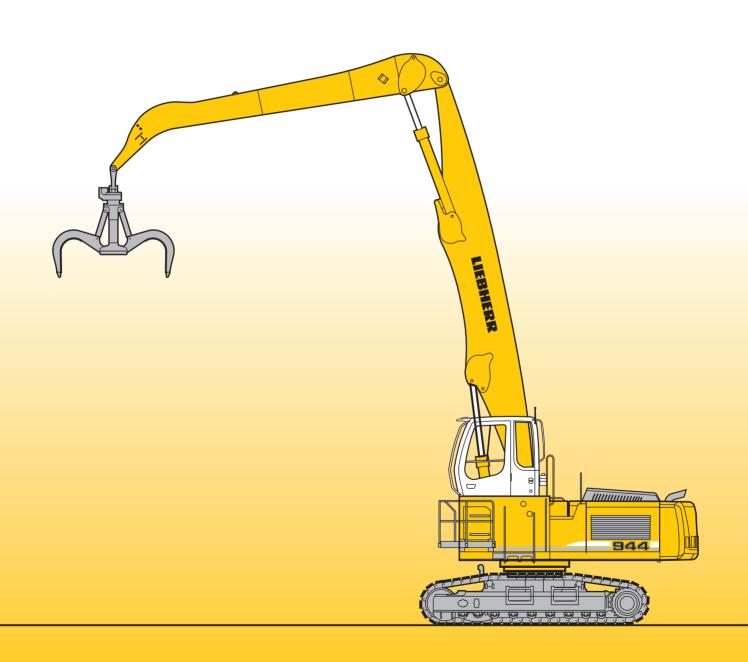
# **Technical Description Hydraulic Excavator**



### **Machine for Industrial Applications**

Operating Weight 101,604-103,808 lb Engine Output 258 hp (190 kW)



# LIEBHERR

### **Technical Data**



#### **Engine**

| Rating per ISO 9249<br>Model | 258 hp (190 kW) at 1800 RPM<br>Liebherr D 936 L   |
|------------------------------|---|
| Type                         | 6 cylinder in-line  |
| Bore/Stroke                  | 4.8/6.1 in  |
| Displacement                 | 641 in <sup>3</sup>   |
| Engine operation             | 4-stroke diesel   |
|                              | unit pump system  |
|                              | turbo-charged and after-cooled  |
|                              | reduced emissions   |
| Cooling                      | water-cooled and integrated motor oil cooler  |
| Air cleaner                  | dry-type air cleaner with pre-cleaner, primary and<br>safety elements, automatic dust discharge |
| Fuel tank                    | 174 gal   |
| Standard                     | sensor controlled engine idling   |
| Electrical system            | ů ů   |
| Voltage                      | 24 V  |
| Batteries                    | 2 x 170 Ah/12 V   |
| Starter                      | 24 V/6.6 kW   |
| Alternator                   | three phase current 28 V/80 A   |
|                              |   |



### **Hydraulic System**

| Max. flow<br>Max. pressure |  |
|----------------------------|--|
| Hydraulic pump             | ,,   |
|                            | reversible, variable flow, swash plate pump, closed-loop circuit   |
| Max. flow                  | _54 gpm  |
| Max. pressure              | _5800 PSI  |
| Hydraulic tank             |  |
| Hydraulic system           | _187 gal   |
| Hydraulic oil filter       | _2 full flow filters in return line with integrated fine   |
|                            | filter area (5 μm)   |
| Hydraulic oil cooler       | cooler unit, consisting of radiator for engine coolant with after-cooler core, for hydraulic fluid with hydrostatically controlled fan drive |
| MODE selection             | _ adjustment of machine performance and the hydraulics via a mode selector to match application  |
| ECO                        | for economical and environmentally friendly operation  |
| POWER                      | for maximum digging power and heavy duty jobs  |
| LIFT                       |  |
|                            | for precision work and lifting   |
|                            | _ stepless adjustment of engine output via rpm at each selected mode   |
| Liebherr Tool Control      | ten preadjustable pump flows and pressures for add on tools (option)   |



### **Hydraulic Controls**

| Power distributionvia monoblock control valve with integrated safety valves         |
|---|
| Flow summation to boom and stick  |
| Closed-loop circuit for uppercarriage swing drive                                   |
| Servo circuit   |
| Attachment and swing proportional via joystick levers                               |
| Travel – proportional via foot pedals or removable hand levers                      |
| - speed pre-selection Additional functionsvia foot pedals or joystick toggle switch |



| Drive by      | _ Liebherr swash plate motor                         |
|---------------|--|
| Transmission  | _ Liebherr compact planetary reduction gear          |
| Swing ring    | Liebherr, sealed single race ball bearing swing      |
|               | ring, internal teeth                                 |
| Swing speed   | _0-8 RPM stepless                                    |
| Swing torque  | _92,275 lb   |
| Holding brake | _ wet multi-disc (spring applied, pressure released) |
| Option        | _ pedal controlled positioning brake                 |



| Cab             | <ul> <li>built from deep drawn components, resiliently<br/>mounted, sound insulated, tinted windows, front<br/>window stores overhead, door with sliding<br/>window</li> </ul>  |
|-----------------|---|
| Operator's seat | shock absorbing suspension, adjustable to operator's weight, 6-way adjustable seat  |
| Joysticks       | integrated into adjustable seat consoles  |
| Monitoring      | menu driven query of current operating condi-<br>tions via the LCD display. Automatic monitoring,<br>display, warning (acoustical and optical signal)<br>and saving machine malfunction data, for exam-<br>ple, engine overheating, low engine oil pressure<br>or low hydraulic oil level |
| Heating system  | standard air conditioning, combined cooler/<br>heater, additional dust filter in fresh air/recircu-<br>lated  |
| Noise emission  |   |
| ISO 6396        | $L_{pA}$ (inside cab) = 75 dB(A)  |
| 2000/14/EC      | L <sub>WA</sub> (surround noise) = 105 dB(A)  |



