| K | Track gauge | 3,350 / 11' |
| L | Track pad width | 500 / 20" 600 / 24" 750 / 30" |
| M | Width over tracks | 4,130 / 13' 7" 4,130 / 13' 7" 4,130 / 13' 7" |
| N | Width over steps | 4,460 / 14' 8" 4,460 / 14' 8" 4,460 / 14' 8" |
| T | Boom height | 4,100 / 13' 5" |
| U | Length on ground | 10,750 / 35' 3" |
| V | Overall length | 13,200 / 43' 4" |

Transport Dimensions removable elements disassembled

| | Shovel equipment |
|------------------|--|
| | mm / ft in |
| Transport width | 4,495 / 14'9" |
| Transport length | 13,200 / 43'4" |
| Transport height | 4,465 / 14'8" |
| Shovel | 4.50 m ³ / 5.88 yd ³ |

Front Shovel



Digging Envelope

| | | |
|-------------------------------------|----------|--------------|
| A Max. reach at ground level | m/ft in | 9.05/29' 8" |
| A1 Max. crowd length | m/ft in | 3.60/11'10" |
| D Max. dumping height | m/ft in | 7.30/23'11" |
| T Bucket opening width | mm/ft in | 1,650/ 5' 5" |

Forces

| | | |
|---|--------|-------------|
| Max. crowd force | kN/lbf | 500/112,410 |
| Max. crowd force at ground level | kN/lbf | 410/ 92,170 |
| Max. breakout force | kN/lbf | 370/ 83,180 |

Operating Weight and Ground Pressure

The operating weight includes the basic machine with cab elevation 800 mm/2'7", shovel equipment SME and front shovel 4.50 m³/5.88 yd³ (7,200 kg/15,870 lb), level II.

| Undercarriage | | S-HD | | |
|------------------------|-------------------------|----------------|----------------|----------------|
| Pad width | mm/in | 500/20" | 600/24" | 750/30" |
| Weight | kg/lb | 79,100/174,390 | 79,900/176,150 | 81,000/178,570 |
| Ground pressure | kg/cm ² /psi | 1.55/22.0 | 1.31/18.6 | 1.06/15.1 |

Front Shovels

| Cutting width | Capacity ISO 7451 | Weight | Wear kit level | S-HD-Undercarriage | |
|---------------|-------------------|---------------|----------------|--------------------|---|
| | | | | Shovel equipment | |
| mm | m ³ | kg | | | |
| in | yd ³ | lb | | | |
| 2,600 | 4.00 | 7,900 | III | | ▲ |
| 102" | 5.23 | 17,420 | | | ■ |
| 2,600 | 4.50 | 6,700 | I | | ■ |
| 102" | 5.88 | 14,770 | | | ■ |
| 2,600 | 4.50 | 7,200 | II | | ■ |
| 102" | 5.88 | 15,870 | | | ■ |
| 2,600 | 4.50 | 7,800 | III | | ■ |
| 102" | 5.88 | 17,200 | | | ■ |
| 2,600 | 5.00 | 6,800 | I | | ▲ |
| 102" | 6.54 | 14,990 | | | ▲ |
| 2,600 | 5.00 | 7,500 | II | | ▲ |
| 102" | 6.54 | 16,540 | | | ▲ |

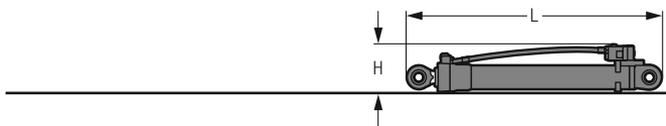
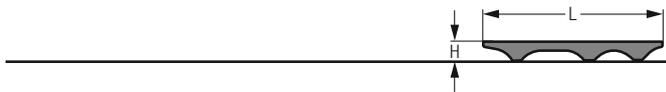
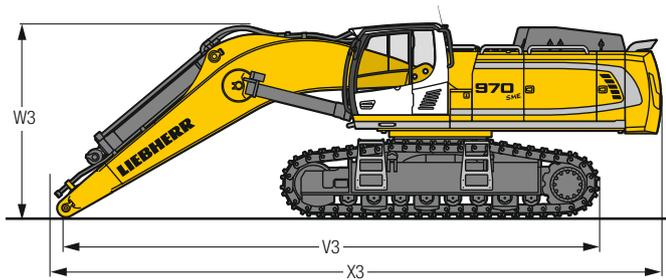
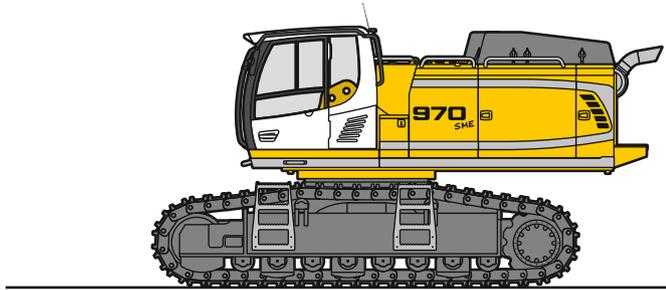
Level I: For non-abrasive materials, such as limestone without flint inclusion, shot material or easily breakable rock, i.e., deteriorated rock, soft limestone, shale, etc.

