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Boddingtons Brewery
Construction Environmental
Monitoring Plan (CEMP)



Civil and Remediation Ltd.

C305/CEMP/001/04

July 2023

Tom Magee BSc (Hons) FGS MCIWEM

Document Revision Status

Issue	Date	Comments
01	11/02/22	Issued for Tender package.
02	15/07/22	Issued for Regulator review.
03	03/08/22	Amended in accordance with Local Authority comments.
04	07/07/23	Amended in accordance with Planning comments.

Important note about the report:

The sole purpose of this report and the associated services performed by C&R is to highlight the environmental monitoring to be undertaken in accordance with the scope of services set out in the Tender to be agreed by Contract upon receiving the works between C&R and the Client. That scope of services, as described in this report, was developed with the Client.

In preparing this report, C&R has relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by the Client. Except as otherwise stated in the report, C&R has not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

The passage of time, manifestation of latent conditions or impacts of future events may require further examination of the project and subsequent data analysis, and re- evaluation of the monitoring methods, frequencies and quantities expressed in this report. C&R has prepared this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above and by reference to applicable standards, guidelines, procedures and practices at the date of issue of this report.

This report should be read in full and no excerpts are to be taken as representative. No responsibility is accepted by C&R for use of any part of this report in any other context.

The report is based on the available information provided to date and subject to agreement with the regulators. This report has been prepared on behalf of, and for the exclusive use of the Client, and is subject to, and issued in accordance with, the provisions of the contract between C&R and the Client.

C&R accepts no liability or responsibility whatsoever for, or in respect of, any use of, or reliance upon, this report by any third party.

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Author: Tom Magee BSc (Hons) FGS MCIWEM

Checked By: Aron Rowley (Project Engineer, C&R Ltd)

Approved By: Jack Rowley FCICES MIVM (Managing Director, C&R Ltd)

Client: Latimer Developments Ltd.,
Level 66 More London Place,
Tooley Street,
London,
SE1 2DA

Remediation Contractor: Civil and Remediation Ltd.
Grosvenor House
3 Chapel Street
Congleton
Cheshire
CW12 4AB

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1.0 Introduction

1.1 Background Information

Civil and Remediation have been appointed by Latimer Developments Ltd. (in advance of the formal Contract) for the enabling works package to provide a development platform at the former Boddingtons Brewery site, located on Great Ducie Street, Cheetham Hill, Manchester, M3 1PT (referred hereafter as "the Site"), centred on national grid reference SJ837992. The surrounding environs are comprised predominantly of commercial land uses, with Travelodge Manchester Central adjoining the site to the north and notably Manchester College (to be completed 2022) to the south.

A site walkover has been completed as part of the Tendering process, with observations as follows:

- The site is currently in use as an active car park, with pedestrian access from Great Ducie Street and vehicle access from Francis Street near the northern site boundary;
- The surface of the site is predominantly concrete with sporadic areas of asphalt and gravel;
- There is a batter near the eastern boundary with mature trees and vegetation;

1.2 Scope of Works

The works include the following:

- Site set up, including boundary fencing and establishment of welfare, storage and office area;
- Establishment of environmental monitoring, including noise, dust and vibration;
- Stats trial pitting to locate and protect existing services/ lower retained services;
- Breakout of relict slabs and foundations to stock for crushing to produce recycled aggregate for reuse on site;
- Remediation of hotspots identified in the Phase 2 Ground Investigation Report by E3P;
- Earthworks to the Specification of Highway Works Series 600, including cement stabilisation; and,

- Civils works to create a bell mouth entrance to the site from Great Ducie Street.

2.0 Site Setting

2.1 Existing Site Conditions

The Site is rectangular and is currently comprised of an active car park on the relict slab of the former Boddingtons building, with limited self-seeded vegetation in gravel to the west of the site. The Site is generally flat, with an area of approximately 0.47ha.

2.2 Proposed Development

The development is comprised of the construction of Residential properties with associated commercial spaces and Public Open Space, varying between 1 and 26 storeys.

Car parking for staff will be provided.

HGV vehicles will be required to enter and exit the site during the construction phase and when the site becomes operational.

Other considerations include:

- Welfare for site operatives;
- Smoking area;
- Lighting; and,
- Drainage.

3.0 Environmental Monitoring and Sampling

3.1 Environmental Monitoring

The main areas covered by this Construction Environmental Monitoring Plan will include the following and baseline monitoring will be conducted with mitigation measures implemented prior to the commencement of works:

- Air quality to include dust;
- Vibration monitoring; and,
- Noise monitoring.

Daily measurements will be undertaken using real time, visual and olfactory methods during periods while the works progress; monitoring frequencies are likely to be dynamic on a risk based approach to the works, utilising professional judgement and experience.

These methods have their limitations in terms of accuracy and limit of detection but **are required to assess compliance with short term exposure standards and address problems early on - timely action can be taken to prevent complaints and avoid causing concern for those working in the vicinity of the site.**

Within the site boundary dust monitoring shall be carried out using Frisbee gauges (directional dust) at the predetermined locations. A visual assessment of fugitive dust emissions and a subjective assessment of odour strength and character at offsite locations will be undertaken.

PID monitoring is not thought at this time to be required, however, if any unanticipated volatile compounds are suspected to cause concern during the works this will be deployed at the boundary where necessary.

A summary of the environmental monitoring is presented in **Table 1** below and proposed monitoring points indicated on drawing T2032/CEMP/001 in **Appendix A** below.

Table 1 – Summary of Environmental Monitoring and Sampling

Activity	Locality	No. of Monitoring Points	Location Reference	Frequency	Notes
Air Quality	Site boundary	2	AQ1, AQ2	Fortnightly	Dust recorded by Frisbee Gauges. Dust recorded by visual assessment.
Vibration	Site Boundary	2	VB1, VB2	Daily/continuous	Measurement and evaluation of vibration shall be in accordance with the guidance given in BS7385 Part 1 for 'control' monitoring.
Noise	Site boundary and within site	4	NM1, NM2, NM3, NM4	Daily	Recorded by hand-held noise level meter. Proposed target noise levels at the boundary are not to exceed 75dB , on basis of acoustic testing undertaken in August 2021

All field monitoring data will be provided within the Environmental Reports, issued weekly/ fortnightly depending on the progression of works. Results will be compared with earlier results for the same locations to National/European Air Quality Standards. Where no standards are available, long-term exposure standards are derived from other sources, e.g.:

- Environment Agency/ Defra Contaminated Land TOX reports for inhalation TDI's;
- WHO Air Quality Guidelines for Europe;
- US EPA Integrated Risk Information System; and,
- CAR 2012 (where applicable).

If any significant variations arise, an explanation will be sought, and the Project Manager will within 24hrs make available the findings to the Client and Manchester City Council (MCC).

3.2 Daily Environmental Record

The Daily Environmental Record (DER) is a generic document from our Business Manual for use across the range of works completed by C&R. The DER has been tailored to the specifics of this project include site information together with the additional (non-exhaustive) items:

Boddingtons Brewery, Manchester

- Daily checks/remedial measures to site hoarding/ perimeter fencing;
- Dust monitoring at the pre-determined locations, coupled with visual inspections site wide;
- Weather forecasting information, current weather conditions and actions taken to reduce potential for nuisance;
- Noise monitoring at pre-determined locations;
- Daily checks for rutting on public highway leading to site; and,
- Odour monitoring in relation to excavation of unforeseen contamination;

The DER will be developed to provide an all-encompassing and auditable record of our operations on site.

The DER would be made available to the Client & MCC as part of the Weekly Environmental Reports.

Daily and weekly environmental records will be maintained by C&R during the entire duration of the site works.

Measures to Reduce Impacts of Construction Dust

Mitigation Measures - Communication	Recommendation
General	
Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	Highly Recommended
Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.	Highly Recommended
Display the head or regional office contact information.	Highly Recommended
Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk, and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. The DMP may include monitoring of dust deposition, dust flux, realtime PM ₁₀ continuous monitoring and/or visual inspections.	Highly Recommended
Site Management	
Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.	Highly Recommended
Make the complaints log available to the local authority when asked.	Highly Recommended
Record any exceptional incidents that cause dust and/or air emissions, either onsite or offsite, and the action taken to resolve the situation in the log book.	Highly Recommended
Monitoring	
Undertake daily on-site and off-site inspections, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of site boundary, with cleaning to be provided if necessary.	Desirable
Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.	Highly Recommended
Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.	Highly Recommended
Agree dust deposition, dust flux, or real-time PM ₁₀ continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.	Highly Recommended

Preparing and Maintaining the Site	
Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	Highly Recommended
Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.	Highly Recommended
Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.	Highly Recommended
Avoid site runoff of water or mud.	Highly Recommended
Keep site fencing, barriers and scaffolding clean using wet methods.	Highly Recommended
Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.	Highly Recommended
Cover, seed or fence stockpiles to prevent wind whipping.	Highly Recommended
Operating Vehicle / Machinery and Sustainable Travel	
Ensure all vehicles switch off engines when stationary - no idling vehicles.	Highly Recommended
Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.	Highly Recommended
Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).	Desirable
Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.	Highly Recommended
Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).	Desirable
Operations	
Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.	Highly Recommended
Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.	Highly Recommended
Use enclosed chutes and conveyors and covered skips.	Highly Recommended
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	Highly Recommended

Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.	Highly Recommended
Waste Management	
Avoid bonfires and burning of waste materials.	Highly Recommended

4.0 Operational Control Measures

4.1 Surface Water Control

Measures will be put in place to ensure that the risk of surface water runoff across site boundaries is minimised. Where necessary, measures such as silt fences or drainage grips will be used to prevent uncontrolled run-off containing elevated suspended solids being discharged from the site.

Surface water arising from the site shall be used for dust suppression; however, any surplus water will require a discharge consent in order to dispose of the waters to localised sewers. It shall be C&R's responsibility to obtain such consent and no discharge to sewer shall be undertaken without written confirmation of such consent from the relevant organisations.

In the event of significant surface water issues on site, the Surface Water Management Strategy (drawing T2032/SW/001 issued in **Appendix A**) will be actioned.

4.2 Air Quality

In order to mitigate the impact of dust generating activities, site specific measures in accordance with GLA best practice guidelines will be implemented.

A Method Statement and associated Risk Assessment (RAMS) will be developed for all activities involved in the works and these measures will be incorporated in the Works. Odours, where encountered, will be mitigated appropriately.

All personnel will be reminded of good practice and standards through a series of "Toolbox Talks" and Safety Inductions.

In accordance with Section 6.18 of the Deloitte Environmental Statement (Volume 1) issued as part of the planning application, C&R will ensure that all plant on site complies at a minimum with EU Emission Standards Stage III. This will keep emissions to a minimum as far as reasonably practicable on site. Specification sheets for the procured plant are provided in Appendix B below, with the rollers and dumpers complying to Stage IIIA & IIIB respectively, and the excavators complying with Stage IV.

4.3 Noise and Vibration

Noise and vibration will be managed in accordance with the Control of Noise at Work Regulations 2005, BS ISO 4866:2010 Vibration of Fixed Structures & BS 6472: Part 1: 2008 respectively.

Prior to the site works commencing fencing will be erected around the working boundary and other locations where required. During this period, a pre-start noise survey will be undertaken to establish the background average noise levels at each monitoring location.

All vehicles and mechanical plant used for the purpose of the Works shall be fitted with effective exhaust silencers and shall be maintained in good and efficient works order.

All compressors shall be 'sound reduced' models fitted with properly lined and sealed acoustic covers which shall be kept closed whenever the machines are in use, and all ancillary pneumatic percussions tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers.

Machines in intermittent use shall be shut down in the intervening periods between work or throttled down to a minimum and plant and vehicles started up sequentially rather than all together.

Onsite monitoring of noise levels will be conducted three times daily. If noise is significantly higher than the background noise survey (i.e >10dB above the average recorded for the pre start survey at each location) then noise monitoring will be increased from 3 to 6 times daily over regular intervals to ensure that the limit of 85dB is not breached and noise is being effectively managed on site, in accordance with this document.

Upon exceedance of the established 85dB limit, the Geoenvironmental Engineer will cease works immediately and liaise with the Site Manager to agree an alternative works method to reduce the noise at the monitoring location.

Note that specific activity related noise readings are also conducted as part of the Health and Safety Plan, which uses the measured noise levels to assess hearing protection requirements for operatives using the HSE Noise Calculator. This assessment is continually updated and will be conducted for these works for each item of plant as soon as it commences work on site. From C&Rs previous assessments, large earthworks plant (including dumpers, rollers and excavators without breakers) do not exceed the 85dB limit. Small items of plant such as Stihl saws and breakers regularly exceed the established 85dB limit, so operatives will be required to use the correct, assessed hearing protection and works utilising these plant are to be conducted away from the site boundaries to prevent hearing damage to passers-by, where possible.

Site activities will be restricted to site working hours, are Monday to Friday 08:30 to 18:00.

C&R shall, as far as reasonably practicable, not exceed the vibration dose values as specified in BS 6472: Part 1: 2008. An action trigger level of 1.0mm/s/ppv is set for the boundary of the site. Upon exceeding this level, all C&R management staff receive an automatic email and text message alerting them of the exceedance. Works will immediately cease in this area and the cause of the vibration investigated. Should the investigation find that the works were carried out minimising vibration as much as possible and still need to continue, then an alternative working method will be established to prevent any further exceedances (such as breaking concrete in a stockpile away from the boundary, or compacting material using a 'dead roll' i.e without vibration enabled on the compaction equipment).

In order to mitigate the impact of noise and vibration activities, site specific measures in accordance with Best Practicable Means (BPM) will be implemented and shall include the following:

- Scheduling of construction delivery vehicles to least noise sensitive times of the day;
- Time slots for bulk deliveries to ensure that convoys of vehicles do not arrive simultaneously;
- Strict control to prevent temporary parking on kerbside in the vicinity of noise sensitive roads in close proximity to the site; and,
- The use of sufficient clear signage to ensure that construction vehicles use only the designated routes.

Regular communication will be maintained with the local residents for the entire duration of the works and a complaint number and contact person shall be provided in the event of any incident occurring.

All personnel will be reminded of good practice and standards through a series of "Toolbox Talks" and Safety Inductions.

4.4 Fuel Storage and Vehicle Refuelling

C&R will ensure that any fuel required for plant shall be stored in double bunded tanks which are placed within areas of bunded impermeable surfacing, where possible. Refuelling shall be undertaken such that any spillage is collected on a spill tray and disposed off-site. Toolbox talks shall be held by the C&R to ensure that the operatives are fully aware of correct refuelling procedures. Any spillages shall be reported immediately to the Project

Manager, immediately cleared and cleaned in an approved manner and any contaminated sub-soil immediately removed.

4.5 Soil Quarantine

In the event of discovering contaminated soils on the site (and with the hotspots identified in the E3P Ground Investigation Report), they will be excavated and stocked in a clearly defined quarantine area. This area will be located in an area of hardstanding (if available), materials stocked on top of visqueen to prevent vertical migration of contaminants and a bund constructed around the area to prevent runoff.

Soils placed in the designated quarantine area will be covered by an LDPE membrane (or similar) to prevent release of asbestos fibres where required.

4.6 Mud Control

C&R shall apply mud control (M/C) when applicable. A jet washing unit will be deployed to facilitate washing down of vehicular wheels leaving site (disposal or imported fills and for plant delivery's only). This shall be positioned adjacent to the site entrance so that the vehicles exiting this facility do so on to clean, hard surfacing leading back into the business park. All vehicles exiting site shall do so through the wheel wash and the gateman shall keep records of such.

C&R shall ensure that, as a result of the Works, mud, dust and debris is not deposited on public highways; in the event of this occurring, appropriate mitigation measures shall be taken. A road-sweeping vehicle shall be employed if necessary.

4.7 Highway Defect Monitoring

C&R will conduct a dilapidation survey prior to the commencement of works. This information shall be held on site and for the duration of the Works C&R shall carry out daily check for defects such as rutting of the pavement surface. In the event that this occurs as a result of vehicular traffic C&R shall immediately notify the Client and carry out repairs to the affected area.

4.8 Gas and Fires

C&R shall take measures to ensure gaseous emissions from all plant, fuel etc. are minimised and at level approved by the Client & MCC.

In the event of odour nuisance levels being encountered on the site boundary, remedial measures shall be taken including the immediate removal or covering or control of odour

sources. Should carbonaceous or other combustible materials and gases be identified within the site, C&R shall ensure the lighting of fires is prohibited at all times. Notices to this effect shall be erected and maintained at appropriate locations.

Prior notice shall be given of any intention to use welding equipment. Smoking on site will not be permitted outside of the designated, controlled smoking areas.

4.9 Dust Control

Dust control measures shall be undertaken to the satisfaction of the Project Manager, Client & MCC at all times and works will be stopped if acceptable measures are not in place or being utilised.

The following Mitigation Measures will be implemented by C&R

- Water assisted dust sweeper on the access local roads
- Avoid dry sweeping of large areas
- Ensure vehicles entering and leaving site are covered to prevent escape of materials during transport
- Record all inspections of haul roads and any subsequent action in a site log book
- Implement a wheel washing system

The following monitoring works shall be undertaken by C&R:

- Daily visual and odour diary; and,
- Fortnightly monitoring of dust sitewide and at receptor locations as shown on drawing T2032/CEMP/001 in **Appendix A**;

Monitoring data will be compared to exposure standards, which form the basis of trigger levels will be used to re-assess working practices on site.

Trigger levels will be set according to 2 levels of control as follows:

- Level 1 - To protect workers on site, based on occupational exposure standards. Parameter measured being close to or at the exposure standard. Action will be to investigate reason and modify ongoing works.
- Level 2 - To protect nearby sensitive receptors. Parameter above exposure standard. Action will be to stop site works, investigate reason and modify ongoing works.

Acceptability levels to be compared with the site wide environmental monitoring results should be agreed with the Client & MCC prior to work commencing but as a minimum the following levels shall be adopted within this CEMP.

4.10 Adverse Ground Conditions

C&R shall inform the Client & MCC when any ground is exposed which shows any visible signs of chemical contamination, backfilling or any variation in the ground conditions which was not previously identified.

C&R shall ensure that machine drivers and supervisory personnel shall closely observe the working faces and arisings from excavations for unusual materials such as:

- odorous solids or liquids;
- friable, fibrous or 'dusty' material, in particular asbestos;
- accumulations or seepages of liquids which are tarry/oily, foaming/bubbling or
- coloured; and,
- any changes in colouration of the ground materials or groundwater after exposure or excavation.

Upon discovering any unusual materials, work at that position shall stop and the Client shall be informed immediately.

If, in the Client & MCC's opinion, unusual materials encountered during excavation cannot be transferred to a designated 'stockpile' without compromising or fear of compromising the health and safety of site personnel or causing an environmental hazard, work shall cease in the affected area whilst specialist advice is sought. Examples of such materials would be asbestos lagging and drums whose physical condition is such that their disturbance may result in the loss of their contents.

4.11 Asbestos Containing Materials

No Asbestos Containing Materials (ACMs) have been identified on site.

If required, C&R shall provide, as part of the works methodology, an assessment to implement as necessary recommendations for handling of asbestos during and any subsequent removal which will include but not necessarily be limited to:

- Testing of the asbestos to inform an action plan and to assess the risk using the JIWG Decision Support Tool, developed in accordance with the Control of Asbestos Regulations 2012;
- A suitable and sufficient management plan compliant with current legislation;

- Provision of PPE – to include masks, goggles and overalls if there is any non-licensable hand picking and segregation works to undertake and the provision of overalls for all workers full time to mitigate the risk of asbestos on workers clothes;
- Controlled removal by double bagging ACMs and disposing off site in a lidded asbestos skip; and,
- Air quality monitoring of working location for airborne asbestos where required.

4.12 Ecology

Japanese Knotweed has not been recorded on site.

This species is listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), which means it is illegal to cause it to spread in the wild. If discovered, C&R will alert the Client and form a plan to dispose of the JKW off site, under the supervision of a suitably qualified Environmental Engineer.

No other invasive species have been recorded on site by C&R during the site visit.

4.13 Disposal of Contractors Waste Materials

C&R shall be responsible for the removal and disposal, if required, of waste materials from its activities.

C&R are responsible for keeping all public and private roadways free from mud and other debris arising from our construction activities.

4.14 Contingency Measures

C&R will deploy a water bowser, where needed, with an adapted spray bar system to dampen down the soils and aggregates and consequently mitigate dust by increasing the consistent moisture conditions if required.

This plant mitigates dust/odour nuisance whilst blanketing up to 10,000m² with a fine spray of water droplets at any one deployment.

4.15 Site Hours of Operation

The site hours of operation have been agreed with MCC Planning & Environmental departments, and are as follows: 0730 to 1800 Monday to Friday, with overtime hours on Saturday 0830 to 1400. No working is permitted on Sundays or Bank Holidays.

Note that during the drainage connection works on Great Ducie Street, night working may be required by MCC which is subject to approval by the EHO. The working hours for this specific item of works is to be agreed separately with MCC.

4.16 Consultation and Complaints Procedures

Upon the 'soft start' commencement of works (construction of site delineation/ security hoarding/ herras fencing) an initial letter drop will be conducted to the local residents and businesses. This letter will contain a non-technical summary of the works, the actions we take to reduce any potential impacts, highlight specific activities that may impact them and provide contact details of the management team for general communication or to make a complaint.

The primary anticipated receptors of any potential environmental detriments stemming from the works are currently the Travelodge adjacent to the north of the site, Manchester College on the south of the site and the businesses located to the west of the site on Great Ducie Street.