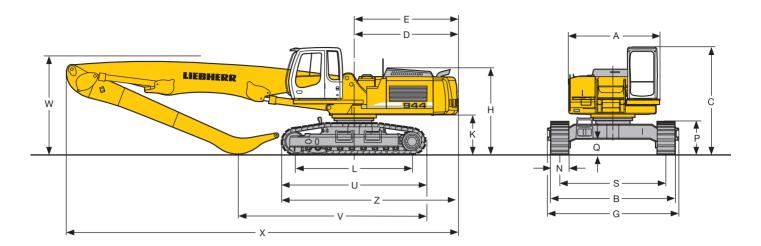
### **Undercarriage**

| Version EW                    | special duty, extra wide gauge              |
|-------------------------------|---|
| Drive                         | Liebherr swash plate motors with integrated |
|                               | brake valves on both sides                  |
| Transmission                  | Liebherr planetary reduction gears          |
| Travel speed                  | low range -2.0 mph                          |
|                               | high range – 3.1 mph                        |
| Drawbar pull max              | _ 75,533 lb                                 |
| Track components              | D 7, maintenance-free                       |
| Track rollers/Carrier rollers | _9/2  |
| Tracks                        | sealed and greased                          |
| Track pads                    | _triple grouser                             |
| Digging locks                 | wet multi-discs (spring applied, pressure   |
|                               | released)                                   |
| Brake valves                  | integrated into travel motor                |



| Туре                | high-strength steel plates at 3 high-stress points for the toughest requirements. Complex and stable mountings of attachment and cylinders. |
|---------------------|---|
| Hydraulic cylinders | Unrivalled strength, even at high loads Liebherr cylinders with special seal system. Shock absorption                                       |
| Pivots              | sealed, low maintenance Liebherr semi-automatic central lubrication system  |

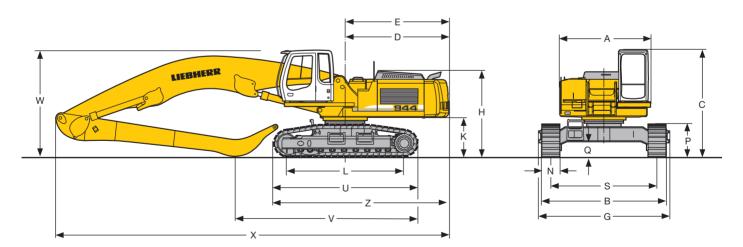
### **Dimensions**



|   |                                 |        |        | ft in  |  |  |  |  |  |  |  |  |  |  |
|---|---------------------------------|--------|--------|--------|--|--|--|--|--|--|--|--|--|--|
| Α | Upper – overall width           |        |        | 10' 1" |  |  |  |  |  |  |  |  |  |  |
| С | Basic machine – height overall  |        |        |        |  |  |  |  |  |  |  |  |  |  |
| D | Tail reach                      |        |        |        |  |  |  |  |  |  |  |  |  |  |
| Е | Tail swing                      |        |        | 11' 7" |  |  |  |  |  |  |  |  |  |  |
| Н | Height – engine hood            |        |        | 9' 6"  |  |  |  |  |  |  |  |  |  |  |
| K | Clearance under counterweight   |        |        | 4' 4"  |  |  |  |  |  |  |  |  |  |  |
| L | Center idler to center sprocket |        |        |        |  |  |  |  |  |  |  |  |  |  |
| Р | Track height                    |        |        | 3' 8"  |  |  |  |  |  |  |  |  |  |  |
| Q | Ground clearance                |        |        | 21"    |  |  |  |  |  |  |  |  |  |  |
| S | Track gauge                     |        |        | 11'10" |  |  |  |  |  |  |  |  |  |  |
| U | Track length                    |        |        | 16' 2" |  |  |  |  |  |  |  |  |  |  |
| Ν | Pad width                       | 20"    | 24"    | 30"    |  |  |  |  |  |  |  |  |  |  |
| В | Track outside width             | 13' 9" | 13' 9" | 14' 3" |  |  |  |  |  |  |  |  |  |  |
| G | Undercarriage width overall     | 14' 6" | 14' 6" | 14' 6" |  |  |  |  |  |  |  |  |  |  |
| Z | Length track to counterweight   |        |        | 19' 7" |  |  |  |  |  |  |  |  |  |  |

|                                      | ustrial-Type Straight Boom 31′2″<br>  Industrial Stick 23′11″ |       |     |    |  |  |  |  |  |  |  |
|--------------------------------------|---|-------|-----|----|--|--|--|--|--|--|--|
| V                                    |   | ft in | 21' | 4" |  |  |  |  |  |  |  |
| W                                    |   | ft in | 11' |    |  |  |  |  |  |  |  |
| X                                    |   | ft in | 44' | 3" |  |  |  |  |  |  |  |
|                                      |   |       |     |    |  |  |  |  |  |  |  |
| Industrial-Type Gooseneck Boom 31'2" |   |       |     |    |  |  |  |  |  |  |  |
| and                                  | Industrial Stick 23'11"                                       |       |     |    |  |  |  |  |  |  |  |
| \/                                   |   | ft in | 20' | 4" |  |  |  |  |  |  |  |

E = Tail radius



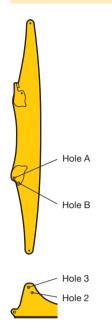
These dimensions are stated with cab carrier. This assembly is only valid for transportation.

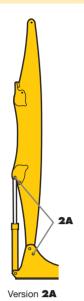
11'10"

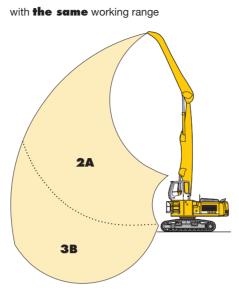
ft in ft in 44'

### **VarioLift**Plus

### **Variable Boom Mounting Positions for Optimised Lift Capacities**







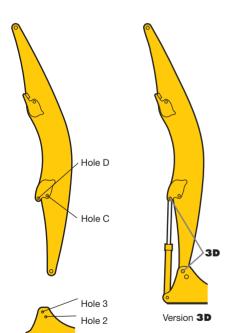
with a **different** working range

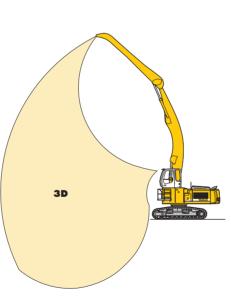
**Kinematic variant 2A:** Increased lift capacities above ground level **Kinematic variant 3B:** 

Increased lift capacities below ground level and when working at extended reach

**Kinematic variant 3A:** Altered range curve with additional reach depth, e.g. for unloading from ships

with a different working range



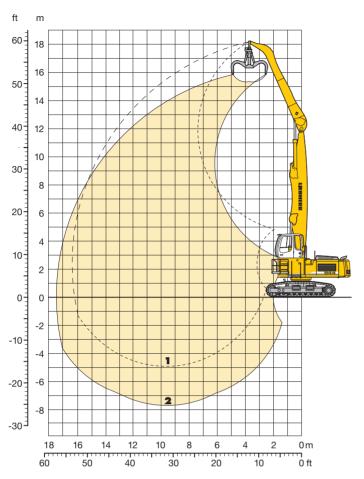


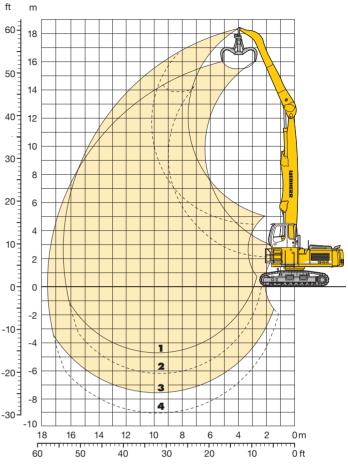
**Kinematic variant 3D:** Increased lift capacities below ground level and when working at extended reach