Level II: For pre-blasted heavy rock, or deteriorated, cracked material (classification 3 to 4, according to DIN 18300)

Level III: For highly-abrasive materials such as rock with a high silica content, sandstone etc.

Max. material weight ▲ = ≤ 2.0 t/m³/3,400 lb/yd³, ■ = ≤ 1.8 t/m³/3,000 lb/yd³, ▲ = ≤ 1.65 t/m³/2,800 lb/yd³

Dimensions and Weights



Basic Machine

| Track pads | mm/ft in | 500/20" | 600/24" | 750/30" |
|--|----------|----------------|----------------|----------------|
| Weight with backhoe equipment and S-HD-undercarriage without counterweight | kg/lb | 46,200/101,850 | 46,950/103,510 | 48,050/105,930 |
| Weight with shovel equipment and S-HD-undercarriage without counterweight | kg/lb | 46,200/101,850 | 46,950/103,510 | 48,050/105,930 |

Machine without Stick

| | | |
|----|----------|--------------|
| V3 | mm/ft in | 10,050/33' |
| W3 | mm/ft in | 3,650/12' |
| X3 | mm/ft in | 11,450/37'7" |

Cab Elevation

| | | 800 mm/2'7" |
|----------|----------|-------------|
| L Length | mm/ft in | 1,890/6'2" |
| H Height | mm/ft in | 930/3'1" |
| Width | mm/ft in | 1,370/4'6" |
| Weight | kg/lb | 600/1,320 |

Counterweight

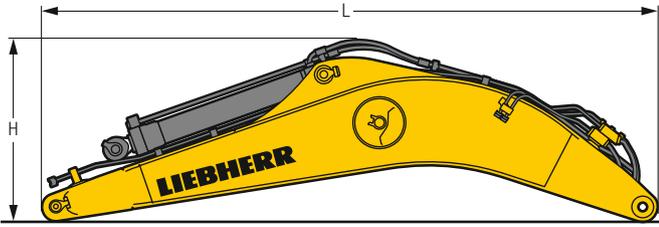
| | | |
|----------|----------|---------------|
| L Length | mm/ft in | 770/ 2'6" |
| H Height | mm/ft in | 1,550/ 5'1" |
| Width | mm/ft in | 3,360/11' |
| Weight | kg/lb | 14,500/31,970 |

Upper Protection Screen

| | | |
|----------|----------|------------|
| L Length | mm/ft in | 1,960/6'5" |
| H Height | mm/ft in | 190/ 7" |
| Width | mm/ft in | 1,110/3'8" |
| Weight | kg/lb | 75/170 |

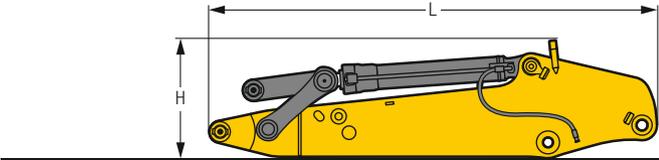
Hoist Cylinders (two)

| | | |
|----------|----------|-------------------|
| L Length | mm/ft in | 2,650/8'8" |
| H Height | mm/ft in | 490/1'7" |
| Width | mm/ft in | 360/1'2" |
| Weight | kg/lb | 2 x 750/2 x 1,650 |