Following the initial letter drop, the aforementioned residents/ businesses will be updated with an updated letter once per month, advising of the completed works to date, upcoming works and reiterating the contact numbers should then need to consult C&Rs management team. If there is an item of the works that will significantly impact certain local residents/ businesses (such as the drainage connection in Great Ducie Street and associated traffic management) then a separate letter detailing this will be issued no later than 2 weeks prior to the commencement of the specific work item.

The letter drop will invite businesses and residents to attend site at any time during the working hours and talk with a C&R representative should the need arise.

C&R will put signs on the boundary stating a contact number should any local residents, businesses or passers-by need to get in contact with the management team.

Complaints will be responded to by a formal email/ letter no later than 12 hours after the complaint is received. A record of complaints will be kept electronically and in paper format in the site office.

5.0 Health and Safety

All operations on the site will be undertaken in compliance with this Health & Safety Plan and in line with C&R's Health and Safety systems and procedures.

The Contract Stage Health & Safety Plan for the entire site operations will be held by the Project Manager and will be provided for induction to all personnel on site.

5.1 Emergency Plan

An Emergency Plan shall be produced by C&R and is to be agreed with the Client and MCC. The plan shall focus on the following potential risks and identifies measures that C&R will put in place to minimise these risks and controls should incidents/accidents occur:

- Fire;
- Spillages/Leakages to Ground and/or Surface water drains;
- Odour/Gas Emissions;
- Unforeseen/Previously unidentified Wastes;
- Trespass/Unauthorised Access to Site.

5.2 Site Rules and Regulations

The site will be managed by a full time by C&R's Project Management team who will be responsible for the Health & Safety of all personnel on site. They will be backed up by the head office based senior management team and by our Health & Safety Manager on a visiting basis.

All personnel will comply with the rules and regulations laid down in the Site Rules.

All visitors to the site will be required to sign in/out and all personnel working on the site will be subject to an induction on the C&R Safety, Quality and Environmental systems.

5.3 Plant and Equipment

All plant operators will be trained in the operation of their particular piece of plant and will be certified accordingly. Daily plant inspections will be carried out, with servicing and maintenance being conducted based on these findings. A record of the relevant certificates and inspections will be held by C&R on site throughout the duration of the works.

If HGVs are unable to be sheeted from the ground, then they will be required to be fitted with auto- sheeting systems to remove the possibility of falls from height.

Records of test results will be held on site and will be available for inspection.

6.0 Regulatory Authority Consultation

The M/C Project Manager will maintain contact with local representatives in the immediate area so that any concerns on environmental impacts may be addressed at an early stage. In addition, C&R is signed up to the Considerate Contractors Scheme and its associated initiatives.

Regular visits from the regulatory authorities will be encouraged so that they may be confident that controls are in place and monitoring is being carried out. This will aid the authorities in responding to any enquiries from the public.

A proactive approach will be taken by C&R to keeping site neighbour's informed. A letter drop will be completed for local businesses in the immediate vicinity. Site contact details will be issued and displayed on notice boards.

7.0 Documentation

7.1 Quality Systems

All operations on the site will be undertaken in accordance with C&R's Environmental Management System, Quality Systems and procedures.

7.2 Availability of Records

C&R will record the activities carried out on site daily both in the Site Diary and in the DER. All documentation pertaining to the environmental monitoring will be held in the site offices. In addition, a copy of all consents, licenses, duty of care paperwork, pumping records etc will be held on site.

A duplicate copy of all documentations will be held at the Head Office of C&R Limited at the following address:

Grosvenor House,
3 Chapel Street,
Congleton,
Cheshire
CW12 4AB

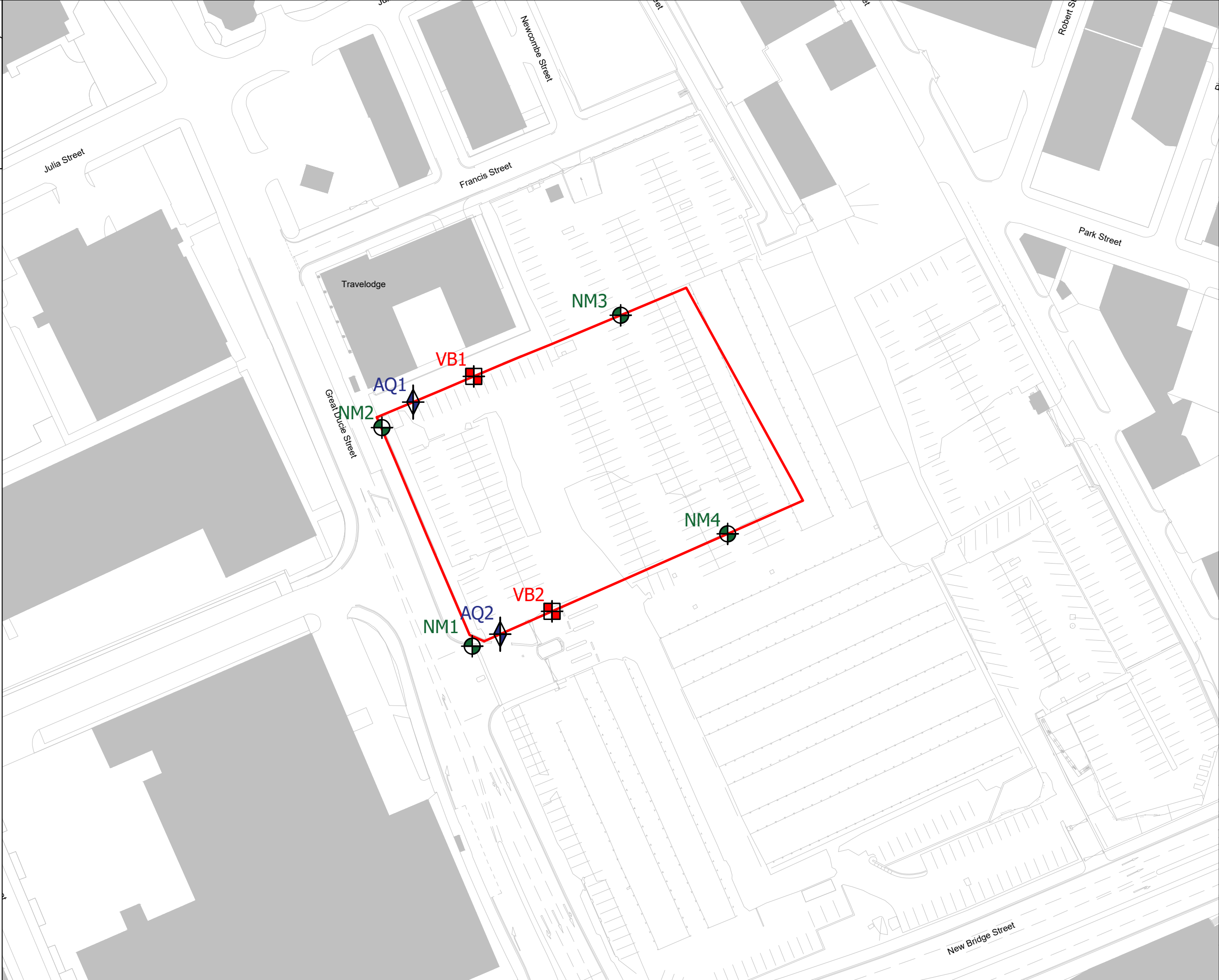
7.3 Completion Report

A completion report will be prepared by C&R for submission to the Client & MCC. The report will include details of the environmental monitoring procedure undertaken; air quality, noise and vibration results, daily and weekly environmental records, survey information and any other relevant information.

The report will be submitted to the Client and the Regulators within one month of completion of works on site.

End of Report

APPENDIX A – DRAWINGS



C&R

civil-remediation.com

Job Title

Boddingtons

Location

Manchester

Client

Latimer Developments Ltd

Key

Vibration monitoring location

Dust monitoring location

Noise monitoring location

Rev	Date	Description
B	14/07/22	Information

Drawing Status

Information

Drawing Title

Environmental Monitoring Locations

C&R Project Code

T2032

Scale

NTS

Date Drawn

14/07/22

Drawn By

TM

Reviewed By

AR

Original Size

A3

Drawing Number

T2032/CEMP/001

Rev

B

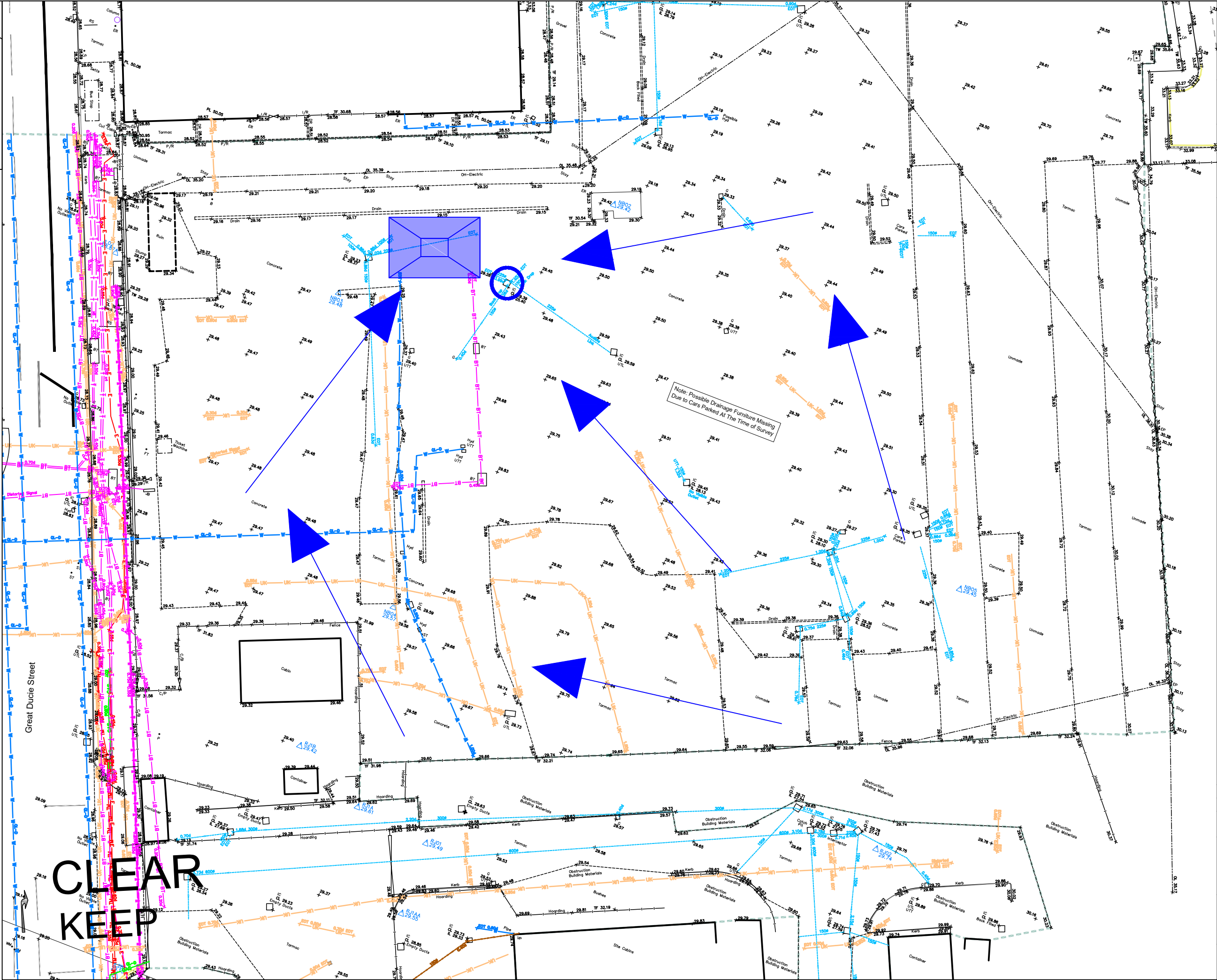
Key

 Sump location

 Pumping direction of potential surplus surface water not used for dust suppression

 Potential location to discharge potential surplus surface water depending on internal clarification of flow direction and subject to obtaining discharge consent

Rev	Date	Description
A	11/02/22	Information
Drawing Status Information		
Drawing Title Surface Water Management Plan		
C&R Project Code	T2032	Scale
Date Drawn	11/02/22	NTS
Drawn By		TM
Reviewed By		AR
Original Size		A3
Drawing Number		Rev
T2032/SW/001		A



APPENDIX B – PLANT SPECIFICATION SHEETS

ASC 150

SOIL COMPACTOR Tier 3

A SMART WORKER WITH BIG OUTPUT

As the compaction grows tougher, Ammann offers this heavier compactor with greater static linear loads. The Ammann ASC 150 Tier 3 Soil Compactor provides industry-leading compaction outputs while optional ACE system technology makes it a smart worker, too.

OPTIONAL ACE SYSTEM TECHNOLOGY

- Provides measurement and documentation
- Precisely measures and evaluates material stiffness
- ACE^{pro} continuously adjusts frequency and amplitude depending on compaction measurements
- ACE^{pro} eliminates drum jumping and therefore minimizes the risk of over-compaction or material destruction
- ACE^{force} shows compaction progress via operator-guiding function
- Includes ADS documentation software with office analyzing feature
- Can utilise all major manufacturers GPS products to provide mapping and operator guidance

INDUSTRY-LEADING COMPACTION

- Utilises effective Ammann vibratory system
- Offers varied amplitude settings
- Drives energy into the material and away from the operator

OPERATOR FRIENDLY

- Clear dashboard layout enables easy and safe operation
- Operator platform is mounted on vibration-free rubber mounts for highest comfort

EASY ACCESS

- Easily accessible maintenance points
- Optionally centralized draining points for service fluids

APPLICATIONS

- Medium and large jobsites
- Transport construction (motorways, railways, airfields)
- Water resources construction (rockfill, dams) and building construction (industrial zones, harbours)

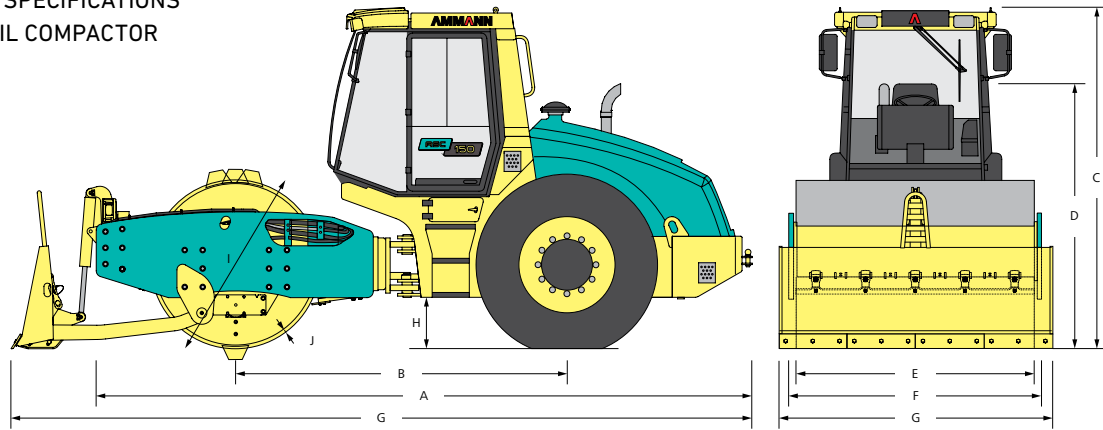
MAXIMUM RECOMMENDED COMPACTED LIFT THICKNESS AT OPTIMAL WORKING CONDITIONS

	Rockfill	Sand / Gravel	Mixed Soils	Silt	Clay
ASC 150 D	* 1.2 m (47 in)	* 0.8 m (31 in)	* 0.7 m (28 in)	0.5 m (20 in)	0.3 m (12 in)
ASC 150 PD	–	–	* 0.7 m (28 in)	* 0.5 m (20 in)	* 0.35 m (14 in)

* Recommended drum type

AMMANN

TECHNICAL SPECIFICATIONS
ASC 150 SOIL COMPACTOR
Tier 3



DIMENSIONS

		D	PD
A	MACHINE LENGTH	5900 mm (232.3 in)	5900 mm (232.3 in)
B	WHEELBASE	2930 mm (115.4 in)	2930 mm (115.4 in)
C	MACHINE HEIGHT	3075 mm (121.1 in)	3075 mm (121.1 in)
D	MACHINE HEIGHT (REMOVED CAB / ROPS)	2420 mm (95.3 in)	2420 mm (95.3 in)
E	DRUM WIDTH	2130 mm (83.8 in)	2130 mm (83.8 in)
F	MACHINE WIDTH	2258 mm (88.9 in)	2258 mm (88.9 in)
G	MACHINE LENGTH (BLADE)	–	6650 mm (261.8 in)
H	GROUND CLEARANCE	440 mm (17.3 in)	440 mm (17.3 in)
I	DRUM DIAMETER	1500 mm (59.1 in)	1640 mm (64.6 in)
J	DRUM SHELL THICKNESS	40 mm (1.6 in)	28 mm (1.1 in)
K	MACHINE WIDTH (BLADE)	–	2441 mm (96.1 in)

MISCELLANEOUS

BRAKES OPERATING	Hydrostatic
BRAKES PARKING	Multiple-disc spring brake
BRAKES EMERGENCY	Multiple-disc spring brake
FUEL TANK CAPACITY	410 l (108.3 gal)
VOLTAGE	24 V

COMPACTION FORCES

	D / HT / HD	PD / HTPD / HDPD
FREQUENCY I	29 Hz (1740 VPM)	29 Hz (1740 VPM)
FREQUENCY II	35 Hz (2100 VPM)	35 Hz (2100 VPM)
FREQUENCY ACE	23 Hz (13800 VPM) / 35 Hz (2100 VPM)	23 Hz (13800 VPM) / 35 Hz (2100 VPM)
AMPLITUDE I	2 mm (0.079 in)	2 mm (0.079 in)
AMPLITUDE II	1 mm (0.039 in)	1 mm (0.039 in)
AMPLITUDE ACE MIN./MAX.	– / 2.5 mm (0.098 in)	– / 2.5 mm (0.098 in)
CENTRIFUGAL FORCE I	325 kN	325 kN
CENTRIFUGAL FORCE II	237 kN	236 kN
CENTRIF. FORCE ACE MIN./MAX.	– / 388/26 Hz	– / 388/26 Hz

ENGINE

MANUFACTURER	Cummins QSB 4.5-C160
POWER ACCORDING TO ISO 3046-1	119 kW (160 HP)
MAXIMUM TORQUE	624/1500 Nm/rpm
ENGINE COMPLIES WITH EMISSION REGULATIONS	EU Stage IIIA, U.S. EPA Tier 3

WEIGHT & OPERATING CHARACTERISTICS

	D	HT	HD	PD	HTPD	HDPD
OPERATING WEIGHT	14 580 kg (32 140 lb)	15 820 kg (34 880 lb)	15 820 kg (34 880 lb)	14 490 kg (31 940 lb)	15 720 kg (34 660 lb)	15 720 kg (34 660 lb)
MAXIMUM WEIGHT	18 460 kg (40 700 lb)	18 500 kg (40 790 lb)	18 500 kg (40 790 lb)	16 670 kg (36 750 lb)	16 700 kg (36 820 lb)	16 700 kg (36 820 lb)
STATIC LINEAR LOAD	48.7 kg/cm (272.7 lb/in)	48.9 kg/cm (273.8 lb/in)	48.9 kg/cm (273.8 lb/in)	–	–	–
MAX. TRANSPORT SPEED	10 km/h (6.21 MPH)	7 km/h (4.35 MPH)	8.1 km/h (5.03 MPH)	10.1 km/h (6.28 MPH)	7 km/h (4.35 MPH)	8.2 km/h (5.1 MPH)
MAX. WORKING SPEED	4.5 km/h (2.8 MPH)	3.15 km/h (1.96 MPH)	3.6 km/h (2.24 MPH)	4.6 km/h (2.86 MPH)	3.15 km/h (1.96 MPH)	3.7 km/h (2.3 MPH)
CLIMBING ABILITY	45 %	60 %	55 %	45 %	60 %	55 %
TURNING RADIUS INNER (EDGE)	3715 mm (146.3 in)	3715 mm (146.3 in)	3715 mm (146.3 in)	3715 mm (146.3 in)	3715 mm (146.3 in)	3715 mm (146.3 in)

STANDARD EQUIPMENT

- Operator platform with guard rails
- Smooth drum with steel scrapers
- 2 vibration frequencies and amplitudes
- Inter wheel Differential-lock
- Manual tilting of hood/cab/platform
- Working headlights (front and rear)

OPTIONAL EQUIPMENT

- CE conformity
- Cab ventilated and heated (incl. FOPS I)
- ROPS structure
- Air condition for Cab version
- Ammann Traction Control (ATC)
- Padfoot drum or padfoot segments
- Dozer blade
- HD and HT versions
- ACE^{pro} Intelligent Compaction system with measuring (absolute values), automatic regulation of compaction performance (frequency and amplitude) and ADS documentation system
- ACE^{force} compaction measurement (absolute values) and ADS documentation system
- GPS mapping for ACE systems

E-series

Articulated Dump Trucks

B25E | B30E



Blu@dvantage™

BELL

E is for evolution

Your business is our business. Bell Articulated Dump Trucks haul more, for longer at the lowest cost-per-ton to deliver more on your profit margins.