**Kinematic variant 3C:** Altered range curve with additional reach depth, e.g. for unloading from ships

### **Industrial Attachment**

with Industrial-Type Straight Boom 31'2"





#### **Attachment Envelope**

Kinematic variant 2A

- 1 with industrial stick 23'11"
- 2 with industrial stick 23'11" and grapple model 70 C

#### **Operating Weight** and Ground Pressure

Operating weight includes basic machine with rigid cab elevation 3'11" and counterweight 24,244 lb, industrial-type straight boom 31'2", industrial stick 23'11" and grapple model 70 C with 5 semiclosed tines 1.05 yd3.

| Undercarriage   | EW  |         |         |  |
|-----------------|-----|---------|---------|--|
| Pad width       | in  | 24"     | 30"     |  |
| Weight          | lb  | 101,631 | 102,954 |  |
| Ground pressure | PSI | 12.7    | 10.2    |  |

### **Attachment Envelope**

Kinematic variants 3A/3B

- with industrial stick 23'11" (3B)
- 2 with industrial stick 23'11" (3A)
- 3 with industrial stick 23'11" and grapple model 70 C (3B)
- 4 with industrial stick 23'11" and grapple model 70 C (3A)

### **Lift Capacities**

with Industrial-Type Straight Boom 31'2"

| Industrial Stick 23'11" (Variant 2A) |                    |               |          |          |          |           |          |            |          |          |          |           |        |                |          |           |          |           |          |        |
|--------------------------------------|--------------------|---------------|----------|----------|----------|-----------|----------|------------|----------|----------|----------|-----------|--------|----------------|----------|-----------|----------|-----------|----------|--------|
| . 6                                  |                    | 15            | ift      | 20       | ft       | 25        | ft       | 30         | ) ft     | 35       | ft       | 40        | ft     | 45             | ft       | 50        | ft       |           |          |        |
| 1,                                   | Under-<br>carriage | <del>-4</del> | <u>L</u> | <b>∰</b> | <u>L</u> | <b></b> ∰ | <u>L</u> | <u></u> 30 | <u>L</u> | <b>∰</b> | <u>L</u> | <b></b> ∰ | d.     | <del>-</del> - | <u>L</u> | <b></b> ∰ | <u>L</u> | <b></b> ∰ | <u>_</u> | ft in  |
| 60                                   | EW                 | 27,770*       | 27,770*  |          |          |           |          |            |          |          |          |           |        |                |          |           |          | 27,770*   | 27,770*  | 14'10" |
| 55                                   | EW                 |               |          | 27,330*  | 27,330*  | 22,922*   | 22,922*  |            |          |          |          |           |        |                |          |           |          | 20,277*   | 20,277*  | 26' 7" |
| 50                                   | EW                 |               |          |          |          | 26,228*   | 26,228*  | 22,922*    | 22,922*  |          |          |           |        |                |          |           |          | 17,632*   | 17,632*  | 33'10" |
| 45                                   | EW                 |               |          |          |          | 25,566*   | 25,566*  | 22,481*    | 22,481*  | 19,395   | 20,056*  |           |        |                |          |           |          | 14,987    | 15,869   | 39' 1" |
| 40                                   | EW                 |               |          |          |          | 25,346*   | 25,346*  | 22,260*    | 22,260*  | 19,836*  | 19,836*  | 15,428    | 16,089 |                |          |           |          | 12,563    | 13,224   | 43' 2" |
| 35                                   | EW                 |               |          |          |          | 25,566*   | 25,566*  | 22,260*    | 22,260*  | 19,616   | 19,616*  | 15,428    | 16,089 | 12,122         | 12,783   |           |          | 11,020    | 11,461   | 46' 5" |
| 30                                   | EW                 |               |          |          |          | 26,007*   | 26,007*  | 22,481*    | 22,481*  | 19,395   | 19,836   | 15,208    | 16,089 | 12,122         | 12,783   |           |          | 9,918     | 10,359   | 48'11" |
| 25                                   | EW                 |               |          | 31,517*  | 31,517*  | 26,668*   | 26,668*  | 22,922*    | 22,922*  | 18,734   | 19,836   | 14,767    | 15,648 | 11,902         | 12,563   | 9,698     | 10,138   | 9,036     | 9,477    | 50'10" |
| 20                                   | EW                 | 30,856*       | 30,856*  | 33,721*  | 33,721*  | 27,770*   | 27,770*  | 23,362     | 23,583*  | 18,073   | 18,954   | 14,326    | 15,208 | 11,681         | 12,342   | 9,477     | 10,138   | 8,375     | 9,036    | 52' 2" |
| 15                                   | EW                 | 47,386*       | 47,386*  | 35,705*  | 35,705*  | 28,652*   | 28,652*  | 22,040     | 23,142   | 17,191   | 18,073   | 13,885    | 14,546 | 11,240         | 11,902   | 9,257     | 9,918    | 7,934     | 8,596    | 53' 1" |
| 10                                   | EW                 | 50,251*       | 50,251*  | 37,027*  | 37,027*  | 27,109    | 28,652   | 20,497     | 21,820   | 16,310   | 17,191   | 13,224    | 13,885 | 10,800         | 11,461   | 9,036     | 9,698    | 7,714     | 8,375    | 53' 6" |
| 5                                    | EW                 | 16,530*       | 16,530*  | 34,382   | 36,807   | 24,905    | 26,668   | 19,175     | 20,497   | 15,428   | 16,310   | 12,563    | 13,224 | 10,359         | 11,020   | 8,816     | 9,477    | 7,714     | 8,155    | 53' 5" |
| 0                                    | EW                 | 13,885*       | 13,885*  | 31,958   | 34,162   | 23,362    | 24,905   | 18,073     | 19,175   | 14,546   | 15,428   | 12,122    | 12,783 | 10,138         | 10,800   | 8,596     | 9,257    | 7,714     | 8,155    | 52'11" |
| - 5                                  | EW                 | 15,428*       | 15,428*  | 30,415   | 30,636*  | 22,260    | 23,803   | 17,412     | 18,514   | 14,106   | 14,987   | 11,681    | 12,342 | 9,918          | 10,579   | 8,596     | 9,036    | 7,494*    | 7,494*   | 51' 9" |
| -10                                  | EW                 |               |          | 26,007*  | 26,007*  | 21,599    | 22,260*  | 16,750     | 18,073   | 13,665   | 14,546   | 11,461    | 12,122 | 9,698          | 10,138*  |           |          | 8,155*    | 8,155*   | 47' 7" |
| - 15                                 | EW                 |               |          |          |          | 17,632*   | 17,632*  | 15,208*    | 15,208*  | 12,563*  | 12,563*  |           |        |                |          |           |          | 10,138*   | 10,138*  | 39' 4" |
| -20                                  | EW                 |               |          |          |          |           |          |            |          |          |          |           |        |                |          |           |          |           |          |        |
| -25                                  | EW                 |               |          |          |          |           |          |            |          |          |          |           |        |                |          |           |          |           |          |        |