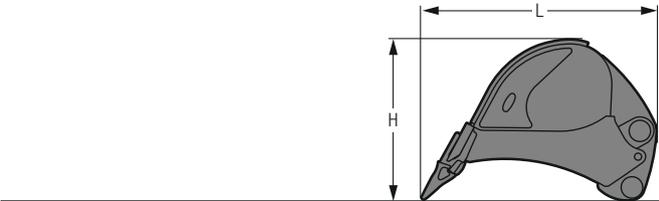
Mono Boom with Stick Cylinder

| | | |
|-------------|----------|--------------|
| Boom length | m/ft in | 7.00/23' |
| L Length | mm/ft in | 7,350/24'1" |
| H Height | mm/ft in | 2,250/ 7'5" |
| Width | mm/ft in | 1,450/ 4'9" |
| Weight | kg/lb | 7,350/16,200 |



Stick with Bucket Cylinder

| | | | |
|--------------|----------|-------------|--------------|
| Stick length | m/ft in | 2.60/ 8'6" | 3.00/ 9'10" |
| L Length | mm/ft in | 4,000/13'1" | 4,400/14' 5" |
| H Height | mm/ft in | 1,350/ 4'5" | 1,350/ 4' 5" |
| Width | mm/ft in | 950/ 3'1" | 950/ 3' 1" |
| Weight | kg/lb | 3,900/8,600 | 4,150/9,150 |

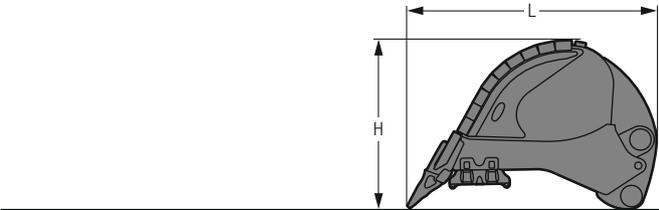


Backhoe Buckets

HD

| | | | | | |
|---------------|----------|--------------|--------------|--------------|--------------|
| Cutting width | mm/in | 2,200/87" | 2,300/91" | 2,200*/87" | 2,300*/91" |
| Capacity | m³/yd³ | 4.50/5.88 | 5.00/6.54 | 4.50/5.88 | 5.00/6.54 |
| L Length | mm/ft in | 2,650/8' 8" | 2,650/8' 8" | 2,750/9' | 2,750/9' |
| H Height | mm/ft in | 1,800/5'11" | 1,800/5'11" | 1,850/6'1" | 1,850/6'1" |
| Width | mm/ft in | 2,250/7' 5" | 2,350/7' 9" | 2,250/7'5" | 2,350/7'9" |
| Weight | kg/lb | 4,850/10,690 | 5,050/11,130 | 4,950/10,910 | 5,200/11,460 |

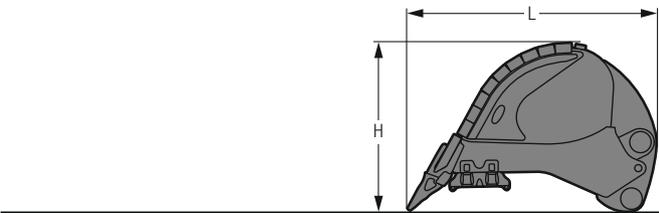
* with delta cutting edge



Backhoe Buckets

HDV

| | | | | |
|---------------|----------|--------------|--------------|--------------|
| Cutting width | mm/in | 2,000/79" | 2,200/87" | 2,300/91" |
| Capacity | m³/yd³ | 4.00/5.23 | 4.50/5.88 | 5.00/6.54 |
| L Length | mm/ft in | 2,650/8' 8" | 2,650/8' 8" | 2,650/8' 8" |
| H Height | mm/ft in | 1,800/5'11" | 1,800/5'11" | 1,800/5'11" |
| Width | mm/ft in | 2,050/6' 9" | 2,250/7' 5" | 2,350/7' 9" |
| Weight | kg/lb | 5,000/11,020 | 5,350/11,800 | 5,600/12,350 |