As a global leader in Articulated Dump Trucks, Bell Equipment brings you the world class E-series range. The evolutionary E-series is packed with class leading features that deliver production boosting payloads, lower daily operating costs, superior ride quality and uncompromised safety standards. Bell E-series ADTs will give your business the competitive edge you need.



Specifications	B25E	B30E
Gross power	210 kW (282 hp)	240 kW (322 hp)
Operating mass		
Empty	18,763 kg (41,365 lb)	19,216 kg (42,365 lb)
Loaded	42,763 kg (94,276 lb)	47,216 kg (104,093 lb)
Rated payload	24,000 kg (52,911 lb)	28,000 kg (61,729 lb)
2:1 heaped capacity	15 m ³ (19,5 yd ³)	17,5 m ³ (22,9 yd ³)

Extensive use of high-strength, lightweight materials give these trucks the best payload-to-mass ratios and hauling efficiencies in each class.

With their oscillating frame and high-floatation tyres, Bell trucks won't leave you stuck on muddy, rutted or hilly terrain.

The redesigned sound-suppressed cab features fatigue-beating controls, advanced diagnostic monitor and a sealed-switch module for convenient, fingertip operation of numerous functions.

Fuel-efficient emission-certified engines deliver clean power without compromise in all conditions. Leading-edge emissions technology ensures rapid engine response and dependable cold-start performance.

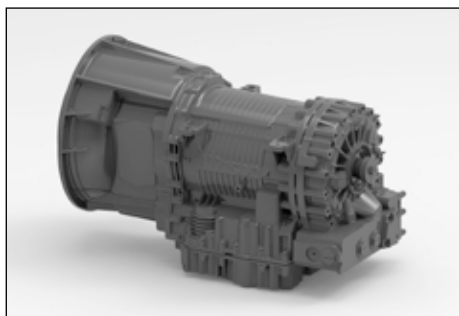


The new E-series range takes ADT functionality to new industry standards, with customer-focused enhancements and the highest level of automated machine protection available.

Through substantial investments in Research and Development and employing industry leading technology, advancements have been made in the key areas of performance and fuel efficiency – helping you to move more material at lower operating costs and environmental impact.

Building on pedigree

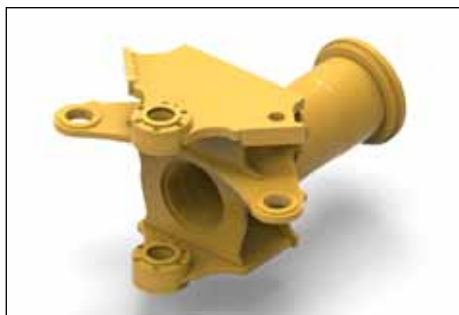
Building on from the D-series platform, Bell Equipment's evolutionary approach to design delivers optimised power-to-weight ratio and legendary fuel efficiency.



Planetary powershift transmission optimises shift points to match conditions and vehicle weight while protecting the transmission from operator error and abuse.



The transfer case inter-axle differential delivers equal torque to each axle when traction is favourable. When conditions deteriorate, the diff-lock automatically engages to deliver torque to the tyres that can best use it.



High-strength steel and widely spaced taper roller bearings in the articulation area enhance long-term durability.



A tailgate is available as an option for better material retention. The tailgate opens as the bin is raised for dumping. Spring steel straps maintain positive seal throughout the haul, ensuring minimal material is lost.



- Limited-slip differentials and automatic transfer case diff-lock provide real Automatic Traction Control.
- The best-in-class payload-to-weight ratio means that more of your fuel cost is spent moving the material, not running the machine, decreasing your cost per tonne.
- An industry leading, fully automatic six-speed planetary transmission with torque converter lock-up maximises fuel efficiency.

- Automatic retardation slows the truck when the operator backs off the accelerator pedal for more confidence on steep grades and enhanced brake life.
- Electronic unit injection fuel system provides high injection pressures even at low engine speed for improved cold-starting ability, low-speed response, and reduced emissions.

- The short front end provides the best approach angle that allows these ADTs to attack steep terrain.
- High-travel suspension keeps all tyres in constant contact with the ground, for optimum traction.

gree

- Improved payloads, faster haul cycles and industry leading fuel economy all help you move more material at a lower-cost-per-tonne than your competitors.

- Class leading payload-to-weight ratio means that more of your fuel cost is spent moving the material and not running the machine - for maximum productivity and profitability.

- With a high oscillating frame joint, articulated steering, and high-floatation tyres, these hard working haulers won't let wet weather or steep grades dampen your plans.



Our innovative comfort ride option is available as an option to even further enhance ride comfort by ensuring minimal whole body vibration exposure.

Productivity increases, through increased cycle times, and reduced haul road maintenance are even further benefits of the simple, but extremely successful system. Long haul cycles with rough, hard roads will see maximum benefit, especially on the unladen run.

Uncompromised durability

Built smarter, to work harder. Bell ADTs offer optimised machine weights so you spend more time and money moving material and not running the machine.

With decades of ADT experience, the new Bell E-series articulated hauler is designed and manufactured using purpose built, reliable Bell components best suited for the toughest of conditions. The central oscillation joint, high suspension travel on all axles, and balanced weight distribution provide the agility and ability to navigate hostile terrain.



The high-strength steel chassis delivers strength and rigidity without excess weight.



For comfortable productivity, front-suspension damping helps minimise vibration, while a superior suspension seat reduces the roll often experienced in off-road conditions.



Rough terrain demands tough suspensions. Heavy-duty components absorb shocks and come back for more. You get best-in-class ground clearance, too.



- Hydraulically actuated dry-disc brakes deliver consistent “on-the-mark” braking, even in cold weather. Simplified design makes them easy to maintain.

- Fully enclosed, dual circuit wet disc brakes offer superior braking performance and extended service life essential for wet and muddy conditions. Oil-immersed wet-disc brakes are virtually maintenance-free.

- Viscous direct-drive engine fans provide cooling for the best efficiency.

- Class leading engine braking coupled with automated transmission retardation, provides superior braking power and reduces service brake wear.

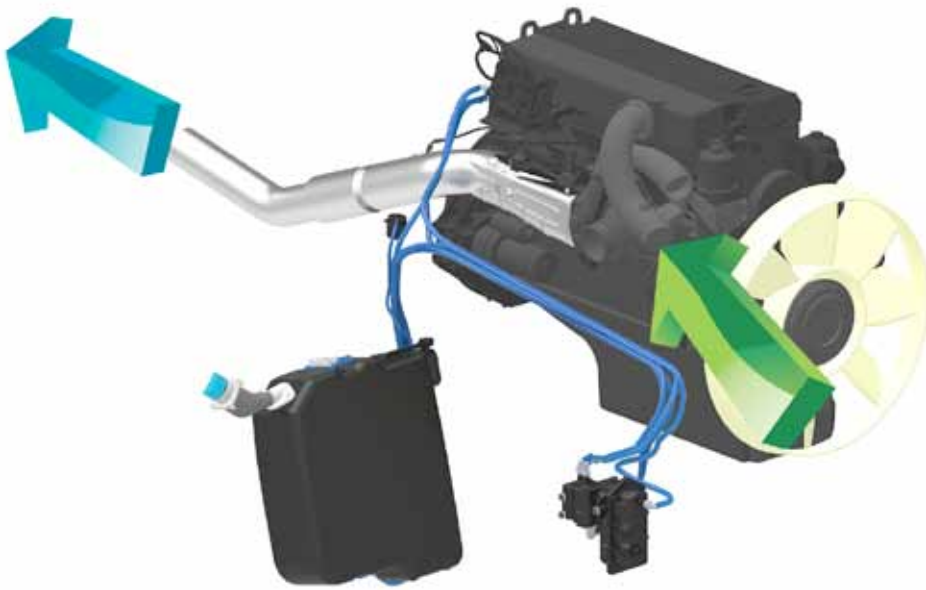
Other uptime-boosting features include world class on-board diagnostics with live stream functionality, solid-state sealed switches and satellite fleet management system.

High-strength welded-alloy steel chassis and reinforced articulation joints, offer superior strength and durability with optimised weight for class leading power-to-weight ratio. Lower machine mass reduces powertrain and structural stress.

Tomorrow's tech today

Blu@dvantage™ is not only healthy for the environment, it's healthy for your wallet too.

An efficiently tuned engine combined with a complete weight optimised machine package ensures that Bell ADTs have a minimal carbon footprint. Diesel exhaust fluid (Adblue™) is injected into the flow of the exhaust gases and urea reacts with the NOx gases in the catalytic convertor to form harmless Nitrogen and water.



Blu@dvantage™

- Reduced emissions
- Improved engine efficiency
- Lower fuel consumption
- Improved power
- Improved torque
- Improved engine response

nnology

- Blu@dvantage™ emissions control coupled with the lowest fuel burn ensures the lowest environmental impact.
- Field tests on the new Blu@dvantage™ system show up to 15% saving in fuel with only a 3-5% usage of urea.



The all-new truck platform has been specifically engineered to handle future emission requirements and take ADT innovation into the next era.

Bell Equipment's evolutionary E-series runs "Blu@dvantage™" SCR-technology (Selective Catalytic Reduction) – an industry leading standard in fuel-efficient emission control, designed specifically for the off-highway market to be compliant to Stage IIIB and Tier 4i. Engine power and fuel consumption have been further optimised through event dependant software that controls retardation, cooling and charging of accumulators.

Operate with ease

Using the latest in automotive technology and state-of-the-art tooling, the E-series takes operator experience to new heights.

Climb into the cab of a Bell ADT and you will feel right at home. Its quiet, spacious interior, ergonomically positioned operator station and climate-controlled cabin is loaded with productivity-boosting comfort and convenience features that minimise operator fatigue and enhance the operator's experience. Modern flowing lines, in keeping with current styling trends on road vehicles, offer unsurpassed levels of visibility.

From the state-of-the-art 10" full colour screen and automotive mouse interface with centrally located sealed display unit to air suspension seat, tilt/telescoping steering wheel and optional CD player with high-output speakers, the E-series provides everything your operators need to perform at their best.



Easy-to-understand instruments and intuitive controls wrap around the operator so they're easier to view and operate.



A user friendly 10" colour monitor offers vital operating information, safety warnings, detailed diagnostic readings and dump body function settings.



An automotive controller with menu navigation provides for simple operation of machine functions.



Convenient sealed switch module provides fingertip control of numerous productivity enhancing functions including: **Keyless Start, I-Tip, Dump Body Upper Limit, Soft Stop/Hard Stop Selection, Retarder Aggressiveness and Speed Control.**

- The standard sound-suppression package significantly reduces noise levels and operator fatigue.
- The adaptive transmission control adjusts clutch engagement to ensure smooth, consistent shifts throughout the life of the truck.
- A fully adjustable air-suspension seat with variable damping, auto height adjust according to operator weight, pneumatic lumbar support and multipoint harness for class-leading comfort and safety.
- A purpose designed HVAC climate-control system with automotive-style louvres keeps the glass clear and the cab comfortable.
- New machine styling and cabin design improvements, which include full glass access door and high visibility mirror package, provide exceptional all-round visibility.
- You won't find retarder pedals or levers in a Bell truck. Retarder aggressiveness is simply set on the switch pad. Everything else is automatic.

Safety, our business too

By listening to users and delivering on expectations in an ever changing workplace, we provide a truck that leads in application safety with numerous groundbreaking innovations.

Independent features such as Keyless Start, HillAssist, Bin Tip Prevention, Auto Park Application (APA), Standard Turbo Spin Protection and On-Board Weighing (OBW) are still standard on the E-series. For improved safety and productivity, the E-series has an automatic Inter-axle Differential Lock (IDL) giving the vehicle full Automatic Traction Control.



Our quiet operator cabins are ROPS/FOPS certified with an air suspension operator seat. Both the operator and trainer seat have retractable lap belts with automatically locking retractors.



An optional integrated reverse camera and high visibility mirrors ensure superior all round visibility.



Keyless start, driver identity and access codes ensure no unauthorised operation of your equipment.



- Full handrails (to ISO 2876) can be installed to offer improved safety when performing engine checks.
- The park brake automatically applies when neutral is selected and it is not possible to engage neutral at speed. Torque dependent park brake release (hill assist) ensures no roll back on slopes.
- Best-in-class retarder and engine braking automatically applies when the operator lifts his foot off the accelerator. Retarder aggressiveness can be simply adjusted on the sealed switch module ensuring maximum descent control for all conditions.
- All trucks can be set up to automatically sound the horn when starting or switching between forward and reverse.
- Multiple geofencing in challenging site conditions ensures safe machine operation, such as downhill speed control, geofence speed limits and bin restrictions.



The exclusive on-board weighing option presents the operator with real time information on the payload while the machine is being loaded. A 'speed restriction' mode can also be activated if the machine is significantly overloaded.



The incorporation of a pitch and roll sensor in the vehicle prevents bin operation if the truck is in an unsafe position.



Both operator or site selectable maximum speed control allows the vehicle to automatically decelerate and apply the retarder to prevent onsite speeding.

Maximise your uptime

The E-series is loaded with features that make it as easy to maintain as it is to operate. Spend less time and expense getting ready for work and more time getting work done.

Easy-to-reach dipsticks, see-through reservoirs, sight gauges and grouped service points make quick work of the daily routine. Quick-change filters, extended engine and hydraulic oil-service intervals lower daily operating costs and provide superior machine uptime. An industry leading 10" colour monitor offers on-board machine diagnostics as well as automated daily service functionality, this coupled with diagnostic test ports help you troubleshoot and make informed maintenance decisions on site.

- Automated daily service checks can be done with ease and comfort from inside the operator station using the 10" colour LCD monitor and sealed display controller.
- The load-sensing hydraulic system was designed with simplicity in mind, while maintaining efficiency. Fewer components for improved reliability and serviceability.
- Extended engine transmission and hydraulic oil-change for increased uptime and lower operating cost.
- Available environmental drains allow quick, no-spill changes.
- Your Bell Service Centre has the parts and backup you need to stay productive and offers a wide variety of preventative maintenance and support programmes to help you control costs.



If something goes wrong, the diagnostic monitor provides service codes and supporting info to help diagnose the problem.



The cab can be tilted in minutes without special tools, for convenient service access to drivetrain components.



An in-cab load centre simplifies fuse replacement. Fewer relays, connectors and harnesses mean higher reliability.



See-through fluid reservoirs and sight gauges let you check fluid levels at a glance.

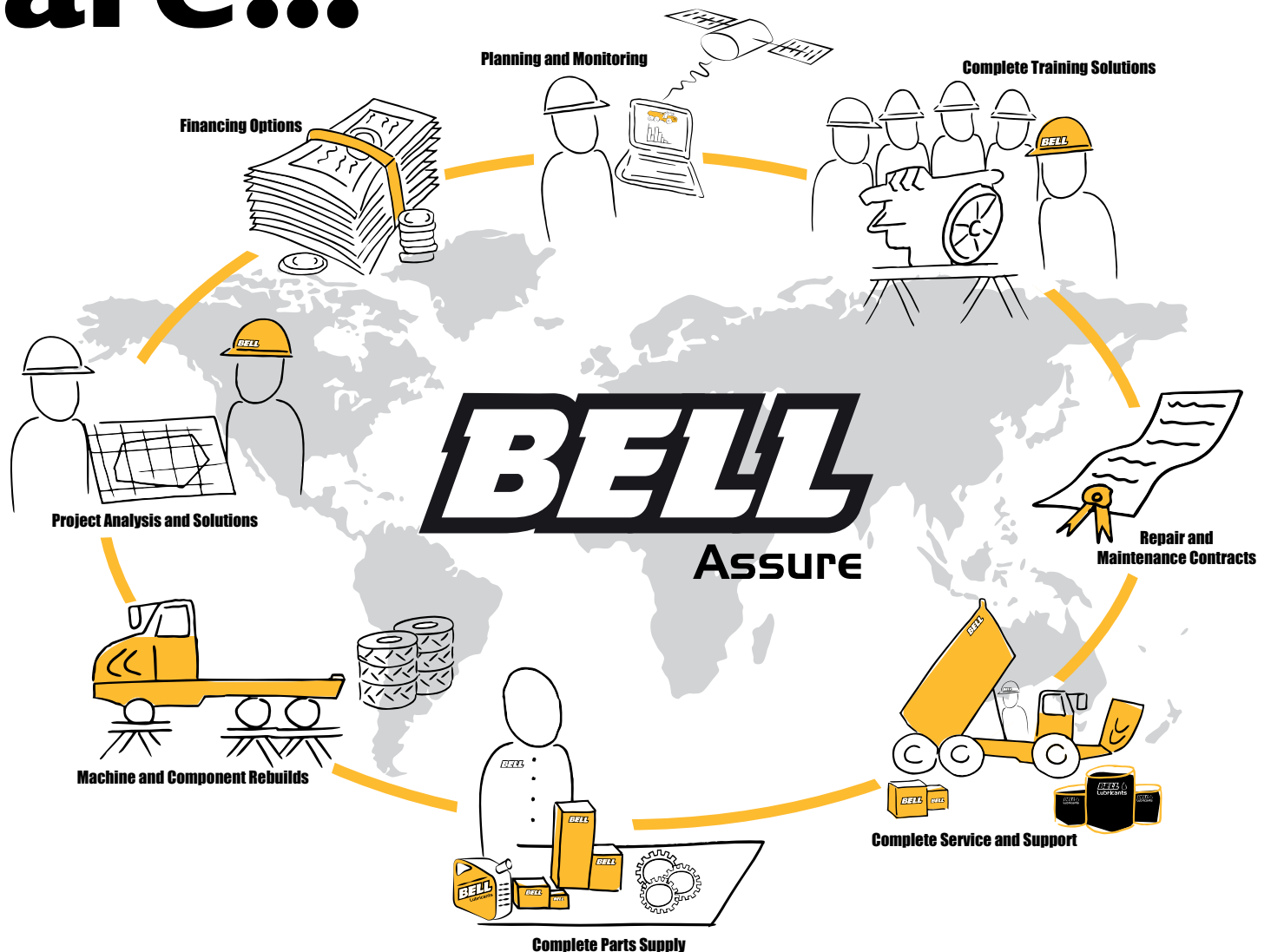


Easily accessible test ports allow technicians to troubleshoot problems more quickly.



The centralised lube bank places difficult-to-reach nipples within reach. The convenient lube chart helps ensure that nothing gets overlooked.

Where ever you are...



Through our own network as well as approved dealers and strategic alliances we ensure supply and support to the global market.

Develop a lasting and meaningful partnership with Bell Equipment through Bell Assure, your tailor-made support structure furnished with all the after-sales tools you need to give you best value, peace of mind and a unique after-sales experience.

...we have you covered

Smarter fleet management



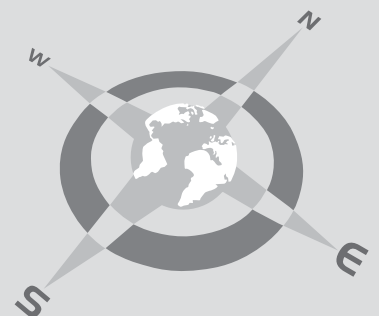
BELL
Fleetm@tic

Cutting edge technology, helping you run your fleet smarter. Providing accurate, up-to-date operational data, production data and diagnostic data.

Machine operational data is processed and compiled into useful production and performance statistics, accessible via the Bell Fleetm@tic website. These reports are also automated and emailed directly to you. The key to a productive and profitable fleet, lies in the ability to monitor and manage your machines and operators efficiently.