| Industrial Stick 23'11" (Variant 3A) |                    |           |          |          |          |             |          |         |          |          |          |           |          |               |          |          |          |          |          |        |
|--------------------------------------|--------------------|-----------|----------|----------|----------|-------------|----------|---------|----------|----------|----------|-----------|----------|---------------|----------|----------|----------|----------|----------|--------|
| . 6                                  |                    | 1 5       | ift      | 20       | ) ft     | 25          | i ft     | 30      | ) ft     | 35       | ft       | 40        | ft       | 45            | ft       | 50       | ) ft     |          |          |        |
| 1,5                                  | Under-<br>carriage | <u></u> ∰ | <u>L</u> | <u>⊶</u> | <u>L</u> | <b>-</b> -∰ | <u>L</u> | <u></u> | <u>L</u> | <u>⊶</u> | <u>L</u> | <b></b> ∰ | <u>L</u> | <del>-4</del> | <u>L</u> | <u>⊶</u> | <u>L</u> | <u>⊶</u> | <u>L</u> | ft in  |
| 60                                   | EW                 |           |          |          |          |             |          |         |          |          |          |           |          |               |          |          |          |          |          |        |
| 55                                   | EW                 |           |          |          |          |             |          |         |          |          |          |           |          |               |          |          |          |          |          |        |
| 50                                   | EW                 |           |          |          |          |             |          |         |          | 18,514*  | 18,514*  |           |          |               |          |          |          | 17,412*  | 17,412*  | 35' 1" |
| 45                                   | EW                 |           |          |          |          |             |          |         |          | 18,293*  | 18,293*  | 14,987    | 15,648   |               |          |          |          | 14,326   | 14,987   | 40' 2" |
| 40                                   | EW                 |           |          |          |          |             |          |         |          | 18,073*  | 18,073*  | 15,208    | 16,089   |               |          |          |          | 11,902   | 12,563   | 44' 2" |
| 35                                   | EW                 |           |          |          |          |             |          |         |          | 18,073*  | 18,073*  | 15,208    | 16,089   | 12,122        | 12,783   |          |          | 10,579   | 11,020   | 47' 3" |
| 30                                   | EW                 |           |          |          |          |             |          |         |          | 18,514*  | 18,514*  | 14,987    | 16,089   | 12,122        | 12,783   | 9,698    | 10,138   | 9,477    | 9,918    | 49' 8" |
| 25                                   | EW                 |           |          |          |          |             |          | 21,158* | 21,158*  | 18,514   | 18,954*  | 14,767    | 15,428   | 11,902        | 12,563   | 9,477    | 10,138   | 8,596    | 9,257    | 51' 6" |
| 20                                   | EW                 |           |          |          |          | 25,566*     | 25,566*  | 22,260* | 22,260*  | 17,852   | 18,734   | 14,106    | 14,987   | 11,461        | 12,122   | 9,477    | 9,918    | 8,155    | 8,596    | 52'10" |
| 15                                   | EW                 | 44,962*   | 44,962*  | 33,942*  | 33,942*  | 27,550      | 27,500*  | 21,599  | 22,922   | 16,971   | 17,852   | 13,665    | 14,326   | 11,020        | 11,681   | 9,257    | 9,698    | 7,714    | 8,375    | 53' 8" |
| 10                                   | EW                 | 33,721*   | 33,721*  | 37,027   | 37,248*  | 26,448      | 27,991   | 20,056  | 21,379   | 15,869   | 16,971   | 13,004    | 13,665   | 10,579        | 11,240   | 8,816    | 9,477    | 7,494    | 8,155    | 54'    |
| 5                                    | EW                 | 13,665*   | 13,665*  | 33,501   | 35,925   | 24,464      | 26,007   | 18,734  | 20,056   | 14,987   | 15,869   | 12,342    | 13,004   | 10,359        | 11,020   | 8,596    | 9,257    | 7,494    | 7,934    | 53'10" |
| 0                                    | EW                 | 12,783*   | 12,783*  | 31,076   | 31,738*  | 22,701      | 24,244   | 17,632  | 18,954   | 14,326   | 15,208   | 11,902    | 12,563   | 9,918         | 10,579   | 8,375    | 9,036    | 7,494    | 7,934    | 53' 4" |
| - 5                                  | EW                 | 14,987*   | 14,987*  | 28,432*  | 28,432*  | 21,820      | 23,362   | 16,971  | 18,073   | 13,665   | 14,546   | 11,461    | 12,122   | 9,698         | 10,359   | 8,375    | 8,816    | 7,714    | 8,155    | 52' 3" |
| -10                                  | EW                 | 18,073*   | 18,073*  | 29,313*  | 29,313*  | 21,158      | 22,701   | 16,530  | 17,632   | 13,444   | 14,326   | 11,240    | 11,902   | 9,477         | 10,138   | 8,375    | 8,816    | 8,155    | 8,596    | 50' 9" |
| -15                                  | EW                 |           |          | 29,534   | 31,738*  | 21,158      | 22,701   | 16,310  | 17,632   | 13,224   | 14,106   | 11,240    | 11,902   | 9,698         | 10,138   |          |          | 9,036    | 9,698    | 46' 9" |
| -20                                  | EW                 |           |          |          |          |             |          | 16,530  | 17,632   | 13,444   | 14,326   |           |          |               |          |          |          | 12,342   | 13,224   | 36' 7" |
| -25                                  | EW                 |           |          |          |          |             |          |         |          |          |          |           |          |               |          |          |          |          |          |        |
|                                      |                    |           |          |          |          | · ·         |          |         |          |          |          |           |          |               |          |          |          |          |          |        |

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

The lift capacities are stated in pounds (lb) on the lifting gear's stick tip, and can be lifted 360° on firm, level supporting surface. Capacities are valid for 24" wide triple grouser pads. Indicated loads are based on ISO 10567 standard and do not exceed 75 % of tipping or 87 % of hydraulic capacity (indicated via \*). Lifting capacity of the excavator is limited by machine stability, hydraulic capacity and maximum permissible load of the load hook.