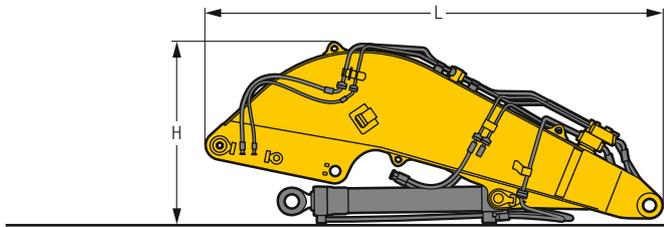
Backhoe Buckets

HDV

| | | | | |
|---------------|----------|--------------|--------------|--------------|
| Cutting width | mm/in | 2,000*/79" | 2,200*/87" | 2,300*/91" |
| Capacity | m³/yd³ | 4.00/5.23 | 4.50/5.88 | 5.00/6.54 |
| L Length | mm/ft in | 2,750/9' | 2,750/9' | 2,750/9' |
| H Height | mm/ft in | 1,850/6'1" | 1,850/6'1" | 1,850/6'1" |
| Width | mm/ft in | 2,050/6'9" | 2,250/7'5" | 2,350/7'9" |
| Weight | kg/lb | 5,100/11,240 | 5,450/12,020 | 5,700/12,570 |

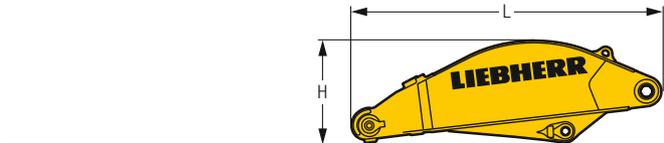
* with delta cutting edge

Dimensions and Weights



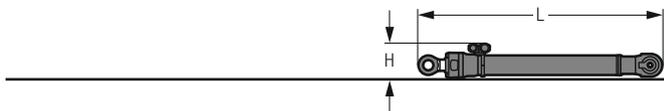
Shovel Boom

| | | |
|-------------------------------|----------|--------------|
| L Length | mm/ft in | 4,750/15'7" |
| H Height | mm/ft in | 1,950/6'5" |
| Width | mm/ft in | 1,900/6'3" |
| Weight without crowd cylinder | kg/lb | 5,050/11,130 |
| Weight crowd cylinder | kg/lb | 650/1,430 |



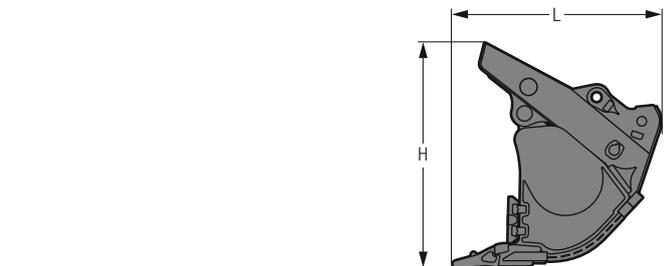
Shovel Stick

| | | |
|----------|----------|--------------|
| L Length | mm/ft in | 3,250/10' 8" |
| H Height | mm/ft in | 1,100/3' 7" |
| Width | mm/ft in | 1,500/4'11" |
| Weight | kg/lb | 2,500/5,510 |



Shovel Bucket Cylinders (two)

| | | |
|----------|----------|-----------------|
| L Length | mm/ft in | 2,550/8'4" |
| H Height | mm/ft in | 350/1'2" |
| Width | mm/ft in | 500/1'8" |
| Weight | kg/lb | 2 x 400/2 x 880 |



Front Shovels

| | | | | |
|---------------|---------------------------------|--------------|--------------|--------------|
| Cutting width | mm/in | 2,600/102" | 2,600/102" | 2,600/102" |
| Capacity | m ³ /yd ³ | 4.00/5.23 | 4.50/5.88 | 5.00/6.54 |
| L Length | mm/ft in | 2,200/7' 3" | 2,200/7' 3" | 2,300/7'7" |
| H Height | mm/ft in | 2,400/7'10" | 2,400/7'10" | 2,500/8'2" |
| Width | mm/ft in | 2,650/8' 8" | 2,650/8' 8" | 2,650/8' 8" |
| Weight | | | | |
| Level I | kg/lb | – | 6,700/14,770 | 6,800/14,990 |
| Level II | kg/lb | – | 7,200/15,870 | 7,500/16,540 |
| Level III | kg/lb | 7,900/17,420 | 7,800/17,200 | – |

Serial Equipment

Undercarriage

- Lashing eyes
- Sprocket with dirt ejector
- Track and carrier rollers, sealed and lifetime-lubricated
- Travel motor housing protection
- Undercarriage S-HD