Fleetm@tic:

- Maximise productivity
- Generate machine utilisation reports
- Identify operator training requirements
- Pro-active maintenance planning
- Receive machine health data
- Implement safety features
- Protect investments
- Receive real time geospatial data



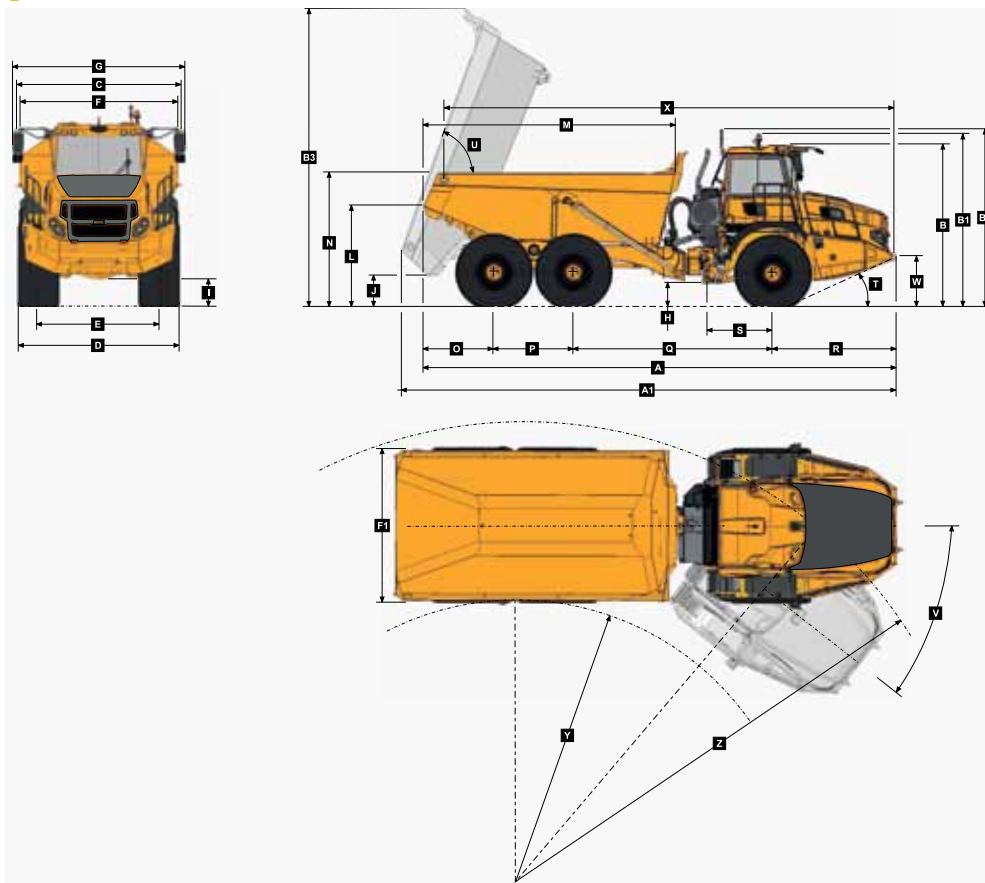
Technical Data - B25E

ENGINE Mercedes Benz OM 926 LA Gross Power 210 kW (282 hp) @ 2,200 rpm Net Power 203 kW (272 hp) @ 2,200 rpm Torque 1,120 Nm (826 lbf) @ 1,200 -1,600 rpm Displacement 6,37 litres (388 cu.in) Fuel Tank Capacity 379 l (100 US gal) Auxilliary Brake Exhaust brake Engine Valve Brake (EVB) AdBlue™ Tank Capacity 31 l (8,2 US gal) Certification OM 926 LA meets EU Stage IIIB/EPA Tier 4i emissions regulations.	AXLES Bell 15T Axle housings: fabricated steel Differentials: high input limited slip Final drive: outboard planetary. BRAKING SYSTEM Service Brake Dual circuit, full hydraulic actuation Dry disc brakes with 8 calipers (4F, 2M, 2R). Maximum Brake Force 184 kN (41,400 lbf) with standard tyres. Park & Emergency Spring applied air released, driveline mounted disc. Maximum Brake Force 195 kN (43,900 lbf) Auxilliary Brake Automatic exhaust brake and Engine Valve Brake (EVB). Variable Adjustable Hydraulic retarder in transmission. Maximum Retardation 539 kW (722 hp)	STEERING SYSTEM Double-acting steering cylinders with ground driven emergency steering pump. Lock to lock turns 4.1 Steering Angle 45° DUMPING SYSTEM Double-acting, single stage, dump cylinders. Raise Time 14,5 s Lowering Time 7,5 s Tipping Angle 70° PNEUMATIC SYSTEM Air drier with heater and integral unloader valve, serving park brake and auxilliary functions. System Pressure 810 kPa (117 psi) ELECTRICAL SYSTEM Voltage 24 V Battery Type Two AGM (Absorption Glass Mat) type. Battery Capacity 2 X 75 Ah Alternator Rating 28 V 80 A VEHICLE SPEEDS <table><tr><td>1st</td><td>7 km/h</td><td>4 mph</td></tr><tr><td>2nd</td><td>15 km/h</td><td>9 mph</td></tr><tr><td>3rd</td><td>23 km/h</td><td>14 mph</td></tr><tr><td>4th</td><td>35 km/h</td><td>22 mph</td></tr><tr><td>5th</td><td>47 km/h</td><td>29 mph</td></tr><tr><td>6th</td><td>50 km/h</td><td>31 mph</td></tr><tr><td>R</td><td>7 km/h</td><td>4 mph</td></tr></table> CAB ROPS/FOPS certified 76 dBA internal sound level measured according to ISO 6396.	1st	7 km/h	4 mph	2nd	15 km/h	9 mph	3rd	23 km/h	14 mph	4th	35 km/h	22 mph	5th	47 km/h	29 mph	6th	50 km/h	31 mph	R	7 km/h	4 mph
1st	7 km/h	4 mph																					
2nd	15 km/h	9 mph																					
3rd	23 km/h	14 mph																					
4th	35 km/h	22 mph																					
5th	47 km/h	29 mph																					
6th	50 km/h	31 mph																					
R	7 km/h	4 mph																					
TRANSMISSION Allison 3500PR ORS Layout Engine mounted Gear Layout Constant meshing planetary gears Gears Automatic: 6 Foward, 1 Reverse Clutch Type Hydraulically operated multidisc Control Type Electronic Torque Control Hydrodynamic, with lock-up in all gears.	WHEELS Type Radial Earthmover Tyre 23.5R25 FRONT SUSPENSION Semi-independent, leading A-frame supported by hydro-pneumatic suspension struts. REAR SUSPENSION Pivoting walking beams with laminated rubber suspension blocks. HYDRAULIC SYSTEM Variable displacement with load sensing. Flow 165 l/min (44 gal/min) Pressure 28 MPa (4,061 psi) Filter 5 microns																						
TRANSFER BOX Bell GR 8100 Layout Remote mounted Gear Layout Three in-line helical gears Output Differential Interaxle torque proportional, 67/33 Automatic inter axle diff lock.																							

Load Capacity & Ground Pressure

OPERATING WEIGHTS		GROUND PRESSURE				LOAD CAPACITY		OPTION WEIGHTS	
UNLADEN	kg (lb)	LADEN (No sinkage)		LADEN (15% sinkage)		BODY	m³ (yd³)		kg (lb)
Front	9,673 (21,325)	23.5R25	kPa (Psi)	23.5R25	kPa (Psi)	Struck Capacity	12 (15,7)	Bin liner	997 (2,198)
Middle	4,572 (10,080)					SAE 2:1 Capacity	15 (19,5)	Tailgate	735 (1,620)
Rear	4,518 (9,960)	Middle	344 (50)	Middle	221 (32)	SAE 1:1 Capacity	18 (23,5)	Extra wheelset	565 (1,246)
Total	18,763 (41,365)	Rear	344 (50)	Rear	221 (32)	SAE 2:1 Capacity with Autogate	15,5 (20,3)		
LADEN									
Front	11,799 (26,012)								
Middle	15,528 (34,233)					Rated Payload	24,000 kg		
Rear	15,436 (34,031)						(52,911 lbs)		
Total	42,763 (94,276)								

Dimensions

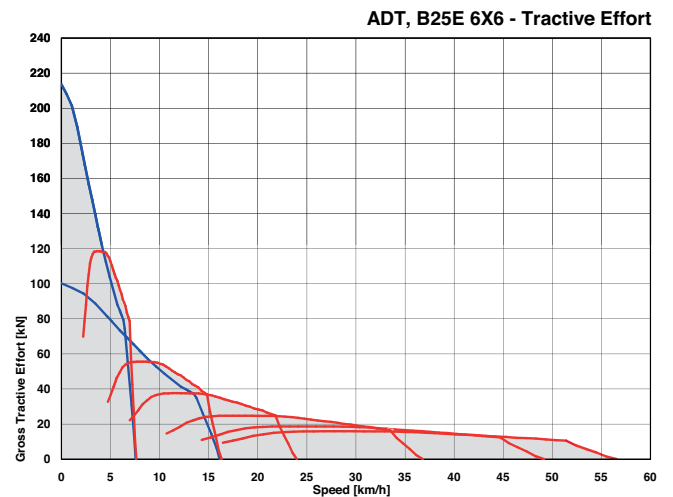
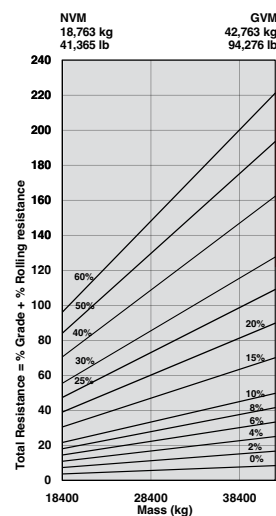


Machine Dimensions

A	Length - Transport Position	9953 mm
A1	Length - Bin Fully Tipped	10324 mm
B	Height - Transport Position	3426 mm
B1	Height - Rotating Beacon	3661 mm
B2	Height - Load Light	3747 mm
B3	Bin Height - Fully Tipped	6262 mm
C	Width over Mudguards	2985 mm
D	Width over Tyres - 23.5R25	2940 mm
D1	Width over Tyres - 750/65 R25	2998 mm
E	Tyre Track Width - 23.5R25	2356 mm
E1	Tyre Track Width - 750/65 R25	2260 mm
F	Width over Bin	2700 mm
F1	Width over Tailgate	2998 mm
G	Width over Mirrors - Operating Position	3260 mm
H	Ground Clearance - Artic	537 mm
I	Ground Clearance - Front Axle	488 mm
J	Ground Clearance - Bin Fully Tipped	710 mm
K	Ground Clearance - Under Run Bar	N/A
L	Bin Lip Height - Transport Position	2176 mm
M	Bin Length	5272 mm
N	Load over Height	2763 mm
O	Rear Axle Centre to Bin Rear	1500 mm
P	Mid Axle Centre to Rear Axle Centre	1670 mm
Q	Mid Axle Centre to Front Axle Centre	4181 mm
R	Front Axle Centre to Machine Front	2602 mm
S	Front Axle Centre to Artic Centre	1362 mm
T	Approach Angle	25 °
U	Maximum Bin Tip Angle	70 °
V	Maximum Articulation Angle	45 °
W	Front Tie Down Height	1075 mm
X	Machine Lifting Centres	9477 mm
Y	Inner Turning Circle Radius - 23.5R25	4110 mm
Y1	Inner Turning Circle Radius - 750/65 R25	4081 mm
Z	Outer Turning Circle Radius - 23.5R25	8000 mm
Z1	Outer Turning Circle Radius - 750/65 R25	8029 mm

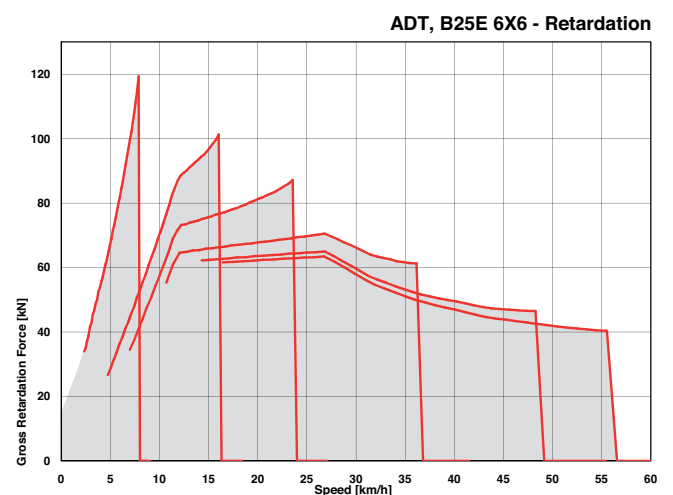
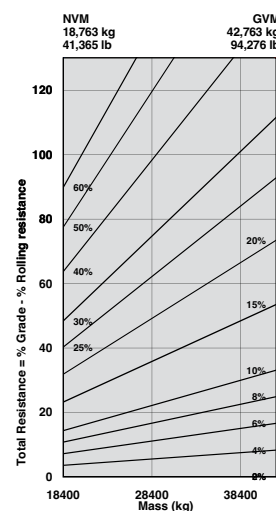
Gradeability / Rimpull

1. Determine tractive resistance by finding intersection of vehicle mass line and grade line. NOTE: 2% typical rolling resistance is already assumed in chart and grade line.
2. From this intersection, move straight left across charts until line intersects rimpull curve.
3. Read down from this point to determine maximum speed attained at that tractive resistance.



Retardation

1. Determine retardation force required by finding intersection of vehicle mass line.
2. From this intersection, move straight left across charts until line intersects the curve. NOTE: 2% typical rolling resistance is already assumed in chart.
3. Read down from this point to determine maximum speed.



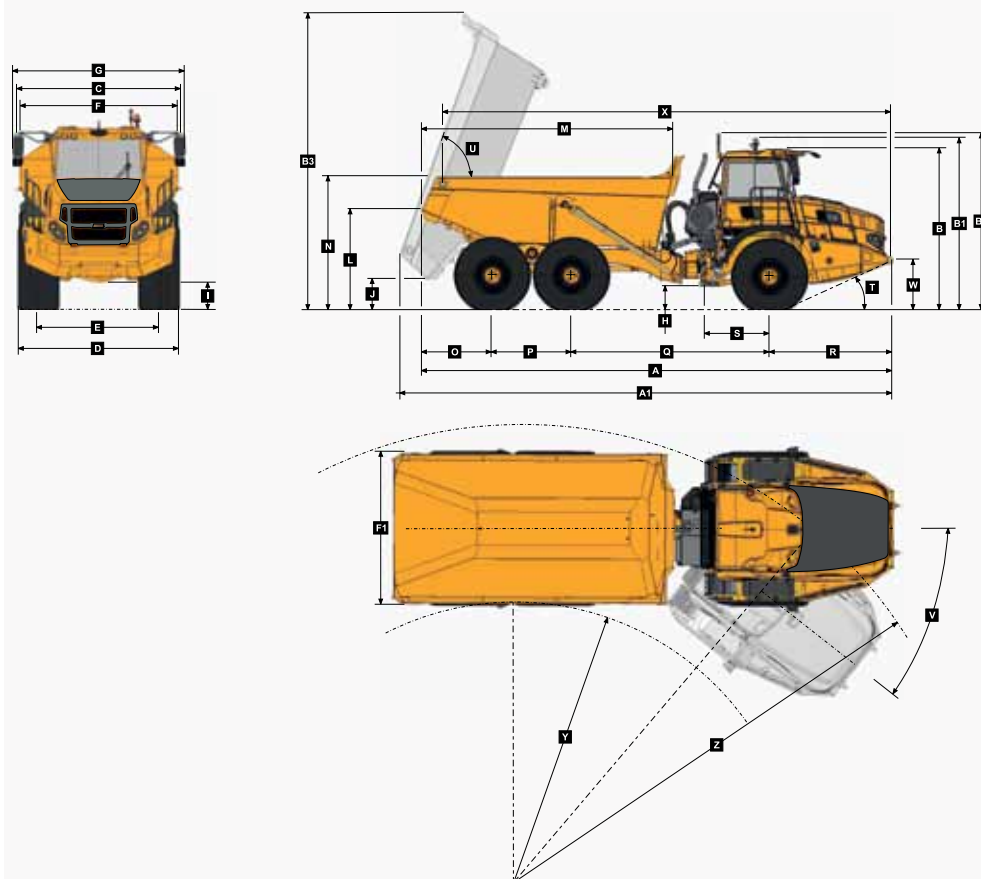
Technical Data - B30E

ENGINE Mercedes Benz OM 926 LA Gross Power 240 kW (322 hp) @ 2,200 rpm Net Power 232 kW (311 hp) @ 2,200 rpm Torque 1,300 Nm (959 lbf ft) @ 1,200 -1,600 rpm Displacement 7,2 litres (439 cu.in) Fuel Tank Capacity 379 l (100 US gal) Auxilliary Brake Exhaust brake Engine Valve Brake (EVB) AdBlue™ Tank Capacity 31 l (8,2 US gal) Certification OM 926 LA meets EU Stage IIIB/EPA Tier 4i emissions regulations.	AXLES Bell 18T Axle housings: fabricated steel Differentials: high input limited slip Final drive: outboard planetary. BRAKING SYSTEM Service Brake Dual circuit, full hydraulic actuation Dry disc brakes with 8 calipers (4F, 2M, 2R). Maximum Brake Force 184 kN (41,400 lbf) with standard tyres. Park & Emergency Spring applied air released, driveline mounted disc Maximum Brake Force 184 kN (41,400 lbf) Auxilliary Brake Automatic exhaust brake and Engine Valve Brake (EVB). Variable Adjustable Hydraulic retarder in transmission. Maximum Retardation 554 kW (743 hp)	STEERING SYSTEM Double-acting steering cylinders with ground driven emergency steering pump. Lock to lock turns 4.1 Steering Angle 45° DUMPING SYSTEM Double-acting, single stage, dump cylinders. Raise Time 14,5 s Lowering Time 7,5 s Tipping Angle 70° PNEUMATIC SYSTEM Air drier with heater and integral unloader valve, serving park brake and auxilliary functions. System Pressure 810 kPa (117 psi) ELECTRICAL SYSTEM Voltage 24 V Battery Type Two AGM (Absorption Glass Mat) type Battery Capacity 2 X 75 Ah Alternator Rating 28 V 80 A VEHICLE SPEEDS <table><tr><td>1st</td><td>7 km/h</td><td>4 mph</td></tr><tr><td>2nd</td><td>15 km/h</td><td>9 mph</td></tr><tr><td>3rd</td><td>23 km/h</td><td>14 mph</td></tr><tr><td>4th</td><td>35 km/h</td><td>22 mph</td></tr><tr><td>5th</td><td>47 km/h</td><td>29 mph</td></tr><tr><td>6th</td><td>50 km/h</td><td>31 mph</td></tr><tr><td>R</td><td>7 km/h</td><td>4 mph</td></tr></table> CAB ROPS/FOPS certified 76 dBA internal sound level measured according to ISO 6396.	1st	7 km/h	4 mph	2nd	15 km/h	9 mph	3rd	23 km/h	14 mph	4th	35 km/h	22 mph	5th	47 km/h	29 mph	6th	50 km/h	31 mph	R	7 km/h	4 mph
1st	7 km/h	4 mph																					
2nd	15 km/h	9 mph																					
3rd	23 km/h	14 mph																					
4th	35 km/h	22 mph																					
5th	47 km/h	29 mph																					
6th	50 km/h	31 mph																					
R	7 km/h	4 mph																					
TRANSMISSION Allison 3500PR ORS Layout Engine mounted Gear Layout Constant meshing planetary gears Gears Automatic: 6 Foward, 1 Reverse Clutch Type Hydraulically operated multidisc Control Type Electronic Torque Control Hydrodynamic, with lock-up in all gears	WHEELS Type Radial Earthmover Tyre 23.5R25 or 750/65R25 FRONT SUSPENSION Semi-independent, leading A-frame supported by hydro-pneumatic suspension struts. REAR SUSPENSION Pivoting walking beams with laminated rubber suspension blocks. HYDRAULIC SYSTEM Variable displacement with load sensing. Flow 165 l/min (44 gal/min) Pressure 28 MPa (4,061 psi) Filter 5 microns																						
TRANSFER BOX Bell GR 10 000 Layout Remote mounted Gear Layout Three in-line helical gears Output Differential Interaxle torque proportional, 67/33 Automatic inter axle diff lock.																							

Load Capacity & Ground Pressure

OPERATING WEIGHTS		GROUND PRESSURE				LOAD CAPACITY		OPTION WEIGHTS	
UNLADEN	kg (lb)	LADEN-No sinkage		LADEN-15% sinkage		BODY	m³ (yd³)		kg (lb)
Front	9,743 (21,480)	23.5R25	kPa (Psi)	23.5R25	kPa (Psi)	Struck Capacity	14 (18,3)	Bin liner	1,124 (2,478)
Middle	4,763 (10,501)	Front	279 (41)	Front	175 (25)	SAE 2:1 Capacity	17,5 (22,9)	Tailgate	785 (1,731)
Rear	4,710 (10,384)	Middle	387 (56)	Middle	248 (36)	SAE 1:1 Capacity	21 (27,5)	Extra wheelset	565 (1,246)
Total	19,216 (42,365)	Rear	387 (56)	Rear	248 (36)	SAE 2:1 Capacity with Autogate	18 (23,5)		
LADEN									
Front	12,751 (28,111)	750/65	kPa (Psi)	750/65	kPa (Psi)				
Middle	17,237 (38,001)	Front	229 (33)	Front	149 (22)	Rated Payload	28,000 kg		
Rear	17,228 (37,981)	Middle	316 (46)	Middle	212 (31)		(61,729 lbs)		
Total	47,216 (104,093)	Rear	316 (46)	Rear	212 (31)				

Dimensions

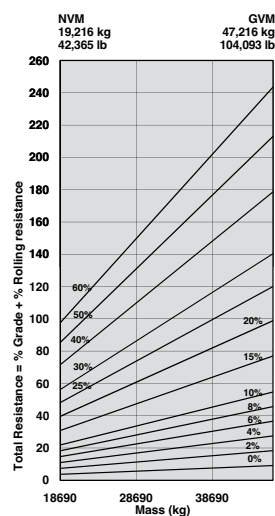


Machine Dimensions

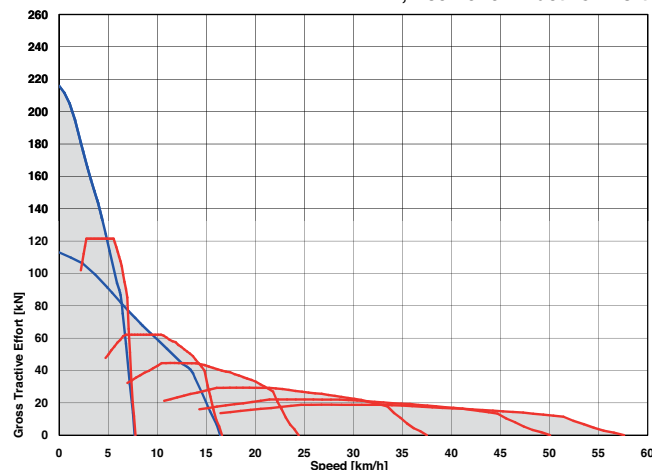
A	Length - Transport Position	9953 mm
A1	Length - Bin Fully Tipped	10404 mm
B	Height - Transport Position	3426 mm
B1	Height - Rotating Beacon	3661 mm
B2	Height - Load Light	3747 mm
B3	Bin Height - Fully Tipped	6318 mm
C	Width over Mudguards	2985 mm
D	Width over Tyres - 23.5R25	2940 mm
D1	Width over Tyres - 750/65 R25	2998 mm
E	Tyre Track Width - 23.5R25	2356 mm
E1	Tyre Track Width - 750/65 R25	2260 mm
F	Width over Bin	2968 mm
F1	Width over Tailgate	3268 mm
G	Width over Mirrors - Operating Position	3260 mm
H	Ground Clearance - Artic	537 mm
I	Ground Clearance - Front Axle	488 mm
J	Ground Clearance - Bin Fully Tipped	710 mm
K	Ground Clearance - Under Run Bar	N/A
L	Bin Lip Height - Transport Position	2176 mm
M	Bin Length	5294 mm
N	Load over Height	2864 mm
O	Rear Axle Centre to Bin Rear	1500 mm
P	Mid Axle Centre to Rear Axle Centre	1670 mm
Q	Mid Axle Centre to Front Axle Centre	4181 mm
R	Front Axle Centre to Machine Front	2602 mm
S	Front Axle Centre to Artic Centre	1362 mm
T	Approach Angle	25 °
U	Maximum Bin Tip Angle	70 °
V	Maximum Articulation Angle	45 °
W	Front Tie Down Height	1075 mm
X	Machine Lifting Centres	9443 mm
Y	Inner Turning Circle Radius - 23.5R25	4110 mm
Y1	Inner Turning Circle Radius - 750/65 R25	4081 mm
Z	Outer Turning Circle Radius - 23.5R25	8000 mm
Z1	Outer Turning Circle Radius - 750/65 R25	8029 mm

Gradeability / Rimpull

1. Determine tractive resistance by finding intersection of vehicle mass line and grade line. NOTE: 2% typical rolling resistance is already assumed in chart and grade line.
2. From this intersection, move straight left across charts until line intersects rimpull curve.
3. Read down from this point to determine maximum speed attained at that tractive resistance.