## **Lift Capacities**

Can be slewed through 360°

with Industrial-Type Straight Boom 31'2"

|    |                    | 15        | ft      | 20        | ) ft     | 25        | ft             | 30        | ft      | 35            | ft       | 40        | ft       | 45          | ft       | 50           | ft     | -         | O DO    | <b>=</b> |
|----|--------------------|-----------|---------|-----------|----------|-----------|----------------|-----------|---------|---------------|----------|-----------|----------|-------------|----------|--------------|--------|-----------|---------|----------|
| ft | Under-<br>carriage | <b></b> ∰ | d d     | <b></b> ∰ | <u>L</u> | <b></b> ∰ | d <sub>a</sub> | <b></b> ∰ | ď       | <del>-4</del> | <u>L</u> | <b></b> ∰ | <u>L</u> | <del></del> | <u>L</u> | <del>5</del> | ď      | <b></b> ∰ | <u></u> | ft is    |
| 60 | EW                 |           |         |           |          |           |                |           |         |               |          |           |          |             |          |              |        |           |         |          |
| 55 | EW                 |           |         |           |          | 22,260*   | 22,260*        |           |         |               |          |           |          |             |          |              |        | 19,836*   | 19,836* | 28' 3    |
| 50 | EW                 |           |         |           |          | 20,718*   | 20,718*        | 18,954*   | 18,954* | 17,852*       | 17,852*  |           |          |             |          |              |        | 17,412*   | 17,412* | 35' 1    |
| 45 | EW                 |           |         |           |          | 19,836*   | 19,836*        | 18,293*   | 18,293* | 16,971*       | 16,971*  | 14,987    | 15,648   |             |          |              |        | 14,326    | 14,987  | 40' 2    |
| 40 | EW                 |           |         |           |          |           |                | 18,073*   | 18,073* | 16,750*       | 16,750*  | 15,428    | 15,869*  |             |          |              |        | 11,902    | 12,563  | 44' 2    |
| 35 | EW                 |           |         |           |          | 19,836*   | 19,836*        | 18,073*   | 18,073* | 16,750*       | 16,750*  | 15,428    | 15,648*  | 12,122      | 12,783   |              |        | 10,579    | 11,020  | 47' 3    |
| 30 | EW                 |           |         |           |          | 20,718*   | 20,718*        | 18,734*   | 18,734* | 17,191*       | 17,191*  | 15,208    | 15,869*  | 12,122      | 12,783   | 9,698        | 10,138 | 9,477     | 9,918   | 49' 8    |
| 25 | EW                 |           |         | 25,126*   | 25,126*  | 22,040*   | 22,040*        | 19,616*   | 19,616* | 17,632*       | 17,632*  | 14,767    | 15,428   | 11,902      | 12,563   | 9,698        | 10,138 | 8,596     | 9,257   | 51' 6    |
| 20 | EW                 | 31,297*   | 31,297* | 28,211*   | 28,211*  | 23,803*   | 23,803*        | 20,718*   | 20,718* | 17,852        | 18,514*  | 14,106    | 14,987   | 11,461      | 12,122   | 9,477        | 9,918  | 8,155     | 8,596   | 52'10    |
| 15 | EW                 | 41,656*   | 41,656* | 31,738*   | 31,738*  | 25,787*   | 25,787*        | 21,599    | 22,040* | 16,971        | 17,852   | 13,665    | 14,326   | 11,020      | 11,681   | 9,257        | 9,698  | 7,714     | 8,375   | 53' 8    |
| 10 | EW                 | 33,721*   | 33,721* | 35,264*   | 35,264*  | 26,448    | 27,770*        | 20,277    | 21,379  | 15,869        | 16,971   | 13,004    | 13,665   | 10,579      | 11,240   | 9,036        | 9,477  | 7,494     | 8,155   | 54'      |
| 5  | EW                 | 13,665*   | 13,665* | 33,501    | 35,925   | 24,464    | 26,007         | 18,734    | 20,056  | 14,987        | 16,089   | 12,342    | 13,004   | 10,359      | 11,020   | 8,596        | 9,257  | 7,494     | 7,934   | 53'10    |
| 0  | EW                 | 12,783*   | 12,783* | 31,297    | 31,738   | 22,922    | 24,464         | 17,852    | 18,954  | 14,326        | 15,208   | 11,902    | 12,563   | 9,918       | 10,579   | 8,375        | 9,036  | 7,494     | 7,934   | 53' 4    |
| 5  | EW                 | 14,987*   | 14,987* | 28,432*   | 28,432*  | 21,820    | 23,362         | 16,971    | 18,073  | 13,665        | 14,767   | 11,461    | 12,122   | 9,698       | 10,359   | 8,375        | 8,816  | 7,714     | 8,375   | 51' 9    |
| 10 | EW                 |           |         | 29,313*   | 29,313*  | 21,379    | 22,922         | 16,530    | 17,632  | 13,444        | 14,326   | 11,240    | 11,902   | 9,477       | 10,138   |              |        | 8,816     |         | 47' 3    |
| 15 | EW                 |           |         |           |          |           |                | 16,530    | 17,632  | 13,224        | 14,326   |           |          |             |          |              |        | 11,902    | 12,783  | 37' 5'   |
| 20 | EW                 |           |         |           |          |           |                |           |         |               |          |           |          |             |          |              |        |           |         |          |
| 25 | EW                 |           |         |           |          |           |                |           |         |               |          |           |          |             |          |              |        |           |         |          |

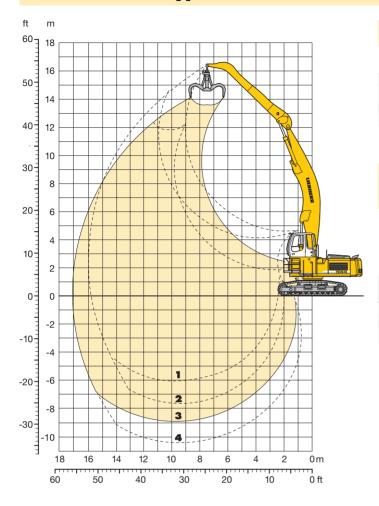
The lift capacities are stated in pounds (lb) on the lifting gear's stick tip, and can be lifted 360° on firm, level supporting surface. Capacities are valid for 24" wide triple grouser pads. Indicated loads are based on ISO 10567 standard and do not exceed 75 % of tipping or 87 % of hydraulic capacity (indicated via \*). Lifting capacity of the excavator is limited by machine stability, hydraulic capacity and maximum permissible load of the load hook.