Uppercarriage

- Access platforms without protruding parts
- Anti-skid surfaces
- Automatic swing brake lock
- Centralized lubrication system (automatic)
- Counterweight heavy 14.5 t / **31,970 lb**
- DEF tank lockable access hatch
- Engine hood with gas spring opening
- Extended tool set including tool box
- Handrails
- Lockable fuel tank cap with padlock
- Lockable service doors
- Lockable storage box
- Main switch, accessible from ground level
- Pre-heating system for fuel
- Protection grid on radiator fan
- Sound insulation
- Swing-out radiators
- Windshield washer fluid tank

Hydraulic System

- Dedicated swing circuit
- Filter with integrated fine filters
- Hydraulic pressure measuring ports
- Hydraulic tank shut-off valve
- Magnetic rod
- Pressure accumulator for controlled lowering of equipment with engine turned off

Engine

- Air filter with automatic dust ejector
- Automatic engine idling / speed increase, controlled via joystick sensors
- Common-Rail injection system
- Exhaust gas after-treatment system – SCR
- Fixed geometry turbocharger
- Fuel fine filter
- Fuel pre-filter and water separator
- Fuel priming pump
- Intercooler
- Power Pack US EPA Tier 4 Final
- Stepless adjustable engine speed

Operator's Cab

- 7" multifunction color touchscreen
- Air conditioning, automatic, tri-zone, controlled via display
- Armrests adjustable in width, height and inclination
- Bottle holder
- Cab door sliding windows
- Cigarette lighter
- Coat hook
- DEF consumption on touchscreen
- DEF level on touchscreen
- Electric socket in cabin (12 V)
- Electric socket in cabin (24 V)
- Emergency hammer
- Engine oil level on touchscreen
- Footrest
- Fuel consumption on touchscreen
- Fuel level on touchscreen
- Impact resistant roof window
- Impact resistant two-piece windshield
- Interior lighting
- Laminated right hand side window
- LIDAT Plus (Liebherr data transfer system)*
- Movement priority between swing and boom, adjustable via touchscreen
- Rain hood over front window opening
- Rearview mirror
- Rear view monitoring camera
- Rear window emergency exit
- Right hand side view monitoring camera
- Roll-down sun blinds for windshield and roof window
- Rubber floor mat, fixed on floor and removable
- Storage box
- Storage nets
- Storage spaces
- Tilttable console left
- Tinted windows
- Visco-elastic damping
- Windscreen wiper and washer
- Work mode selector

Equipment

- Anti-drift system boom cylinders
- Anti-drift system stick cylinder
- Boom bottom protection
- Boom cylinders regeneration
- Pivot points made of cast steel
- SAE split flanges on high pressure lines
- Stick bottom protection
- Stick cylinder regeneration

* optionally extendable after one year

Equipment Standard/Option

Undercarriage

| | |
|--|---|
| Chain guide 3 pieces | • |
| Chain guide 4 pieces | + |
| Reinforced cover and base plate for undercarriage center section | + |
| Special painting | + |
| Track pads double grouser 500 mm/20", chamfered | + |
| Track pads double grouser 600 mm/24", chamfered | • |
| Track pads double grouser 750 mm/30", chamfered | + |
| Travel drive gearbox protection | + |
| Undercarriage protection plate for drop-ball application | + |

Uppercarriage

| | |
|--|-----------------|
| Air pre-filter with cyclonical dust trap | + |
| Boxing ring | + |
| Catwalks left and right | • |
| Catwalk wide with railing | + |
| Electric socket on uppercarriage (24 V) | + |
| Filter for hydraulic hammer return flow | + |
| Fixed cab riser 800 mm/2'7" | + |
| Headlight on uppercarriage, lateral left, LED+, 1 piece | + ¹⁾ |
| Headlight on uppercarriage, lateral right, LED+, 1 piece | + ¹⁾ |
| Headlights on uppercarriage, front, LED, 2 pieces, protections included | + ¹⁾ |
| Headlights on uppercarriage, front, LED+, 2 pieces, protections included | + ¹⁾ |
| Headlights on uppercarriage, rear, LED+, 2 pieces | + ¹⁾ |
| Lighting for tank area ¹⁾ | + |
| Lighting for uppercarriage access ¹⁾ | + |
| Motorized tiltable access ladder | + |
| Radiator fine mesh protection grid | + |
| Reversible fan drive | + |
| Skyview 360° | + |
| Special painting | + |
| Swing ring and lubrication hoses protection | + |
| Tank refilling pump fuel | + |
| Wiggins coupling for fuel | + |