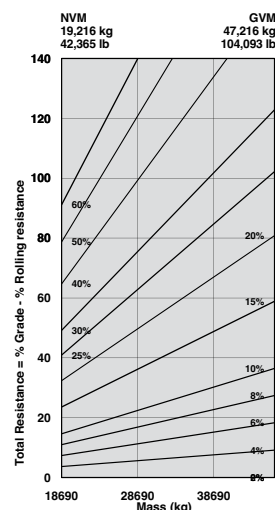


ADT, B30E 6X6 - Tractive Effort

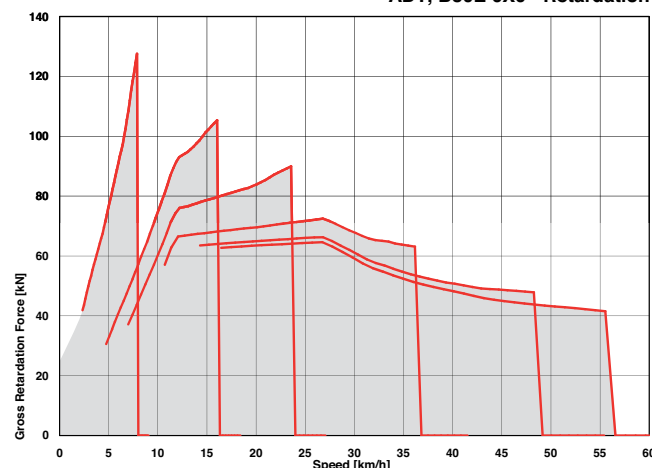


Retardation

1. Determine retardation force required by finding intersection of vehicle mass line.
2. From this intersection, move straight left across charts until line intersects the curve. NOTE: 2% typical rolling resistance is already assumed in chart.
3. Read down from this point to determine maximum speed.



ADT, B30E 6X6 - Retardation



Features and Options

B25E	B30E	● STANDARD	▲ OPTION
		ENGINE	
●	●	Wet-sleeve cylinder liners	
●	●	Engine valve brake and exhaust brake	
●	●	Dual element air cleaner with dust ejector valve	
●	●	Precleaner	
●	●	Water separator	
●	●	Serpentine drive belt with automatic tensioner	
		COOLING	
●	●	Crank-shaft mounted viscous-drive fan	
●	●	Fan guard	
		PNEUMATIC SYSTEM	
●	●	Engine-mounted compressor	
●	●	Air drier with heater	
●	●	Integral unloader valve	
		ELECTRICAL SYSTEM	
●	●	Battery disconnect	
●	●	Drive lights	
▲	▲	Deluxe work lights	
●	●	Electric Hooter	
●	●	Air Horn	
●	●	Reverse alarm	
●	●	Rotating Beacon	
●	●	Pitch Roll Sensor	
		STEERING SYSTEM	
●	●	Ground-driven secondary steering pump	
		CAB	
●	●	ROPS/FOPS certification	
●	●	Tilt cab	
●	●	Gas strut-supported door	
●	●	I-Tip programmable dump-body tip settings	
●	●	Air conditioner	
●	●	Heater	
▲	▲	AM/FM radio/CD player	
●	●	Rear window guard	
●	●	Wiper/washer with intermittent control	
●	●	Tilt and telescoping steering wheel	
●	●	Centre-mount air-suspension seat	
▲	▲	LED work lights	
▲	▲	Rotating beacon: seat belt installation	
▲	▲	Remote engine and machine isolation	
▲	▲	Remote battery jump start	

B25E	B30E	● Standard	▲ Option
		CAB (continued)	
●	●	Retractable seat belt	
●	●	Foldaway trainer seat with retractable seat belt	
●	●	12-volt power outlet	
●	●	Cup holder	
●	●	Cooled/heated lunch box	
●	●	Ashtray	
▲	▲	Electric adjustable and heated mirrors	
●	●	Deluxe 10" colour LCD:	
		Speedometer / Fuel gauge /	
		Transmission oil temperature gauge /	
		Engine coolant temperature gauge /	
		LED function/warning indicators and audible	
		alarm / Transmission gear selection /	
		Tachometer / Battery voltage / Hour meter /	
		Odometer / Fuel consumption / Tip counter /	
		Trip timer / Trip distance / Metric/English units /	
		Service codes/diagnostics	
●	●	Backlit sealed switch module functions with:	
		Wiper control / Lights / Heated mirrors /	
		Retarding aggressiveness / Transfer case	
		differential lock / Transmission gear hold /	
		Dump-body tip limit / Automatic dump-body	
		tip settings / Airconditioner/ Heater controls /	
		Preselected Speed Control	
		DUMP BODY	
●	●	Dump-body mechanical lock	
▲	▲	Body liner	
▲	▲	Tailgate	
▲	▲	Body heater	
▲	▲	Less dump body and cylinders	
		OTHER	
●	●	23.5R25 radial earthmover tyres	
	▲	750/65R25 radial earthmover tyres	
●	●	Remote grease banks	
▲	▲	Automatic greasing	
●	●	Onboard Weighing	
▲	▲	Load lights: Stack	
▲	▲	Comfort Ride Suspension	
▲	▲	Reverse Camera	
▲	▲	Hand Rails	
●	●	Cab Peak	
▲	▲	Lock out kit	



All dimensions are shown in millimetres, unless otherwise stated between brackets.
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BELL INTERNATIONAL: Tel: +27 (0) 35-907 9431

E-mail: marketing@bellequipment.com

Web: www.bellequipment.com



Tel: +61 8-9356-1033



Tel: +49 (0) 6631 / 91-13-0



Tel: +27 (0) 11-928-9700



Tel: +44 (0) 1283-712862



Tel: +33 (0) 5-55-89-23-56



Tel: +7-495-287-80-02



Tel: +34-91-879-60-19



Tel: +1-855-494-2355

**Strong Reliable Machines
Strong Reliable Support**

BELL

KOBELCO

SK140SRLC-5

SK140SRLC



We Save You Fuel
Achieving a Low-Carbon Society

Power Meets Efficiency

With iNDr for even quieter operation.

SK140SR_{LC}





"KOBELCO has made the short rear swing excavator the standard for mid-sized machines. And with ongoing development in innovations such as the iNDr noise reduction system that both shuts out dust and cuts noise, KOBELCO is boosting value and leading the industry with construction machinery ideally suited to the urban environment. The new SK140SRLC retains the compact shape and iNDr system advantages that KOBELCO has pioneered, but it has been fitted with a new and larger engine assembly for improved environmental protection. Low fuel consumption is balanced against increased work performance, and machine durability has been advanced. The new worldwide-model SK140SRLC. Working for the planet."

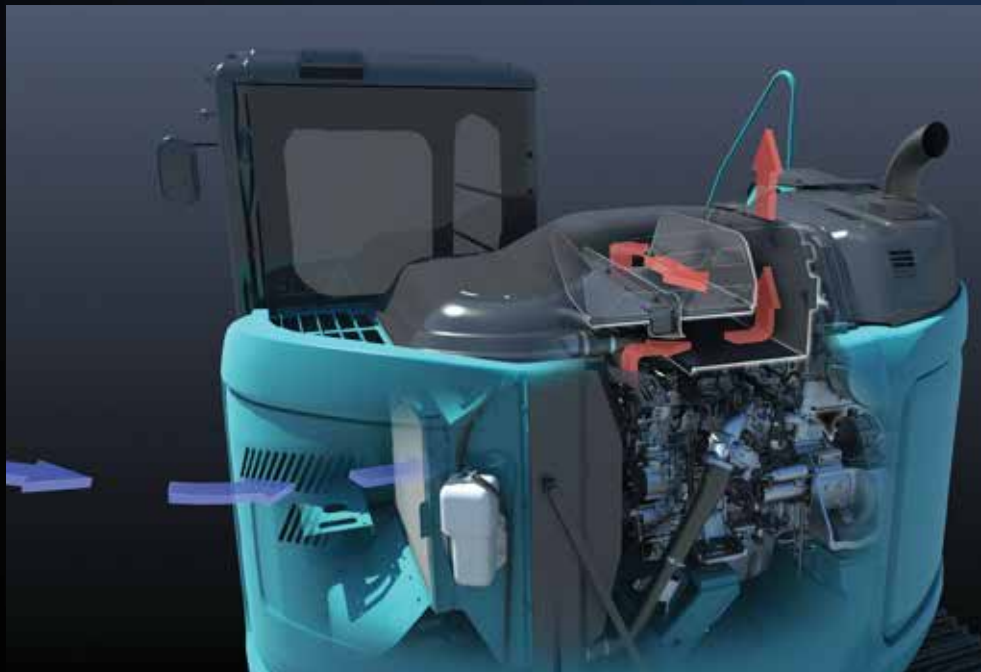


Low noise and easy maintenance mean greater value

A new design approach leads to a revolutionary double

By reviewing the iNDr configuration, Kobelco achieved both great visibility and a compelling design even though the engine compartment has been enlarged to meet TIER IV Final standards, maintaining the value of iNDr.

iNDr absorbs sound energy to minimize noise by making a path of air, which cools down engine, as one engine cooling ducts. The new model is equipped with a selective catalytic reduction (SCR) unit, which required a new design with two offset ducts on top. This allows ample space to absorb engine noise, making these new excavators as quiet as conventional models.



The Results Are Exceptional. The Big Merits:

“Ultimate Low Noise” is achieved by minimizing sound leakage during operation

Noise from the engine and cooling fan is absorbed by the duct, so the machine far surpasses legal requirements. Kobelco calls this system, which exceeds all noise standards, “Ultimate Low Noise,” and it reduces noise to 95dB(A).

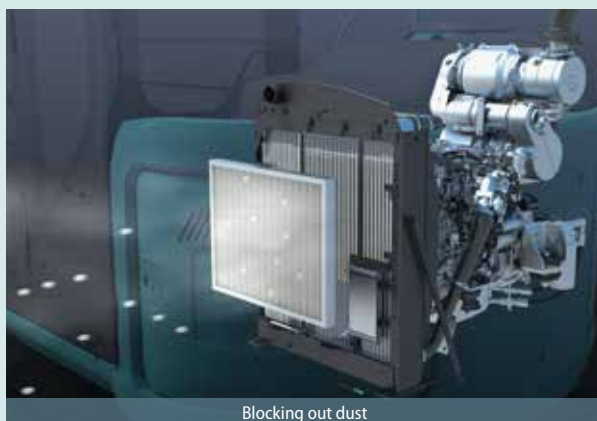


Eliminating dust maintains cooling system performance

The high-density 60-mesh filter* blocks out dust in the intake air. This prevents clogging of the cooling system and the air cleaner, which maintains peak performance. The waveform filter allows air through the tops of the waves while collecting dust at the bottom, ensuring a smooth airflow.



*“60-mesh” means that there are 60 holes formed by horizontal and vertical wires in every square inch of filter.



Easy filter maintenance system simplifies cleaning

Daily inspection consists of a visual check of the iNDr filter only. If it looks dirty, it can be removed and washed without special tools.



than ever offset duct structure



Wide, clear view to the rear

Even with the larger engine compartment, the design minimizes hood height, ensuring an excellent direct view to the rear. In addition, the operator can monitor conditions behind the machine with clear, wide-angle images from the rear-view camera, which comes as standard equipment.



NOx
emissions
cut

New, Environmentally Friendly Engine

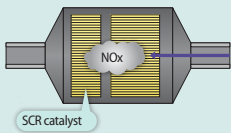
New TIER IV Final compliance engine NEW

The new type of TIER IV Final compliant engine is fitted with a diesel oxidation catalyst (DOC) and an SCR device to control emissions without using a diesel particulate filter (DPF). It has a large-capacity DEF/AdBlue tank, extending intervals between fill-ups.



NOx reduction rate
(Compared to previous models)

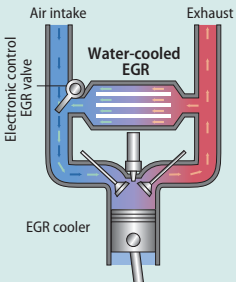
About **88%** decrease



At high temperatures, nitrogen and oxygen combine to produce nitrous oxides (NOx). Reducing the amount of oxygen and lowering the combustion temperature results in much less NOx.

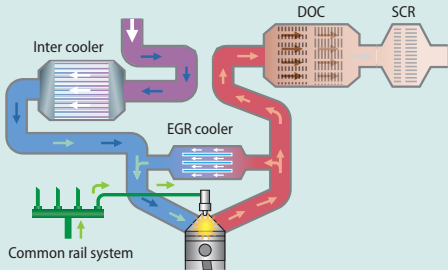
EGR cooler

While ensuring sufficient oxygen for combustion, cooled emission gases are mixed with the intake air and recirculated into the engine. This reduces oxygen content and lowers combustion temperature.



A newly developed engine raises the bar for construction machinery

The latest Kobelco construction machinery uses an ISUZU engine that is renowned for environmental performance, and has been tuned specifically for use in Kobelco machines. This new, environmentally friendly engine changes conventional wisdom on balancing powerful performance with eco-friendliness. Eliminating the DPF makes maintenance faster and easier than ever.

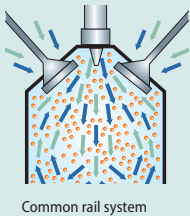


PM
emissions
cut

Particulate matter (PM) is mostly soot resulting from incomplete combustion; Improved combustion efficiency reduces PM emissions. filter further reduces PM emissions.

Common rail system

High-pressure injection atomizes the fuel, and more precise injection improves combustion efficiency. This also contributes to better fuel economy.



Unbeatable Cost Performance

Greater Work Capacity:
Exceeding Expectations in Productivity

Improved Fuel Efficiency Contributes to High Performance

Superior Digging Volume

This excavator offers dynamic digging force even as it minimizes fuel consumption rates, achieving class-leading work volume. H-mode with an increased torque setting delivers about 5.2% greater digging volume.

■ Digging volume/hour

(Compared to H-mode on previous models)



■ Max. bucket digging force

90.1 kN (ISO 6015)

87.8 kN (SAE J1179)

■ Max. arm crowding force

64.4 kN (ISO 6015)

62.3 kN (SAE J1179)



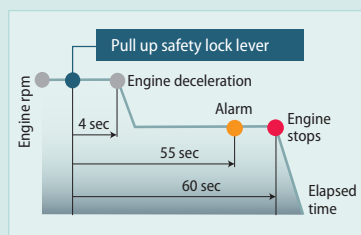
Energy-efficient System

ECO-mode: engineered for economy

Kobelco's ECO-mode maximizes the operating efficiency of the engine and other components to achieve much greater fuel efficiency. Just press a button to choose the operation mode best suited to the task at hand and the working conditions.

■ Optimal operation with three modes

- H** H-mode • • • Maximum power for maximum productivity on your toughest jobs
- S** S-mode • • • Ideal balance of productivity and fuel efficiency for a range of urban engineering projects
- E** ECO-mode • • • Minimum fuel consumption for utility projects and other work that demands precision



AIS (Auto Idle Stop)

If the boarding/disembarking lever is left up, the engine will stop automatically. This eliminates wasteful idling during standby, saving fuel and reducing CO₂ emissions as well.

Hydraulic system engineered to reduce energy loss

Kobelco's proprietary hydraulic systems offer hydraulic line positioning that reduces friction resistance and valves designed for higher efficiency, minimizing energy loss throughout the system.

**Always and forever.
Yesterday, today, and tomorrow.
We're obsessed with fuel efficiency.**

Over the past 8 years, KOBELCO has achieved an average fuel consumption reduction of 21% across its fleet. We vow to lead the industry in improving fuel efficiency.

■ Compared to SK135SRLC-2 (2008)

E ECO-mode (SK140SR-5) • • • About **21%** improvement

Ideal for Urban Work Sites Provides a Broad Working Range, Even in Close Quarters

Minimal swing radius improves efficiency

The tail of the upper body extends very little past the back end of the crawlers, so the operator can concentrate on the job at hand. This also reduces the risk of collision damage.

Easy workability in less than 3,890 mm of space

The compact design allows continuous 180° dig, swing, and load operations within a working space of just 3.89m.

Seamless feeling, smooth combined operations

The machines have inherited the various systems that make inching and combined operations easy and accurate. Leveling and other combined operations can be carried out with graceful ease.

Swing operation cuts cycle times

11.0-minute-1 speedy cycle times. Dig, swing, load operations—continuous operation makes any task faster.

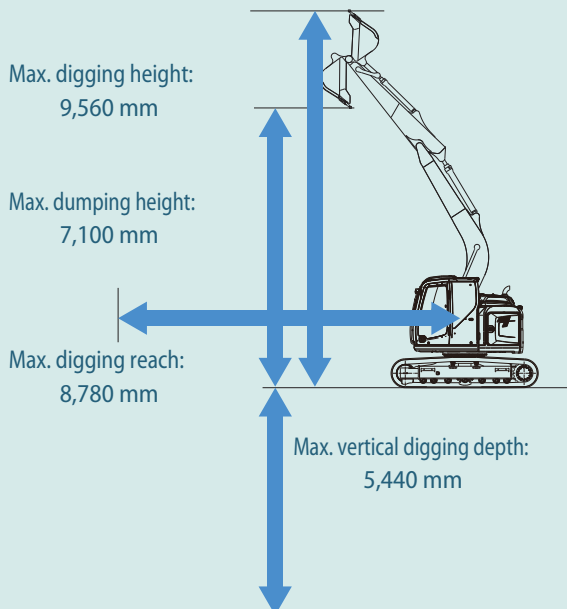
Strong drawbar pulling force produces powerful travel capabilities

These new excavators handle steep slopes and rough roads with ease while ensuring smooth changes in direction.

Drawbar pulling force: 138 kN

Excellent Working Ranges

Greater working ranges with class-topping vertical digging depth.



Easy hydraulic piping for quick hitch

A quick hitch hydraulic line, which speeds up attachment changes, is available as an standard.

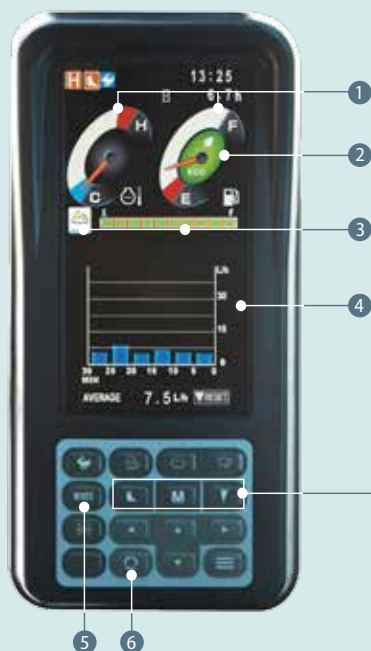


Comprehensive safety and intuitive operation

User-friendly design and enhanced safety means greater efficiency and productivity.



Operator-friendly Features Include Controls that Are Easy to See, Easy to Use



Multi-display in color

Brilliant colors and graphic displays are easy to recognize on the LCD multi-display in the console. The display shows fuel consumption, maintenance intervals, and more.

- ① Analog gauge provides an intuitive reading of fuel level and engine water temperature
- ② Green indicator light shows low fuel consumption during operation
- ③ AdBlue level gauge
- ④ Fuel consumption/Switch indicator for rear camera images
- ⑤ Digging mode switch
- ⑥ Monitor display switch

One-touch attachment mode switch

A simple flick of a switch converts the hydraulic circuit and flow amount to match attachment changes. Icons help the operator to confirm the proper configuration at a glance.

Safety

ROPS cab

ROPS (Roll-Over-Protective Structure)-compliant cab clears ISO standards (ISO-12117-2: 2008) and ensures greater safety for the operator should the machine tip over.