In longitudinal position of undercarriage

Max. reach \* Limited by hydr. capacity

### **Industrial Attachment**

with Industrial-Type Gooseneck Boom 31'2"



#### **Attachment Envelope**

Kinematic variants 3C/3D

- with industrial stick 23'11" (3D)
- 2 with industrial stick 23'11" (3C)
- 3 with industrial stick 23'11" and grapple model 70 C (3D)
- 4 with industrial stick 23'11" and grapple model 70 C (3C)

## Operating Weight and Ground Pressure

Operating weight includes basic machine with rigid cab elevation 3'11" and counterweight 24,244 lb, industrial-type gooseneck boom 31'2", industrial stick 23'11" and grapple model 70 C with 5 semiclosed tines 1.05 yd3.

| Undercarriage   |     | E,      | W       |
|-----------------|-----|---------|---------|
| Pad width       | in  | 24"     | 30"     |
| Weight          | lb  | 102,513 | 103,836 |
| Ground pressure | PSI | 12.8    | 10.4    |

### **Lift Capacities**

with Industrial-Type Gooseneck Boom 31'2"

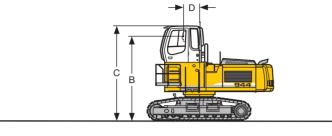
| Indu | ustrial            | Sti       | ck 2     | 23′1      | 11"     | (Va           | ıriaı    | nt 3      | C)       |           |          |           |          |               |         |               |          |            |         |          |
|------|--------------------|-----------|----------|-----------|---------|---------------|----------|-----------|----------|-----------|----------|-----------|----------|---------------|---------|---------------|----------|------------|---------|----------|
| . 6  |                    | 15        | ft       | 20        | ft      | 25            | ft       | 30        | ) ft     | 35        | ft       | 40        | ) ft     | 45            | ft      | 50            | ft       | -          |         | <b>_</b> |
| Į,   | Under-<br>carriage | <b></b> ∰ | <u>L</u> | <u></u> ∰ | d.      | <del>-4</del> | <u>L</u> | <b></b> ∰ | <u>L</u> | <b></b> ∰ | <u>L</u> | <b></b> ∰ | <u>L</u> | <del>-4</del> | Ŀ       | <del></del> 5 | <u>L</u> | <b></b> -∰ |         | ft in    |
| 60   | EW                 |           |          |           |         |               |          |           |          |           |          |           |          |               |         |               |          |            |         |          |
| 55   | EW                 |           |          |           |         |               |          |           |          |           |          |           |          |               |         |               |          |            |         |          |
| 50   | EW                 |           |          |           |         |               |          |           |          |           |          |           |          |               |         |               |          |            |         |          |
| 45   | EW                 |           |          |           |         |               |          |           |          |           |          |           |          |               |         |               |          |            |         |          |
| 40   | EW                 |           |          |           |         |               |          |           |          |           |          | 12,563*   | 12,563*  |               |         |               |          | 12,563*    | 12,563* | 41'10"   |
| 35   | EW                 |           |          |           |         |               |          |           |          |           |          | 12,342*   | 12,342*  | 12,342*       | 12,342* |               |          | 11,902     | 12,342* | 45' 1"   |
| 30   | EW                 |           |          |           |         |               |          |           |          | 13,224*   | 13,224*  | 12,563*   | 12,563*  | 12,342*       | 12,342* |               |          | 10,579     | 11,240  | 47' 8"   |
| 25   | EW                 |           |          |           |         |               |          |           |          | 13,885*   | 13,885*  | 13,004*   | 13,004*  | 12,122        | 12,563* | 9,698         | 10,359   | 9,698      | 10,138  | 49' 6"   |
| 20   | EW                 |           |          |           |         |               |          | 16,089*   | 16,089*  | 14,767*   | 14,767*  | 13,665*   | 13,665*  | 11,681        | 12,342  | 9,698         | 10,138   | 9,036      | 9,477   | 50'11"   |
| 15   | EW                 |           |          | 24,685*   | 24,685* | 20,497*       | 20,497*  | 17,632*   | 17,632*  | 15,869*   | 15,869*  | 13,885    | 14,546*  | 11,240        | 11,902  | 9,257         | 9,918    | 8,375      | 9,036   | 51' 9"   |
| 10   | EW                 | 40,333*   | 40,333*  | 29,093*   | 29,093* | 23,142*       | 23,142*  | 19,395*   | 19,395*  | 16,310    | 16,971*  | 13,224    | 13,885   | 10,800        | 11,461  | 9,036         | 9,477    | 8,155      | 8,596   | 52' 1"   |
| 5    | EW                 | 22,040*   | 22,040*  | 33,060*   | 33,060* | 24,905        | 25,566*  | 19,175    | 20,497*  | 15,428    | 16,310   | 12,563    | 13,224   | 10,359        | 11,020  | 8,596         | 9,257    | 7,934      | 8,375   | 52'      |
| 0    | EW                 | 18,514*   | 18,514*  | 31,517    | 33,721  | 23,142        | 24,685   | 17,852    | 19,175   | 14,546    | 15,428   | 11,902    | 12,783   | 9,918         | 10,579  | 8,375         | 9,036    | 7,934      | 8,375   | 51' 5"   |
| - 5  | EW                 | 19,395*   | 19,395*  | 29,754    | 32,178  | 21,820        | 23,362   | 16,971    | 18,073   | 13,885    | 14,767   | 11,461    | 12,122   | 9,698         | 10,359  | 8,155         | 8,816    | 7,934      | 8,596   | 50' 4"   |
| -10  | EW                 | 21,379*   | 21,379*  | 29,093    | 31,297  | 21,158        | 22,701   | 16,530    | 17,632   | 13,224    | 14,326   | 11,020    | 11,902   | 9,477         | 10,138  |               |          | 8,375      | 8,816   | 48' 9"   |
| - 15 | EW                 | 23,583*   | 23,583*  | 28,872    | 31,297  | 20,718        | 22,260   | 16,089    | 17,191   | 13,004    | 14,106   | 11,020    | 11,681   | 9,477         | 10,138  |               |          | 8,816      | 9,477   | 46' 6"   |
| -20  | EW                 |           |          | 29,313    | 31,517  | 20,938        | 22,481   | 16,089    | 17,412   | 13,224    | 14,106   | 11,020    | 11,681   |               |         |               |          | 9,698      |         | 43' 8"   |
| - 25 | EW                 |           |          |           |         |               |          | 16,530    | 17,632   |           |          |           |          |               |         |               |          | 13,885     | 14,987  | 33' 4"   |