Hydraulic System

| | |
|--|---|
| Bypass filter for hydraulic oil | + |
| Liebherr hydraulic oil | • |
| Liebherr hydraulic oil, adapted for extreme climate conditions | + |
| Liebherr hydraulic oil, biodegradable | + |

Engine

| | |
|---|---|
| Automatic engine shutdown after idling | + |
| Engine shut-down with overrun | + |
| Lighting for engine compartment ¹⁾ | + |

Operator's Cab

| | |
|--|-----------------|
| 3" seat belt with retractor, orange color | • |
| 4-points seat belt | + |
| Acoustic travel alarm deactivatable | + |
| Auxiliary heater programmable | + |
| Bottom windscreen wiper | + |
| Cool box (12 V) | + |
| Dark tinted windows | + |
| Electrically adjustable and heated outside rear-view mirrors | + |
| Electronic immobilizer | + |
| Emergency stop in cab | + |
| FGPS front guard tiltable | + |
| Fire extinguisher | + |
| First-aid box | + |
| Follow me home | + |
| FOPS top guard | + |
| Handrests elevated for joysticks | + |
| Headlights on cab, front, LED, 2 pieces | • ¹⁾ |
| Headlights on cab, front, LED+, 2 pieces | + ¹⁾ |
| Headlights on cab roof, front, LED+, 2 pieces | + ¹⁾ |
| High pressure circuit switchable on pedals or mini-joystick | + |
| High pressure circuit with Tool Control (20 attachment adjustments on display) | + |
| Lighting for cabin access ¹⁾ | + |
| Luminosity control (LED+ headlights) ¹⁾ | + |
| Medium pressure circuit | + |
| Mini-joysticks proportional | + |
| Operator seat Comfort | • |
| Operator seat Premium | + |
| Overload warning system | + |
| Radio Comfort | + |
| Radio pre-installation | • |
| Roof sun shield | + |
| Roof window wiper | + |
| Rotating beacon on cabin, LED, 1 piece | + |
| Shortcut button on joystick configurable | • |
| Special painting | + |
| Sun visor | + |

Equipment

| | |
|--|-----------------|
| Boom cylinder rods protection | + |
| Bucket cylinder rod protection | + |
| Centralized lubrication extended for connecting link | + |
| Floating boom | + |
| Headlights on boom, LED, 2 pieces, protections included | + ¹⁾ |
| Headlights on boom, LED+, 2 pieces, protections included | + ¹⁾ |
| Mono boom SME 7.00 m/23' | + |
| Pipe fracture safety valve for stick cylinder | + |
| Pipe fracture safety valves for boom cylinders | + |
| Preparation for ripper tooth | + |
| Shovel boom 4.50 m/14'9" | + |
| Shovel stick 2.90 m/9'6" | + |
| Special painting | + |
| Stick SME 2.60 m/8'6" | + |
| Stick SME 3.00 m/9'10" | + |

• = Standard, + = Option

¹⁾ Equipment not individually available, but only as predefined lighting packages
Non-exhaustive list, please contact us for further information.

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.

The Liebherr Group of Companies



Diverse Product Range

The Liebherr Group is one of the largest construction equipment manufacturers in the world. Liebherr's quality products and services hold a high reputation in many industries. The wide range includes domestic appliances, aerospace and transportation systems, machine tools and maritime cranes.

Exceptional Customer Benefit

Every product line provides a complete range of models in many different versions. With both their technical excellence and superior quality, Liebherr products offer customers the highest benefits in practical applications.

State-of-the-art Technology

Liebherr attributes great importance to the product areas of core technology and components, in order to achieve its consistent, top-quality products. Important modules and components are developed and manufactured in-house, for instance, the entire drive and control technology for the construction equipment and mining trucks.

Worldwide and Family-Owned

Hans Liebherr founded the Liebherr family company in 1949. Since that time, the enterprise has steadily grown to a group of more than 130 companies with more than 46,000 employees located on all continents. The corporate headquarters of the Group is Liebherr-International AG in Bulle, Switzerland. The Liebherr family is the sole owner of the company.

www.liebherr.us

Liebherr USA, Co.

Construction Equipment Division
4100 Chestnut Avenue, Newport News, VA 23607, USA
☎ +1 (757) 245 5251, Fax +1 (757) 928 8701
www.liebherr.us, E-Mail: Construction.USA@liebherr.com
www.facebook.com/LiebherrConstruction