Top Guard level II
(Meets ISO10262)



Mounting brackets for vandalism guards are standard equipment (contact your KOBELCO dealer to fit vandalism or front rock guards).

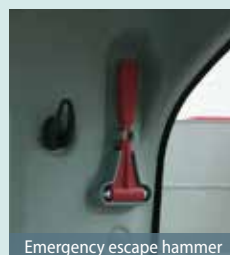
Expanded field of view for greater safety



Left rear view mirror



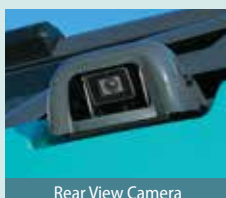
Rear view from cab



Emergency escape hammer

Right side camera fitted as standard NEW

Further to the existing rear-view camera, a camera for the right side is fitted as standard for easy safety checks all round the machine.



Rear View Camera



Right Side Camera



Monitor Rear

Right



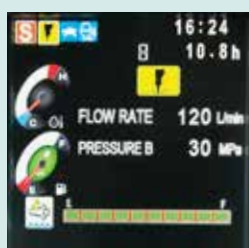
AdBlue accumulation display



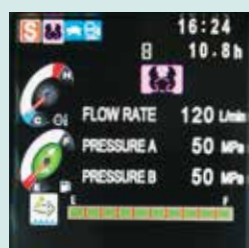
Fuel consumption

	INTERVAL	REMAINING TIME	EXCHANGE DAY
ENGINE OIL	500	495	--/--
FUEL FILTER	500	495	--/--
HYD. FILTER	1000	995	--/--
HYD. OIL	5000	4995	--/--

Maintenance



Breaker mode



Nibbler mode

Cab Design That Puts the Operator First

Wide and open, the cab's interior overflows with features that streamline operation.



Comfort

Big roomy cab

The cube design makes the most of straight lines, so the cab interior is 4% more spacious than before. Operating space literally spreads out before the operator. And the 50Pa airtightness keeps dust outside.

A Light Touch on the Lever Means Smoother, Less Tiring Work

NEW

It takes 25% less effort to work the operation lever, which reduces fatigue over long working hours or continued operations.



Wide-open field of view

On the right side, the large single window has no center pillar, and the whole cab is designed for a wide field of view, giving the operator a direct view ahead and to the left and right. Mirrors in three positions make it easy for the operator to make sure things are safe all around.



Wide doors and ample head clearance mean smooth entry and exit

The control box and safety lock lever tilt up at a larger angle, and the door handle height is positioned for easy cab entry and exit.



More comfortable seat means higher productivity

The cube design makes the most of straight lines, so the cab interior is 4% more spacious than before. Operating space literally spreads out before the operator. And the 50Pa airtightness keeps dust outside.



Seat suspension absorbs vibration



Seat recliner can be pushed back flat



Double slides allow adjustment for optimum comfort

Equipment designed for comfort and convenience

The cab interior offers a host of operator comforts. The seat guarantees comfort whether on the job or at rest, and everything is ergonomically planned and laid out for smooth, stress-free operation.



Bluetooth installed NEW radio

Bluetooth installed to allow connections with iPhones and other devices.



Powerful automatic air conditioner

Also standard is an automatic air conditioner that maintains a comfortable interior environment all year around.



Spacious storage tray



Large cup holder



USB/AUX



12V power outlet

Proper Maintenance Ensures Peak Efficiency

Kobelco machines are designed for quick, simple inspection and maintenance.



Machine Information Display Function

- Displays only the maintenance information that's needed, when it's needed
- Self-diagnostic function provides early-warning detection and display of electrical system malfunctions
- Service-diagnostic function makes it easier to check the status of the machine
- Record function of previous breakdowns including irregular and transient malfunction

Maintenance information display

Easy, on-the-spot maintenance NEW



Urea tank

Urea filler cap is placed on the step for easy access.



Engine maintenance

Setting up maintenance area one step down allows easy to access to the engine.



Handhold

The handrail is placed on the boom side. In addition, the distance between the current handrails was increased to allow easier access to the maintenance port on the upper arm.

Maintenance work, daily checks, etc., can be done from ground level

The layout allows for easy access from the ground for many daily checks and regular maintenance tasks.



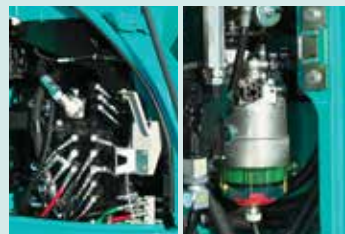
Engine oil filter



Hydraulic pump



iNDr filter/radiator reservoir tank/air cleaner



Control valve/water separator

Fast maintenance requires only a few procedures



Washer fluid tank is located under the cab floor mat.



Engine oil quick-drain valve can be turned without special tool.



Fuel tank features bottom flange and large drain valve.

Quality that Keeps on Shining.

Valuable Assets Take Your Business to the Next Level.

Structural strength and proven reliability mean these machines can deal with heavy work loads and perform in rigorous site environments. From the lifecycle viewpoint, these machines maintain their value throughout their service lives.



Improved Filtration System Reliability

Clean, contaminant-free fuel and hydraulic fluid are essential to stable performance. The improved filtration systems reduce the risk of mechanical trouble and enhance longevity and durability.

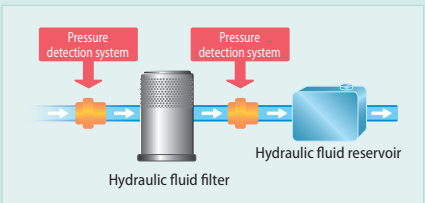
Hydraulic fluid filter NEW

Recognized as the best in the industry, our super-fine filter separates out even the smallest particles. New cover prevents contamination when changing filters.



Hydraulic fluid filter clog detector NEW

Pressure sensors at the inlet and outlet of the hydraulic fluid filter monitor differences in pressure to determine the degree of clogging. If the difference in pressure exceeds a predetermined level, a warning appears on the multi-display, so any contamination can be removed from the filter before it reaches the hydraulic fluid reservoir.



Enlarged fuel filter NEW

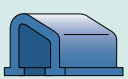
The enlarged fuel filter with built-in water separator maximizes filtering performance.

60%
enlarged

Easy cleaning saves time



Detachable two-piece floor mat has handles for easy removal. The mat's raised edges trap dirt and grit for easy cleaning.



Special crawler frame design makes it easy to clean off mud.



Double-element air cleaner

The large-capacity element features a double-filter structure that keeps the engine running clean even in industrial environments.

Long-life hydraulic oil:
5,000
hours

Long-interval maintenance

Long-life hydraulic oil reduces cost and labor.

Replacement cycle:
1,000
hours

Highly durable super-fine filter

The high-capacity hydraulic oil filter incorporates glass fiber with superior cleaning power and durability.



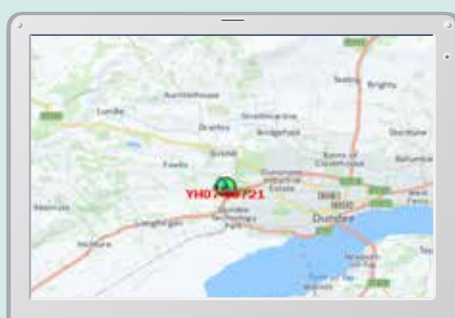
Remote monitoring for peace of mind

KOMEXS (Kobelco Monitoring Excavator System) uses satellite communication and internet to relay data, and therefore can be deployed in areas where other forms of communication are difficult. When a hydraulic excavator is fitted with this system, data on the machine's operation, such as operating hours, location, fuel consumption, and maintenance status can be obtained remotely.

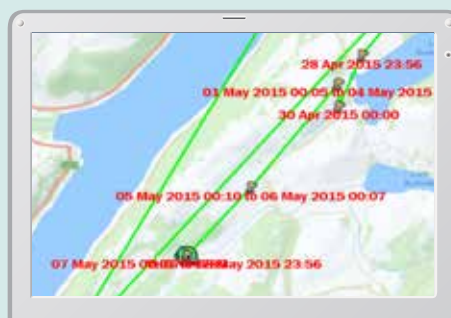
Direct Access to Operational Status

Location data

Accurate location data can be obtained even from sites where communications are difficult.



Latest location



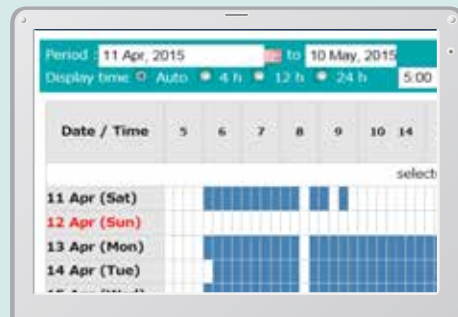
Location records



Work data

Operating hours

- A comparison of operating times of machines at multiple locations shows which locations are busier and more profitable.
- Operating hours on site can be accurately recorded, for running time calculations needed for rental machines, etc.



Daily report

Fuel consumption data

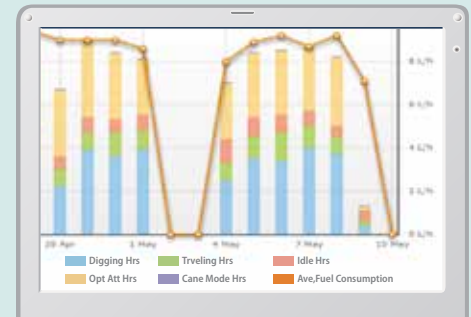
Data on fuel consumption and idling times can be used to indicate improvements in fuel consumption.

Work mode	Working Hrs	Total Fuel Consumption
H mode	2:06	24.5 L
S mode	0:00	0.0 L
E mode	169:19	1489.7 L
TOTAL	171:25	1514.2 L

Fuel consumption

Graph of work content

The graph shows how working hours are divided among different operating categories, including digging, idling, traveling and optional operations.



Work status

Maintenance Data and Warning Alerts

Machine maintenance data

- Provides maintenance status of separate machines operating at multiple sites.
- Maintenance data is also relayed to KOBELCO service personnel, for more efficient planning of periodic servicing.

Model	Serial No.	Hour Meter	Engine Oil
SK135SRLC-3/SK140SRL	YH07-09221	734 Hr	434
SK135SRLC-3/SK140SRL	YH07-09289	73 Hr	429
SK210LC-9	YQ13-10454	960 Hr	58
SK210LC-9	YQ13-10481	549 Hr	498
SK75SR-	YT08-20374		

Maintenance

Warning alerts

This system warns an alert if an anomaly is sensed, preventing damage that could result in machine downtime.

Alarm information can be received through E-mail

Alarm information or maintenance notice can be received through E-mail, using a computer or cell phone.



Daily/Monthly reports

Operational data downloaded onto a computer helps in formulating daily and monthly reports.

Security system

Engine start alarm

The system can be set an alarm if the machine is operated outside designated time.

Engine start alarm outside prescribed work time

Area alarm

It can be set an alarm if the machine is moved out of its designated area to another location.

Alarm for outside of reset area



Engine

Model	ISUZU AR-4JJ1XASK-01
Type	4 cycle, water cooled, overhead valve, vertical in-line, direct injection type, with turbo-charger. Tier IV certified.
No. of cylinders	4
Bore and stroke	95.4 mm x 104.9 mm
Displacement	2.999 L
Rated power output	NET 71.3kW/2,000 min ⁻¹ (ISO 9249 : With fan) NET 78.5kW/2,000 min ⁻¹ (ISO 14396 : Without fan)
Max. torque	NET 347N · m/1,800 min ⁻¹ (ISO 9249 : With fan) NET 375N · m/1,800 min ⁻¹ (ISO 14396 : Without fan)



Hydraulic System

Pump	
Type	Two variable displacement piston pumps + one gear pump
Max. discharge flow	2 x 130 L/min 1 x 20 L/min
Relief valve setting	
Boom, arm and bucket	34.3 Mpa {350 kgf/cm ² }
Travel circuit	34.3 Mpa {350 kgf/cm ² }
Swing circuit	28.0 Mpa {285 kgf/cm ² }
Control circuit	5.0 Mpa {50 kgf/cm ² }
Pilot control pump	Gear type
Main control valves	8-spool
Oil cooler	Air cooled type



Swing System

Swing motor	Axial piston motor
Brake	Hydraulic; locking automatically when the swing control lever is in the neutral position
Parking brake	Oil disk brake, hydraulic operated automatically
Swing speed	11.0 min ⁻¹
Swing torque	39.9 kN·m
Tail swing radius	1,490 mm
Min. front swing radius	2,000 mm



Attachments

Backhoe bucket and combination.

Use			Backhoe bucket						
			Normal digging						
Bucket capacity	ISO heaped	m ³	0.24	0.31	0.38	0.45	0.50	0.57	0.70
	Struck	m ³	0.20	0.23	0.28	0.35	0.38	0.43	0.50
Opening width	With side cutter	mm	590	700	800	915	1,000	1,100	-
	Without side cutter	mm	500	600	700	815	900	1,000	1,150
No. of teeth			3	3	4	4	5	5	5
Bucket weight			280	300	340	360	380	400	410
Combination	2.38 m standard arm		○	○	○	○	◎	△	△
	2.84 m long arm		○	○	◎	△	×	×	×

◎ Standard ○ Recommended △ Loading only × Not recommended



Travel System

Travel motors	2 x axial piston, two-speed motors
Travel brakes	Hydraulic brake per motor
Parking brakes	Oil disk brake per motor
Travel shoes	46 each side
Travel speed	5.6 / 3.4 km/h
Drawbar pulling force	138 kN {14,100 kgf} (ISO 7464)
Gradeability	70% {35°}



Cab & Control

Cab	
All-weather, sound-suppressed steel cab mounted on the silicon-sealed viscous mounts and equipped with a heavy, insulated floor mat.	
Control	
Two hand levers and two foot pedals for travel	
Two hand levers for excavating and swing	
Electric rotary-type engine throttle	
Noise levels	
External	95dB(A)
Operator	69dB(A)



Boom, Arm & Bucket

Boom cylinders	100 mm x 1,092 mm
Arm cylinder	115 mm x 1,120 mm
Bucket cylinder	95 mm x 903 mm



Dozer Blade (Optional)

Dozer cylinder	110 mm x 220 mm
Dimension	2,590 mm (width) x 575 mm (height)
Working range	515 mm (up) x 575 mm (down)



Refilling Capacities & Lubrications

Fuel tank	190 L
Cooling system	9.0 L
Engine oil	13.0 L
Travel reduction gear	2 x 2.1 L
Swing reduction gear	1.65 L
Hydraulic oil tank	79.3 L tank oil level
	168.0 L hydraulic system
DEF/AdBlue tank	33.9 L



Working Ranges

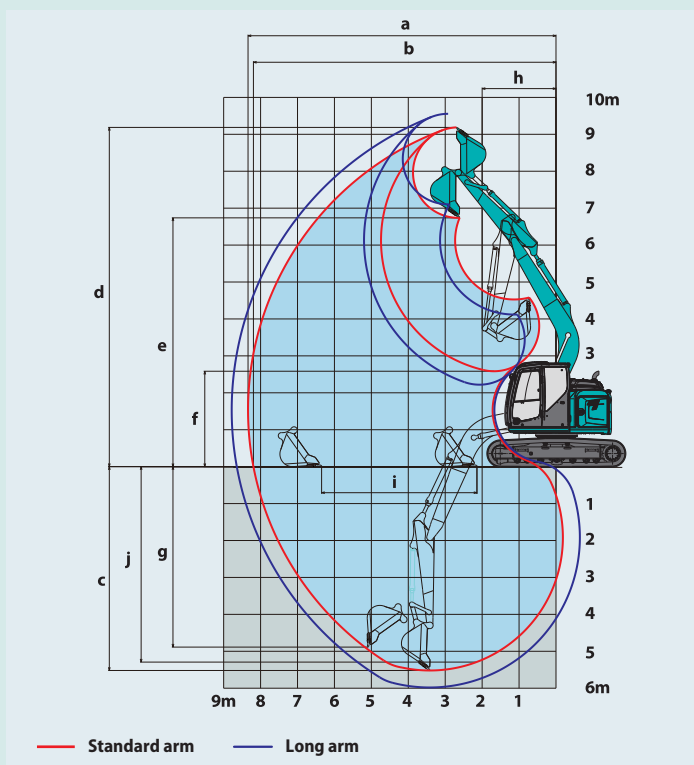
Unit: m

Boom		4.68 m	
Arm		Standard 2.38 m	Long 2.84 m
Range			
a- Max. digging reach		8.34	8.78
b- Max. digging reach at ground level		8.19	8.64
c- Max. digging depth		5.52	5.98
d- Max. digging height		9.19	9.56
e- Max. dumping clearance		6.74	7.11
f- Min. dumping clearance		2.58	2.22
g- Max. vertical wall digging depth		4.89	5.44
h- Min. swing radius		2	2.4
i- Horizontal digging stroke at ground level		4.21	4.7
j- Digging depth for 2.4 m (8') flat bottom		5.29	5.79
Bucket capacity ISO heaped m ³		0.5	0.38

Digging Force (ISO 6015)

Unit: kN (kgf)

Arm length		Standard 2.38 m	Long 2.84 m
Bucket digging force		90.1 {9,190}	
Arm crowding force		64.4 {6,570}	58.1 {5,920}



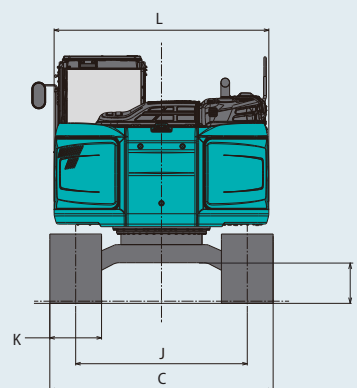
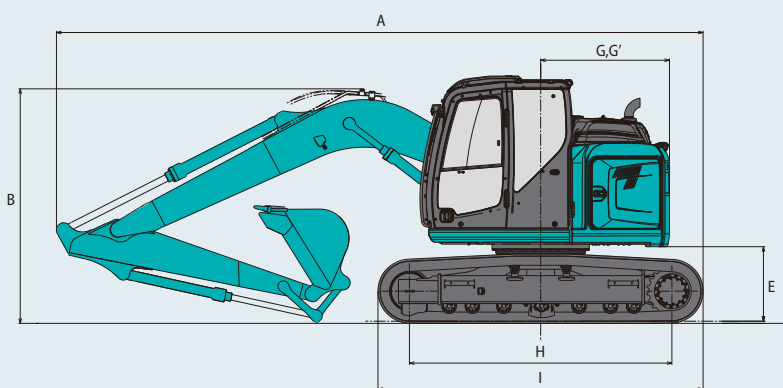
Dimensions

Arm length		Standard 2.38 m	Long 2.84 m
A Overall length		7,500	7,500
B Overall height (to top of boom)		2,700	3,110
C Overall width		2,590	
D Overall height (to top of cab)		2,870	
E Ground clearance of rear end*		865	
F Ground clearance*		445	
G Tail swing radius		1,490	

Unit: mm

G'	Distance from center of swing to rear end	1,490
H	Tumbler distance	3,040
I	Overall length of crawler	3,770
J	Track gauge	1,990
K	Shoe width	500/600/700
L	Overall width of upperstructure	2,490

*Without including height of shoe lug



Operating Weight & Ground Pressure

In standard trim, with standard boom, 2.38 m arm, and 0.5 m³ ISO heaped bucket.