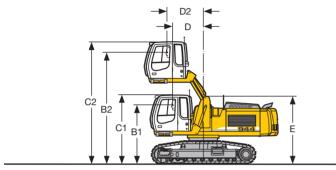
| Indu | ustrial            | Sti       | ck 2     | 23'1      | 11"      | (Va       | ıriaı    | nt 3      | D)      |           |          |           |          |        |                 |           |          |           |         |          |
|------|--------------------|-----------|----------|-----------|----------|-----------|----------|-----------|---------|-----------|----------|-----------|----------|--------|-----------------|-----------|----------|-----------|---------|----------|
| . 6  |                    | 15        | ft       | 20        | ft       | 25        | i ft     | 30        | ft      | 35        | i ft     | 40        | ft       | 45     | ft              | 50        | ft       | -         | 0       | <b>2</b> |
| Į /  | Under-<br>carriage | <b></b> ∰ | <u>L</u> | <b></b> ∰ | <u>L</u> | <b></b> ∰ | <u>L</u> | <b></b> ∰ | d.      | <b></b> ∰ | <u>L</u> | <b></b> ∰ | <u>L</u> |        | r in the second | <b></b> ∰ | <u>L</u> | <b></b> ∰ | <u></u> | ft in    |
| 60   | EW                 |           |          |           |          |           |          |           |         |           |          |           |          |        |                 |           |          |           |         |          |
| 55   | EW                 |           |          |           |          |           |          |           |         |           |          |           |          |        |                 |           |          |           |         |          |
| 50   | EW                 |           |          |           |          |           |          | 16,750*   | 16,750* |           |          |           |          |        |                 |           |          | 16,310*   | 16,310* | 32' 1"   |
| 45   | EW                 |           |          |           |          |           |          | 16,089*   | 16,089* | 15,208*   | 15,208*  |           |          |        |                 |           |          | 14,987*   | 14,987* | 37' 8"   |
| 40   | EW                 |           |          |           |          |           |          |           |         | 14,987*   | 14,987*  | 14,326*   | 14,326*  |        |                 |           |          | 13,885    | 14,106* | 41'10"   |
| 35   | EW                 |           |          |           |          |           |          | 15,869*   | 15,869* | 14,987*   | 14,987*  | 14,326*   | 14,326*  | 12,563 | 13,224          |           |          | 11,902    | 12,563  | 45' 1"   |
| 30   | EW                 |           |          |           |          |           |          | 16,530*   | 16,530* | 15,428*   | 15,428*  | 14,326*   | 14,326*  | 12,342 | 13,004          |           |          | 10,579    | 11,240  | 47' 8"   |
| 25   | EW                 |           |          |           |          | 19,175*   | 19,175*  | 17,412*   | 17,412* | 15,869*   | 15,869*  | 14,767*   | 14,767*  | 12,122 | 12,783          | 9,698     | 10,359   | 9,698     | 10,138  | 49' 6"   |
| 20   | EW                 |           |          | 24,685*   | 24,685*  | 21,158*   | 21,158*  | 18,514*   | 18,514* | 16,750*   | 16,750*  | 14,546    | 15,428*  | 11,681 | 12,342          | 9,477     | 10,138   | 8,816     | 9,477   | 50'11"   |
| 15   | EW                 | 37,468*   | 37,468*  | 28,432*   | 28,432*  | 23,362*   | 23,362*  | 20,056*   | 20,056* | 17,412    | 17,632*  | 13,885    | 14,767   | 11,240 | 11,902          | 9,257     | 9,918    | 8,375     | 9,036   | 51' 9"   |
| 10   | EW                 | 44,962*   | 44,962*  | 32,399*   | 32,399*  | 25,787*   | 25,787*  | 20,718    | 21,599* | 16,310    | 17,191   | 13,224    | 13,885   | 10,800 | 11,461          | 9,036     | 9,477    | 8,155     | 8,596   | 52' 1"   |
| 5    | EW                 | 22,040*   | 22,040*  | 34,162    | 35,705*  | 24,905    | 26,448   | 19,175    | 20,277  | 15,428    | 16,310   | 12,563    | 13,224   | 10,359 | 11,020          | 8,596     | 9,257    | 7,934     | 8,375   | 52'      |
| 0    | EW                 | 18,514*   | 18,514*  | 31,517    | 33,721   | 23,142    | 24,685   | 17,852    | 19,175  | 14,546    | 15,428   | 11,902    | 12,563   | 9,918  | 10,579          | 8,375     | 9,036    | 7,934     | 8,375   | 51' 5"   |
| - 5  | EW                 | 19,395*   | 19,395*  | 29,754    | 32,178   | 21,820    | 23,362   | 16,971    | 18,073  | 13,885    | 14,767   | 11,461    | 12,122   | 9,698  | 10,359          | 8,155     | 8,816    | 7,934     | 8,596   | 50' 4"   |
| -10  | EW                 | 21,379*   | 21,379*  | 29,093    | 31,297   | 21,158    | 22,701   | 16,530    | 17,632  | 13,224    | 14,326   | 11,020    | 11,902   | 9,477  | 10,138          |           |          | 8,375     | 8,816   | 48' 9"   |
| - 15 | EW                 |           |          | 28,872    | 31,297   | 20,718    | 22,260   | 16,089    | 17,191  | 13,004    | 14,106   | 11,020    | 11,681   | 9,477  | 10,138          |           |          | 8,816     | 9,477   | 46' 3"   |
| -20  | EW                 |           |          |           |          |           |          |           |         |           |          |           |          |        |                 |           |          | 13,665    |         | 33' 4"   |
| - 25 | EW                 |           |          |           |          |           |          |           |         |           |          |           |          |        |                 |           |          |           |         |          |
|      |                    |           |          |           |          | ņ         |          |           |         |           |          |           | _        |        |                 |           |          |           |         |          |

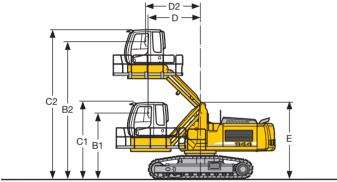
In longitudinal position of undercarriage □☐ Can be slewed through 360° Max. reach \* Limited by hydr. capacity

The lift capacities are stated in pounds (lb) on the lifting gear's stick tip, and can be lifted 360° on firm, level supporting surface. Capacities are valid for 24" wide triple grouser pads. Indicated loads are based on ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity (indicated via \*). Lifting capacity of the excavator is limited by machine stability, hydraulic capacity and maximum permissible load of the load hook.