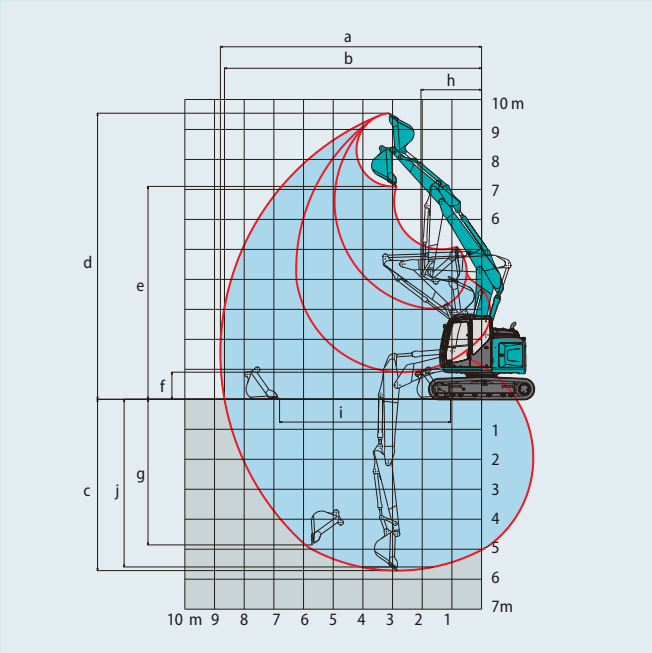
Shaped		Triple grouser shoes (even height)		
Shoe width	mm	500	600	700
Overall width of crawler	mm	2,490	2,590	2,690
Ground pressure	kPa	43	36	31
Operating weight	kg	14,300	14,500	14,800

Two Piece Boom Specification

Working Ranges

Unit: m

Range	Boom	Two Piece Boom	
	Arm	Standard 2.38 m	Long 2.84 m
a-Max. digging reach		8.80	9.24
b-Max. digging reach at ground level		8.66	9.11
c-Max. digging depth		5.71	6.17
d-Max. digging height		9.54	9.99
e-Max. dumping clearance		7.10	7.45
f-Min. dumping clearance		0.90	0.44
g-Max. vertical wall digging depth		4.86	5.41
h-Min. swing radius		2.04	2.42
i-Horizontal digging stroke at ground level		5.76	6.68
j-Digging depth for 2.4 m (8') flat bottom		5.59	6.06
Bucket capacity ISO heaped m³		0.50	0.38



Operating Weight & Ground Pressure

Shape		Triple grouser shoes (even height)		
Shoe width	mm	500	600	700
Overall width of crawler	mm	2,490	2,590	2,690
Ground pressure	kPa	45	38	33
Operating weight	kg	15,100	15,400	15,600

Offset Boom Specifications

Working Ranges

Unit: m

Boom	Offset Boom					
	Short: 2.20 m			Standard: 2.50 m		
Arm	Max. Left	Center	Max. Right	Max. Left	Center	Max. Right
Offset						
a- Max. digging reach	7.15	7.57	7.14	7.41	7.83	7.40
b- Max. digging reach at ground level	6.98	7.41	6.97	7.25	7.68	7.23
c- Max. digging depth	4.52	4.92	4.50	4.82	5.22	4.80
d- Max. digging height	7.81	8.15	7.80	7.97	8.31	7.96
e- Max. dumping clearance	5.42	5.77	5.41	5.59	5.93	5.57
f- Min. dumping clearance	2.07	2.41	2.05	1.78	2.12	1.77
g- Max. vertical wall digging depth	3.25	3.60	3.23	3.54	3.90	3.68
h- Min. swing radius	1.81	1.72	2.05	1.90	1.79	2.11
i- Horizontal digging stroke at ground level	3.77	3.75	3.77	4.23	4.21	4.23
j- Digging depth for 2.4 m (8') flat bottom	4.16	4.56	4.14	4.48	4.88	4.77
Bucket capacity ISO heaped m³		0.45		0.38		

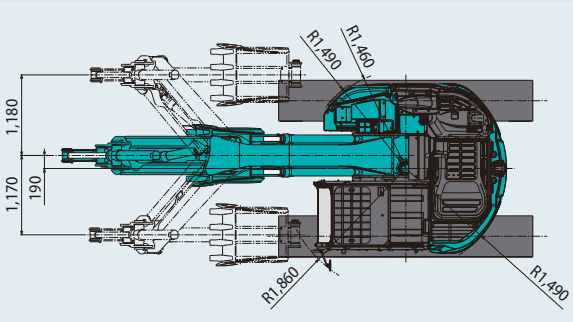
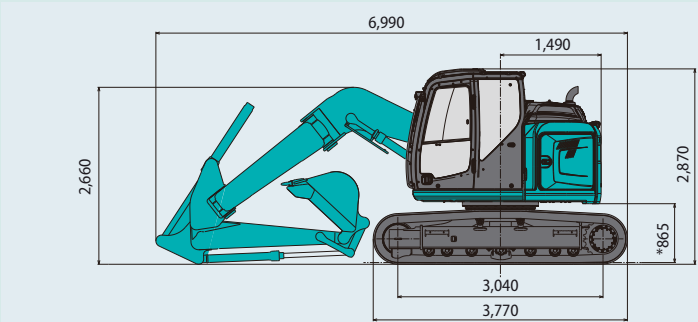
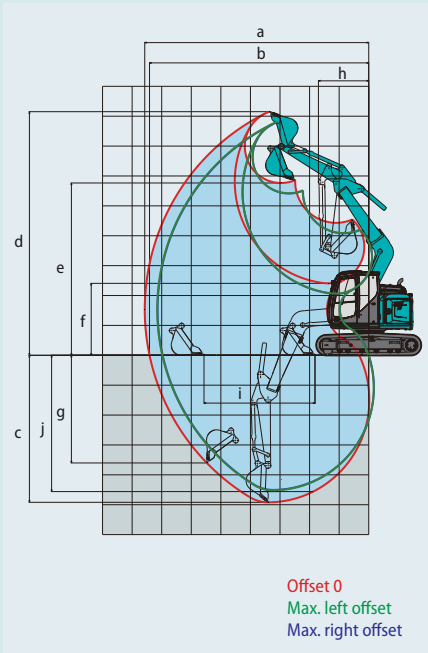
Operating Weight & Ground Pressure

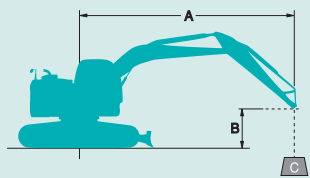
Offset Boom Configuration

Shaped		Triple grouser shoes (even height)		
Shoe width	mm	500	600	700
Overall width of crawler	mm	2,490	2,590	2,690
Ground pressure	kPa {kgf/cm²}	44	37	33
Operating weight	kg	14,800	15,100	15,300

Optional Configuration

Ground pressure with dozer	kPa {kgf/cm²}	47	39	34
Operating weight with dozer	kg	15,600	15,900	16,100





Rating over front



Rating over side or 360 degrees

A: Reach from swing centerline to arm top
B: Arm top height above/below ground
C: Lifting capacities in Kilograms
Bucket: Without bucket
Relief valve setting: 34.3 MPa {350 kgf/cm²}

Mono Boom Specifications

SK140SR _{LC}		Arm: 2.38m		Bucket: Without		Counterweight: 3,140kg		Shoe: 600 mm		Dozer: Without	
B	A	1.5 m		3.0 m		4.5 m		6.0 m		At Max. Reach	
7.5 m	kg									*2,290	*2,290
6.0 m	kg					*3,500	*3,500			*1,790	*1,790
4.5 m	kg			*4,370	*4,370	*3,750	3,540	*3,240	2,210	*1,650	*1,650
3.0 m	kg			*6,570	6,210	*4,490	3,320	3,400	2,130	*1,650	*1,650
1.5 m	kg			*5,580	5,470	5,110	3,070	3,280	2,030	*1,740	1,570
G.L.	kg			*6,070	5,240	4,920	2,900	3,190	1,950	*1,950	1,590
-1.5 m	kg	*5,200	*5,200	*8,040	5,250	4,860	2,850	3,170	1,920	*2,390	1,770
-3.0 m	kg	*8,960	*8,960	*6,400	5,370	*4,440	2,900			*3,340	2,290

Mono Boom Specifications with Additional Counterweight 580 kg

SK140SR _{LC}		Arm: 2.38 m		Bucket: Without		Counterweight: 3,720kg		Shoe: 600 mm		Dozer: Without	
B	A	1.5 m		3.0 m		4.5 m		6.0 m		At Max. Reach	
7.5 m	kg									*2,290	*2,290
6.0 m	kg					*3,500	*3,500			*1,790	*1,790
4.5 m	kg			*4,370	*4,370	*3,750	*3,750	*3,240	2,440	*1,650	*1,650
3.0 m	kg			*6,570	*6,570	*4,490	3,650	*3,680	2,360	*1,650	*1,650
1.5 m	kg			*5,580	*5,580	*5,290	3,400	3,580	2,260	*1,740	*1,740
G.L.	kg			*6,070	5,830	5,370	3,230	3,490	2,180	*1,950	1,780
-1.5 m	kg	*5,200	*5,200	*8,040	5,830	5,310	3,180	3,460	2,150	*2,390	1,980
-3.0 m	kg	*8,960	*8,960	*6,400	5,950	*4,440	3,230			*3,340	2,550

Mono Boom Specifications with Additional Counterweight 580 kg

SK140SR _{LC}		Arm: 2.38 m		Bucket: Without		Counterweight: 3,720kg		Shoe: 600 mm		Dozer: Blade up	
B	A	1.5 m		3.0 m		4.5 m		6.0 m		At Max. Reach	
7.5 m	kg									*2,290	*2,290
6.0 m	kg					*3,500	*3,500			*1,790	*1,790
4.5 m	kg			*4,370	*4,370	*3,750	*3,750	*3,240	2,570	*1,650	*1,650
3.0 m	kg			*6,570	*6,570	*4,490	3,840	*3,680	2,490	*1,650	*1,650
1.5 m	kg			*5,580	*5,580	*5,290	3,580	3,710	2,390	*1,740	*1,740
G.L.	kg			*6,070	*6,070	5,560	3,410	3,620	2,300	*1,950	1,890
-1.5 m	kg	*5,200	*5,200	*8,040	6,160	*5,470	3,360	3,590	2,280	*2,390	2,100
-3.0 m	kg	*8,960	*8,960	*6,400	6,280	*4,440	3,420			*3,340	2,700

Mono Boom Specifications

SK140SR _{LC}		Arm: 2.84 m		Bucket: Without		Counterweight: 3,140kg		Shoe: 600 mm		Dozer: Without	
B	A	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m	
7.5 m	kg					*2,040	*2,040			*2,010	*2,010
6.0 m	kg					*2,990	*2,990	*1,840	*1,840	*1,650	*1,650
4.5 m	kg					*3,280	*3,280	*3,080	2,180	*1,530	*1,530
3.0 m	kg			*5,600	*5,600	*4,030	3,300	3,360	2,080	*1,520	1,430
1.5 m	kg			*7,970	5,490	*4,920	3,010	3,210	1,950	*1,890	1,360
G.L.	kg			*6,270	5,090	4,820	2,800	3,100	1,850	*1,770	1,350
-1.5 m	kg	*4,420	*4,420	*8,270	5,030	4,720	2,710	3,040	1,800	*2,120	1,490
-3.0 m	kg	*7,500	*7,500	*6,930	5,120	*4,720	2,730			*2,920	1,860
-4.5 m	kg			*4,200	*4,200					*2,600	*2,600

Two Piece Boom Specifications

SK140SR _{LC}		Arm: 2.38 m		Bucket: Without		Counterweight: 3,140kg		Shoe: 600 mm		Dozer: Without	
B	A	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m	
7.5 m	kg					*2,260	*2,260			*2,120	*2,120
6.0 m	kg					*3,950	3,770	*2,140	*2,140	*1,820	*1,820
4.5 m	kg			*5,820	*5,820	*4,290	3,570	3,540	2,210	*1,730	1,670
3.0 m	kg	*13,430	*13,430	*7,780	5,770	*4,900	3,210	3,380	2,070	*1,750	1,430
1.5 m	kg			*8,520	*5,030	4,940	2,850	3,200	1,910	*2,270	1,340
G.L.	kg	*11,320	*11,320	*3,790	*3,790	4,690	2,630	3,060	1,780	*2,090	1,320
-1.5 m	kg			*6,160	4,750	4,610	2,560	3,010	1,730	2,480	1,440
-3.0 m	kg			*4,400	*4,400	*3,550	2,610			*2,330	1,790

Offset Boom Specifications

SK140SR _{LC}		Arm: 2.20 m		Bucket: Without		Counterweight: 3,140kg		Shoe: 600 mm		Dozer: Without	
B	A	1.5 m		3.0 m		4.5 m		6.0 m		At Max. Reach	
6.0 m	kg									*2,620	*2,620
4.5 m	kg			*4,150	*4,150	*3,640	3,540			*2,500	2,400
3.0 m	kg			*6,010	*6,010	*4,250	3,260	3,320	2,020	*2,620	1,920
1.5 m	kg			*8,030	5,170	*4,980	2,920	3,180	1,890	2,900	1,730
G.L.	kg			*8,000	4,790	4,730	2,680	3,060	1,790	2,960	1,730
-1.5 m	kg	*6,140	*6,140	*7,700	4,780	4,640	2,600			3,420	1,980
-3.0 m	kg			*5,940	4,980					*4,150	2,900

- Do not attempt to lift or hold any load that is greater than these lift capacities at their specified lift point radius and heights. Weight of all accessories must be deducted from the above lift capacities.
- Lift capacities are based on machine standing on level, firm, and uniform ground. User must make allowance for job conditions such as soft or uneven ground, out of level conditions, side loads, sudden stopping of loads, hazardous conditions, experience of personnel, etc.
- Arm top defined as lift point.
- The above lifting capacities are in compliance with ISO 10567. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. Lifting capacities marked with an asterisk (*) are limited by hydraulic capacity rather than tipping load.
- Operator should be fully acquainted with the Operator's and Maintenance Instructions before operating this machine. Rules for safe operation of equipment should be adhered to at all times.
- Lift capacities apply to only machine as originally manufactured and normally equipped by KOBELCO CONSTRUCTION MACHINERY CO., LTD.

STANDARD EQUIPMENT

ENGINE

- Engine, ISUZU AR-4JJ1XASK-01, Diesel engine with turbocharger and intercooler, Tier 4 certified
- Auto idle Stop
- Automatic engine deceleration
- Batteries (2 x12V - 80 Ah)
- Starting motor (24 V - 5kW), 50 amp alternator
- Engine oil pan drain cock
- Double element air cleaner

CONTROL

- Working mode selector (H-mode, S-mode and ECO-mode)

SWING SYSTEM & TRAVEL SYSTEM

- Swing rebound prevention system
- Straight propel system
- Two-speed travel with automatic shift down
- Sealed & lubricated track links
- 600mm track shoes
- Grease-type track adjusters
- Automatic swing brake

MIRRORS & LIGHTS

- Rear view mirror and rearview camera
- Two front working lights

CAB & CONTROL

- Two control levers, pilot-operated
- Horn, electric
- Integrated left-right slide-type control box
- Cab light (interior)
- Coat hook
- Large cup holder
- Detachable two-piece floor mat
- 7-way adjustable suspension seat
- Retractable seatbelt
- Headrest
- Handrails
- Intermittent windshield wiper with double-spray washer
- Sky light
- Top guard (ISO 10262 : 1998)
- Tinted safety glass
- Pull-type front window and removable lower front window
- Easy-to-read multi-display monitor
- Automatic air conditioner
- Emergency escape hammer
- Radio, AM/FM Stereo with speakers
- AUX and USB
- 12V converter
- Refueling pump
- N&B piping (Not applicable for Offset boom)
- Right view camera

OPTIONAL EQUIPMENT

- Various optional arms
- Wide range of shoes
- Front-guard protective structure (may interfere with bucket action)
- Object Handling Kit (boom safety + hook)
- Extra piping
- Add-on type counterweight
- Cab additional light
- Air suspension seat
- Rain visor (may interfere with bucket action)
- Travel alarm
- Breaker piping (Applicable for Offset boom)
- Lower under cover
- Dozer blade
- Offset boom
- Two piece boom

Note: Standard and optional equipment may vary. Consult your KOBELCO dealer for specifics.

Note: This catalog may contain attachments and optional equipment that are not available in your area. And it may contain photographs of machines with specifications that differ from those of machines sold in your areas. Please consult your nearest KOBELCO distributor for those items you require. Due to our policy of continuous product improvements all designs and specifications are subject to change without advance notice.

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KOBELCO CONSTRUCTION MACHINERY EUROPE B.V.

Veluwezoom 15
1327 AE Almere
The Netherlands
www.kobelco-europe.com

Inquiries To:

KOBELCO

SK210LC-10/SK210NLC-10

SK210_{LC} SK210_{NLC}



We Save You Fuel
Achieving a Low-Carbon Society

Power Meets Efficiency



SK210_{LC} SK210_{NLC}

10%
Higher fuel efficiency
means
"Efficiency"

Increase in
productivity
means
"Power"

Compared to S-mode on the SK210LC-9

To urban centers, and to mines around the world. Kobelco's all-out innovation brings you durable earth-friendly construction machinery that's equal to any task, at sites all over the planet. Increased power and even greater fuel economy bring higher efficiency to any project. Kobelco SK210LC machines are also more durable than ever, able to withstand the rigors of the toughest job sites. It all adds up to new levels of value that are a step ahead of the times. Also, this machine conforms to Stage IV Exhaust Emission Standards, thanks to its significantly reduced NOx* emissions. While focusing on the global environment of the future, Kobelco offers next-generation productivity to meet the need for lower life cycle costs and exceed the expectations of customers the world over.

* NOx: Nitrogen Oxide

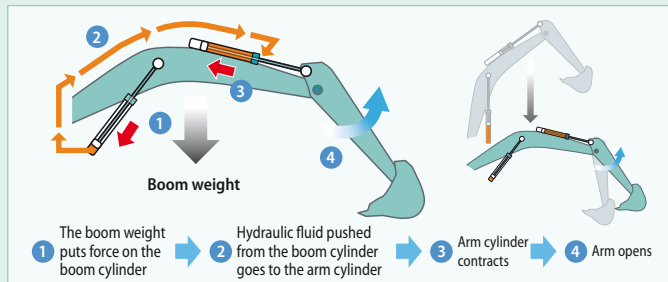


Evolution Continues, with Improved Fuel Efficiency

Hydraulic System: Revolutionary Technology Saves Fuel

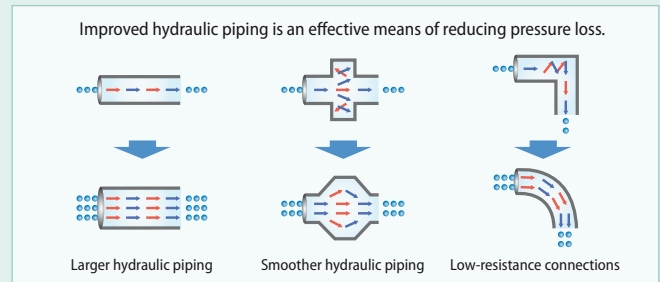
Arm Interflow System NEW

When lowering the boom, this system uses the downward force generated by the boom's weight to push fluid to the shovel arm. This greatly reduces the need to apply power from outside the system.



Hydraulic circuit reduces energy loss

We have made every effort to enhance fuel efficiency by minimizing hydraulic pressure resistance, improving the hydraulic line layout to control friction resistance loss and minimizing valve resistance.

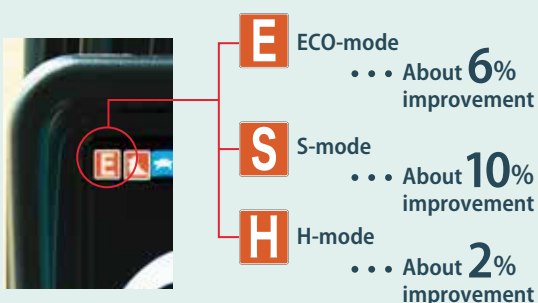


In Pursuit of Improved Fuel Efficiency

Operation Mode

Fuel consumption is lower in ECO-mode/S-mode in comparison with the previous model (Generation 9).

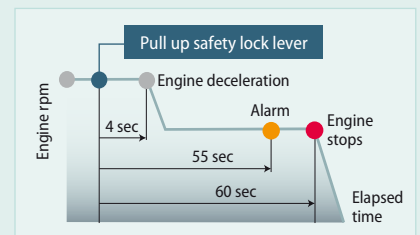
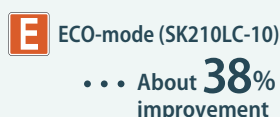
■ Compared to previous models



Always and Forever. Yesterday, Today, and Tomorrow. Obsessed with Fuel Efficiency.

Over the past 10 years, Kobelco has achieved an average reduction of about 38% in fuel consumption. And we vow to continue to lead in fuel efficiency.

■ Compared to SK210LC-6 model (2006)



AIS (Auto Idle Stop)

If the boarding/disembarking lever is left up, the engine will stop automatically. This eliminates wasteful idling during standby, saving fuel and reducing CO₂ emissions as well.

10%

Higher fuel efficiency
means
"Efficiency"

The new arm interflow system more efficiently controls hydraulic fluid flow, and significant reduction of in-line resistance and pressure loss boosts fuel efficiency by about 10%*¹. The engine, already well-known for its environmental performance has a new SCR*² system, and its reduced NOx emissions means the engine now meets Stage IV Standards.

*¹ Compared to S-mode on the SK210LC-9

*² SCR: Selective Catalytic Reduction

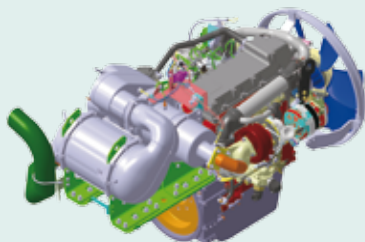


Engine Meets Stage IV Standards

Reduces Fuel Consumption and Minimizes Exhaust Emissions

Hino engines are renowned for fuel efficiency and environmental performance, and Kobelco has tuned these powerplants especially for construction machinery. The pressure within the common rail fuel injection system, the VG turbo, and the exhaust gas after-treatment system reduce exhaust PM*³ while the large-capacity EGR cooler sharply reduces the formation of NOx gases.

*³ PM: Particulate Matter



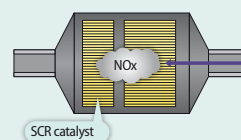
SCR System with DEF/AdBlue

NEW

The engine exhaust system has an SCR system that converts NOx emissions into harmless nitrogen and water. Combining this with a post-exhaust gas treatment system that captures and disposes of PM, the SK210LC has a much cleaner exhaust that meets Stage IV exhaust emission standards.

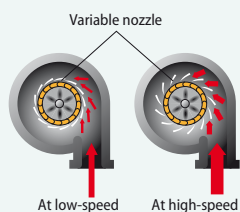
■ NOx reduction rate
(Compared to previous models)

About **88%** decrease



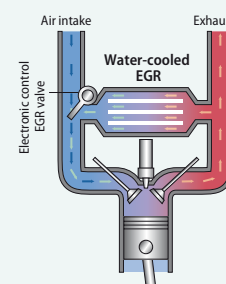
VG Turbo Reduces PM

The variable-geometry turbocharger adjusts air intake to maximize combustion efficiency. At low engine speeds the nozzles are closed, the turbo speed increased and air intake is boosted. This helps lower fuel consumption.