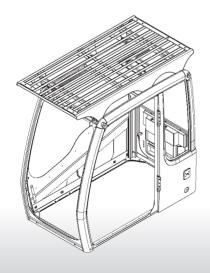
## **Choice of Cab Elevation** and Cab Protection







#### **FOPS Guard**



#### **Rigid Cab Elevation** 3'11" ft in 6'7" ft in Height В 13' 1" ft in 15'9" ft in 17'4" ft in С 14' 9" ft in 2' 2" ft in 2'2" ft in

80,908 lb

82,892 lb

83,774 lb

Weight includes basic machine with pad width 24" 80,467 lb

| Hydraulic Cab Elevation       |              |
|-------------------------------|--------------|
| B1                            | 9' 2" ft in  |
| B2                            | 17' 4" ft in |
| C1<br>C2                      | 10'10" ft in |
| C2                            | 19' ft in    |
| D1                            | 4' 9" ft in  |
| D2                            | 5' 7" ft in  |
| E                             | 10' 6" ft in |
| Weight includes basic machine |              |

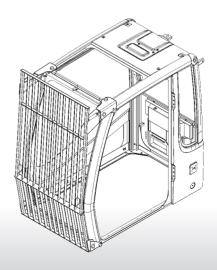
Weight includes basic machine with pad width 24"

#### **Hydraulic Cab Elevation** (Parallelogram) + Intermediate Piece 1'7"

| ВІ | 10° 4° π in  |
|----|--------------|
| B2 | 21' 6" ft in |
| C1 | 11'11" ft in |
| C2 | 23' 2" ft in |
| D1 | 8' 2" ft in  |
| D2 | 8' 2" ft in  |
| Е  | 11'11" ft in |

Weight includes basic machine with pad width 24"

#### **Front Guard**



## **Variety of Tools**



| <b>Multiple Tine G</b>            | rapple             | S   | open tine     | S             | semi-clos     | ed tines      | closed tin    | es            |
|-----------------------------------|--------------------|-----|---------------|---------------|---------------|---------------|---------------|---------------|
| <b>Grapple Model 69</b> (4 tines) | Capacity<br>Weight | , . | 1.05<br>2,601 | 1.44<br>2,932 | 1.05<br>3,197 | 1.44<br>3,946 | 1.05<br>3,924 | 1.44<br>4,277 |
| Grapple Model 70 C (5 tines)      | Capacity<br>Weight | , . | 1.05<br>3,307 | 1.44<br>3,351 | 1.05<br>3,770 | 1.44<br>4,101 | 1.05<br>4,189 | 1.44<br>4,387 |



### **Crane Hook with Suspension**

| Max.load               | lb    | 27,550 |
|------------------------|-------|--------|
| Height with suspension | ft in | 3'3"   |
| Total weight           | lb    | 287    |

For further information see "Attachment-Information – Liebherr Hydraulic Clamshells and Grapples". To operate a magnet the installation of a generator is required; please contact your Liebherr dealer or the factory for further information.

## **Equipment**

| Undercarriage   | S | 0 |
|---|---|---|
| Two-speed travel  | • |   |
| Track guides on idler end                                       | • |   |
| Life time lubricated track rollers                              | • |   |
| Travel drive completely integrated into the undercarriage frame | • |   |
| Tracks sealed and greased                                       | • |   |
| Track guides at sprocket and in center                          |   | • |
| Reinforced base-plate center-piece                              |   | • |
| Conversion kit – Track D 7 to D 7 G                             |   | • |

| <b>Uppercarriage</b>               | S | 0 |
|------------------------------------|---|---|
| Engine hood with lift cylinder     | • |   |
| Lockable tool box                  | • |   |
| Handrails, non slip surfaces       | • |   |
| Tool kit                           | • |   |
| Maintenance-free swing brake lock  | • |   |
| Maintenance-free HD-batteries      | • |   |
| Main switch for electric circuit   | • |   |
| Sound insulation                   | • |   |
| Electric fuel tank filler pump     |   | • |
| Foot pedal swing positioning brake |   | • |
| Extended tool kit                  |   | • |
| Customized colors                  |   | • |

| H  |   |   |
|--|---|---|
| Hydraulics   | S | 0 |
| Electronic pump regulation   | • |   |
| Stepless work mode selector  | • |   |
| Pressure storage for controlled lowering of attachments with engine turned off | • |   |
| Hydraulic tank shut-off valve  | • |   |
| Pressure compensation  | • |   |
| Flow compensation  | • |   |
| Filter with integrated fine filter area (5 µm)                                 | • |   |
| Pressure test ports  | • |   |
| Additional hydraulic circuits  |   | • |
| Bio-degradable hydr. oil   |   | • |
| Filter for secondary circuit   |   | • |

| Engine  | S | 0 |
|---|---|---|
| Unit pump system  | • |   |
| Turbo-charged and after-cooled, reduced emissions           | • |   |
| Dry-type air cleaner w/pre-cleaner, main and safety element | • |   |
| Sensor controlled engine idling                             | • |   |
| Engine cold starting aid                                    |   | • |

| Operator's Cab   | S | 0 |
|--|---|---|
| Roof hatch   | • |   |
| Tinted windows   | • |   |
| Right window made of one piece (without post)                                | • |   |
| Door with sliding window   | • |   |
| Rain hood over front window opening  | • |   |
| Wiper/washer   | • |   |
| Emergecy exit rear window  | • |   |
| Sun roller blind   | • |   |
| Seat and consoles independently adjustable                                   |   |   |
| (6-way adjustable seat)  | • |   |
| Storage tray   | • |   |
| Closed storage space   | • |   |
| Coat hook  | • |   |
| Removable customized foot mat  | • |   |
| Dome light   | • |   |
| Inside rear mirror   | • |   |
| Cigarette lighter and ashtray  | • |   |
| Seat belt  | • |   |
| Mechanical hour meters, readable from outside the cab                        | • |   |
| Displays for engine operating condition                                      | • |   |
| Automatic air conditioning with defroster                                    | • |   |
| Preparation for radio installation   | • |   |
| Stereo radio   |   | • |
| Electric cooler  |   | • |
| Auxiliary heating  |   | • |
| Additional flood lights  |   | • |
| Wiper in lower front window  |   | • |
| Roof window wiper  |   | • |
| Bullet proof window (fixed installation – can not be opened) FOPS Protection |   | • |
| Air pressure operator seat with heating and head-rest                        |   | • |
| Electronic theft protection  |   | • |
| Beacon   |   | • |
| Extinguisher   |   | • |
| -  |   |   |

| Attachment   | S | 0 |
|--|---|---|
| Flood lights   | • |   |
| Hydr. lines for clam operation in stick                    | • |   |
| Sealed pivots  | • |   |
| Liebherr semi-automatic central lubrication system         | • |   |
| Safety check valves on hoist cylinder, regenerative        | • |   |
| Safety check valves on stick cylinder, regenerative        | • |   |
| Hose quick connection                                      | • |   |
| Cylinders with shock absorber                              | • |   |
| Industrial-type gooseneck sticks with remote hydraulic pin |   |   |
| puller   |   | • |
| Safety lift hook   |   | • |
| Liebherr line of clams                                     |   | • |
| Liebherr fully-automatic central lubrication system        |   | • |
| Customized colors  |   | • |
| Overload warning device                                    |   | • |

#### S = Standard, O = Option

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