EGR Cooler Reduces Nox

While ensuring sufficient oxygen for combustion, cooled emission gases are mixed with the air intake and re-circulated into the engine. The lowered oxygen temperature lowers the combustion temperature and increases combustion efficiency.



More Power and Higher Efficiency

The highly efficient hydraulic system minimizes fuel consumption while maximizing power. With nimble movement and ample digging power, this excavator promises to improve your job productivity.

Improved fuel efficiency contributes to high performance

Superior Digging Volume

This excavator offers dynamic digging force even as it minimizes fuel consumption rates, achieving class-leading work volume. H-mode with an increased torque setting delivers about 7% greater digging volume.

■ Digging volume/hour
(Compared to H-mode on previous models)



■ Max. Bucket Digging Force

Normal: **143 kN**
With Power Boost: **157 kN**

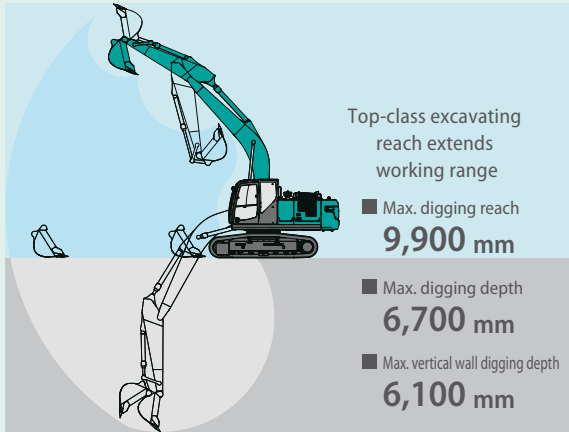
■ Max. Arm Crowding Force

Normal: **102 kN**
With Power Boost: **112 kN**

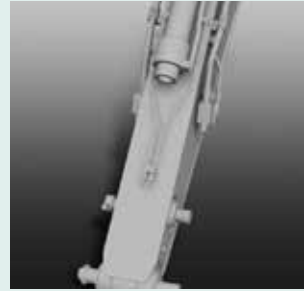
*Values are for HD arm (2.94 m)



Get More Done Faster with Superior Operability



Piping for Quick Hitch (optional)



A quick hitch hydraulic line, which speeds up attachment changes, is available as an option.

A Light Touch on the Lever Means Smoother, Less Tiring Work

NEW



It takes 25% less effort to work the operation lever, which reduces fatigue over long working hours or continued operations.

Top Class Traveling Force

Powerful traveling force and pulling force deliver plenty of speed when climbing slopes or negotiating bad roads, and the agility to change direction swiftly and smoothly.



■ Drawbar Pulling Force: **229 kN**

Operator-friendly Features Include Controls that Are Easy to See, Easy to Use



Multi-Display in Color

Brilliant colors and graphic displays are easy to recognize on the LCD multi-display in the console. The display shows fuel consumption, maintenance intervals, and more.

- 1 Analog gauge provides an intuitive reading of fuel level and engine water temperature
- 2 Green indicator light shows low fuel consumption during operation
- 3 PM accumulation display (left)/AdBlue level gauge (right)
- 4 Fuel consumption/Switch indicator for rear camera images
- 5 Digging mode switch
- 6 Monitor display switch

One-Touch Attachment Mode Switch

A simple flick of a switch converts the hydraulic circuit and flow amount to match attachment changes. Icons help the operator to confirm the proper configuration at a glance.



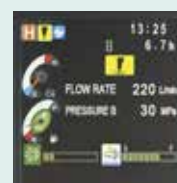
PM accumulation/
AdBlue accumulation display



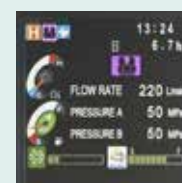
Fuel consumption



Maintenance



Breaker mode

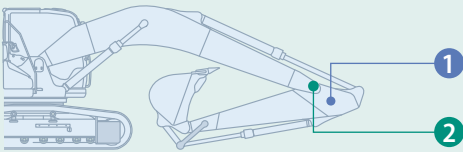


Nibbler mode



Rearview monitoring

Increased Power, with Enhanced Durability to Maintain the Machine's Value



Built to Operate in Tough Working Environments

The attachment has been reinforced to handle a higher work volume, with greater power and excellent durability that can withstand demanding work conditions.

1 Enlarged Reinforcement of the Arm Foot NEW

HD: Base plate thickness has been increased 1.3 times (20 t).

Current



New



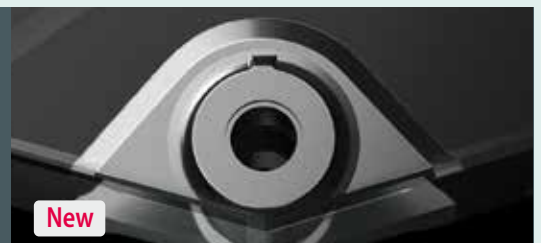
2 Modified Foot Boss Shape NEW

The arm foot boss shape has been modified and improved to distribute stress, delivering 2.6 times more strength for tasks like digging next to a wall.

Current



New



Increase in
productivity
means
"Power"

Structural design increases strength,
while eliminating hydraulic problems.
Enhanced durability takes productivity to
a new level.



Improved Filtration System Reliability

Clean, contaminant-free fuel and hydraulic fluid are essential to stable performance. The improved filtration systems reduce the risk of mechanical trouble and enhance longevity and durability.

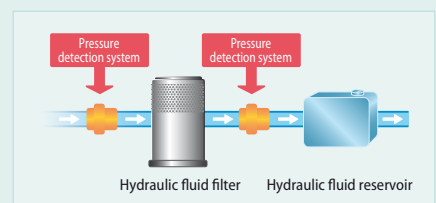
Hydraulic Fluid Filter NEW

Recognized as the best in the industry, our super-fine filter separates out even the smallest particles. New cover prevents contamination when changing filters.



Hydraulic Fluid Filter Clog Detector NEW

Pressure sensors at the inlet and outlet of the hydraulic fluid filter monitor differences in pressure to determine the degree of clogging. If the difference in pressure exceeds a predetermined level, a warning appears on the multi-display, so any contamination can be removed from the filter before it reaches the hydraulic fluid reservoir.



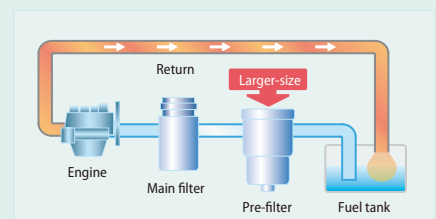
Double-Element Air Cleaner

The large-capacity element features a double-filter structure that keeps the engine running clean even in industrial environments.



Fuel Filter NEW

The pre-filter, with built-in water separator, is a new addition that features a final stage to maximize filtering performance.



Comfortable Cab Is Now Safer than Ever

A work environment that is quieter and more comfortable. A cab that puts the operator first is key to improved safety.

Comfort

Super-Airtight Cab



The high level of air-tightness keeps dust out of the cab.

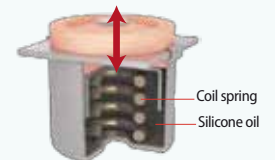
Quiet Inside

The high level of air-tightness ensures a quiet, comfortable cabin interior.

Low Vibration

Coil springs absorb small vibrations, and high suspension mounts filled with silicone oil reduce heavy vibration. The long stroke achieved by this system provides excellent protection from vibration.

Twice the stroke of a conventional mount



Broad View Liberates the Operator

The front window features one large piece of glass without a center pillar on the right side for a wide, unobstructed view.

Air Conditioner Register behind the Seat

NEW



The large air-conditioner has registers on the back pillars that blow from behind and to the right and left of the operator's seat. They can be adjusted to put a direct flow of cool/warm air on the operator, which means a more comfortable operating environment.

More Comfortable Seat Means Higher Productivity



Seat suspension absorbs vibration



Seat recliner can be pushed back flat



Double slides allow adjustment for optimum comfort



Large Cab Is Easy to Get in and out of

The expanded cab provides plenty of room for a large door, more headroom and smoother entry and exit.

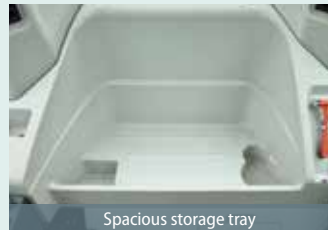
Interior Equipment Adds to Comfort and Convenience



Automatic AM/FM radio



USB pin/24V power outlet



Spacious storage tray



Large cup holder

Safety

ROPS Cab

ROPS (Roll-Over-Protective Structure)-compliant cab clears ISO standards (ISO-12117-2: 2008) and ensures greater safety for the operator should the machine tip over.



TOP Guard is fitted as standard.

Expanded Field of View for Greater Safety



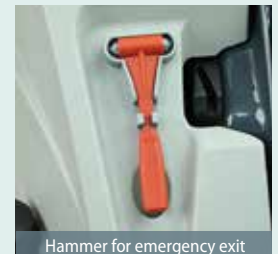
Rearview mirrors left and right/right-hand bottom clearance mirror

Greater safety assured by rearview mirrors on left and right, and a third mirror mounted at lower right.

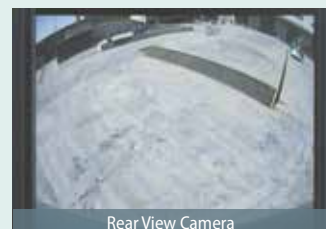


Rear view

Rear view shows the area directly behind the cab.



Hammer for emergency exit



Rear View Camera

A rear view camera is installed as standard to simplify checking for safety behind the machine. The picture appears on the color monitor.



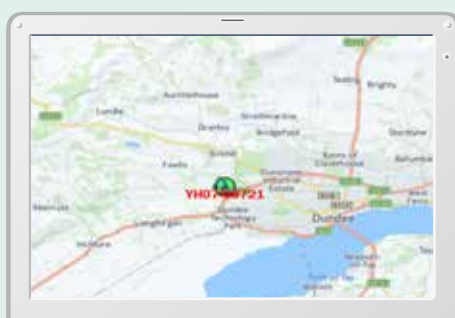
Remote Monitoring for Peace of Mind

KOMEXS (Kobelco Monitoring Excavator System) uses satellite communication and internet to relay data, and therefore can be deployed in areas where other forms of communication are difficult. When a hydraulic excavator is fitted with this system, data on the machine's operation, such as operating hours, location, fuel consumption, and maintenance status can be obtained remotely.

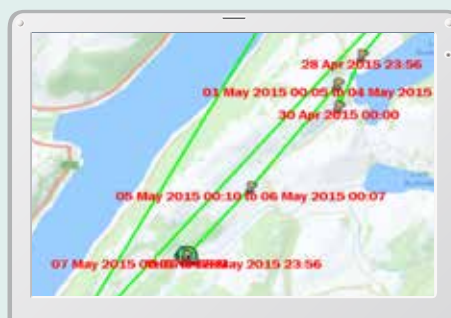
Direct Access to Operational Status

Location Data

Accurate location data can be obtained even from sites where communications are difficult.



Latest location



Location records



Work data

Operating Hours

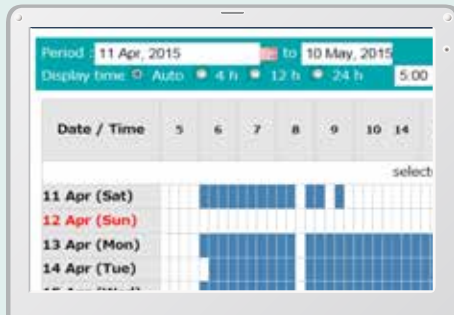
- A comparison of operating times of machines at multiple locations shows which locations are busier and more profitable.
- Operating hours on site can be accurately recorded, for running time calculations needed for rental machines, etc.

Fuel Consumption Data

Data on fuel consumption and idling times can be used to indicate improvements in fuel consumption.

Graph of Work Content

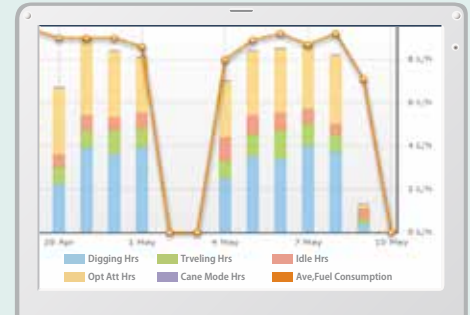
The graph shows how working hours are divided among different operating categories, including digging, idling, traveling and optional operations.



Daily report

Work mode	Working Hrs	Total Fuel Consumption
H mode	2:06	24.5 L
S mode	0:00	0.0 L
E mode	169:19	1489.7 L
TOTAL	171:25	1514.2 L

Fuel consumption



Work status

Maintenance Data and Warning Alerts

Machine Maintenance Data

- Provides maintenance status of separate machines operating at multiple sites.
- Maintenance data is also relayed to KOBELCO service personnel, for more efficient planning of periodic servicing.

Model	Serial No.	Hour Meter	Engine Oil
SK135SRLC-3/SK140SRL	YH07-09221	734 Hr	434
SK135SRLC-3/SK140SRL	YH07-09289	73 Hr	429
SK210LC-9	YQ13-10454	960 Hr	58
SK210LC-9	YQ13-10481	549 Hr	498
SK75SR-	YT08-20374		

Maintenance

Warning Alerts

This system warns an alert if an anomaly is sensed, preventing damage that could result in machine downtime.

Alarm Information Can Be Received through E-mail

Alarm information or maintenance notice can be received through E-mail, using a computer or cell phone.



Daily/Monthly Reports

Operational data downloaded onto a computer helps in formulating daily and monthly reports.

Security System

Engine Start Alarm

An alarm can be set if the machine is operated outside designated time.

Engine start alarm outside prescribed work time

Area Alarm

An alarm can be set if the machine is moved out of its designated area to another location.

Alarm for outside of reset area



Easy, On-the-Spot Maintenance NEW

There is ample space in the engine compartment for a mechanic to do maintenance work inside. The distance between steps is lower so entry and exit is easier. And the mechanic can work in comfort, without contortions or unnatural body positions. Finally, the hood is lighter and easier to raise and lower.



Generous space for maintenance work



Step/Hand rail



DEF/AdBlue tank

Positioned where the step opens.

Maintenance Work, Daily Checks, Etc., Can Be Done from Ground Level

The layout allows for easy access from the ground for many daily checks and regular maintenance tasks.



Double-element air cleaner



Fuel filter/Pre-filter



Engine oil filter



Left side



Right side

Laid out for easy access to radiator and cooling system elements

- ① Fuel filter
- ② Pre-filter
- ③ Engine oil filter

Efficient Maintenance Keeps the Machine in Peak Operating Condition



Machine Information Display Function

Examples of displaying maintenance information

- Displays only the maintenance information that's needed, when it's needed
- Self-diagnostic function provides early-warning detection and display of electrical system malfunctions
- Service-diagnostic function makes it easier to check the status of the machine
- Record function of previous breakdowns including irregular and transient malfunction

More Efficient Maintenance Inside the Cab



Easy-access fuse box

More finely differentiated fuses make it easier to locate malfunctions.



Air conditioner filters

Internal and external air conditioner filters can be easily removed without tools for cleaning.



DPF reactivation switch

If the monitor warning goes off, the filter should be reactivated manually using a switch.

Easy Cleaning



Crawler frame

Special crawler frame design is easily cleaned of mud.



Detachable two-piece floor mat

Detachable two-piece floor mat with handles for easy removal. A floor drain is located under floor mat.



Engine oil pan

Engine oil pan equipped with drain valve.

Long-life hydraulic oil:
5,000
hours

Long-Interval Maintenance

Long-life hydraulic oil reduces cost and labor.

Replacement cycle:
1,000
hours

Highly Durable Super-fine Filter

The high-capacity hydraulic filter incorporates glass fiber with superior cleaning power and durability.





Engine

Model	J05EUM-KSSC
Type	Direct injection, water-cooled, 4-cycle diesel engine with turbocharger, intercooler
No. of cylinders	4
Bore and stroke	112 mm x 130 mm
Displacement	5.123 L
Rated power output	119 kW/2,000 min ⁻¹ (ISO 9249)
	124 kW/2,000 min ⁻¹ (ISO 14396)
Max. torque	640 N-m/1,600 min ⁻¹ (ISO 9249)
	660 N-m/1,600 min ⁻¹ (ISO 14396)



Hydraulic System

Pump	
Type	Two variable displacement pumps + one gear pump
Max. discharge flow	2 x 220 L/min, 1 x 20 L/min
Relief valve setting	
Boom, arm and bucket	34.3 MPa {350 kgf/cm ² }
Power Boost	37.8 MPa {385 kgf/cm ² }
Travel circuit	34.3 MPa {350 kgf/cm ² }
Swing circuit	29.0 MPa {296 kgf/cm ² }
Control circuit	5.0 MPa {50 kgf/cm ² }
Pilot control pump	Gear type
Main control valve	8-spool
Oil cooler	Air cooled type



Swing System

Swing motor	Axial piston motor
Brake	Hydraulic; locking automatically when the swing control lever is in neutral position
Parking brake	Oil disc brake, hydraulic operated automatically
Swing speed	12.7 min ⁻¹ {rpm}
Tail swing radius	2,910 mm
Min. front swing radius	3,550 mm



Attachments

Backhoe bucket and combination

Type	Backhoe bucket			
Bucket capacity	SAE heaped	m ³ (cu yd)	0.70 (0.92)	0.80 (1.05)
	SAE Struck	m ³ (cu yd)	0.52 (0.68)	0.59 (0.77)
Opening width	With side cutter	mm	1,080	1,160
	Without side cutter	mm	980	1,140
No. of teeth			5	5
Can be turned over	2.4 m/3.5 m arm		Yes	Yes
	2.94 m arm		No	No
Bucket weight		kg	630	660
Combination	2.4 m short arm		○	○
	2.94 m standard arm		○	◎
	3.5 m long arm		◎	△

◎ Standard combination ○ General operation △ Light operation



Travel System

Travel motors	2 x axial-piston, two-step motors
Travel brakes	Hydraulic brake per motor
Parking brakes	Oil disc brake per motor
Travel shoes	49 each side
Travel speed	6.0/3.6 km/h
Drawbar pulling force	229 kN (ISO 7464)
Gradeability	70% {35°}



Cab & Control

Cab	
All-weather, sound-suppressed steel cab mounted on the high suspension mounts filled with silicone oil and equipped with a heavy, insulated floor mat.	
Control	
Two hand levers and two foot pedals for travel	
Two hand levers for excavating and swing	
Electric rotary-type engine throttle	
Noise levels	
External	100 dB(A)
Operator	66 dB(A)



Boom, Arm & Bucket

Boom cylinders	120 mm x 1,355 mm
Arm cylinder	135 mm x 1,558 mm
Bucket cylinder	120 mm x 1,080 mm



Refilling Capacities & Lubrications

Fuel tank	320 L
Cooling system	19 L
Engine oil	20.5 L
Travel reduction gear	2 x 5.3 L
Swing reduction gear	2.7 L
Hydraulic oil tank	140 L tank oil level
	244 L hydraulic system
DEF/AdBlue tank	83 L



Working Ranges

Unit: m

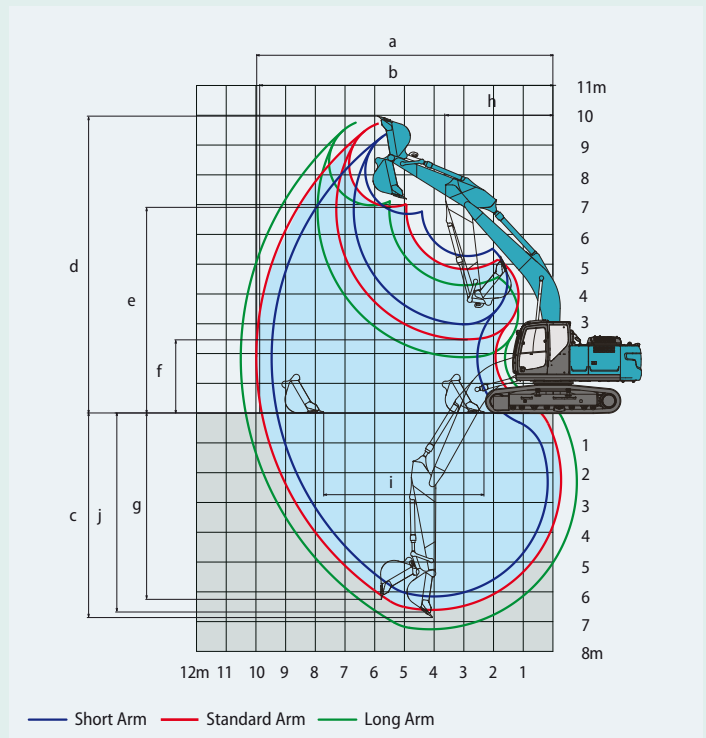
Range	Arm	5.65 m		
		Short 2.4 m	Standard 2.94 m	Long 3.5 m
a- Max. digging reach		9.42	9.9	10.34
b- Max. digging reach at ground level		9.24	9.73	10.17
c- Max. digging depth		6.16	6.7	7.26
d- Max. digging height		9.51	9.72	9.75
e- Max. dumping clearance		6.68	6.91	6.97
f- Min. dumping clearance		2.98	2.43	1.87
g- Max. vertical wall digging depth		5.57	6.1	6.47
h- Min. swing radius		3.56	3.55	3.48
i- Horizontal digging stroke at ground level		4.08	5.27	6.08
j- Digging depth for 2.4 m (8") flat bottom		5.95	6.52	7.08
Bucket capacity ISO heaped m ³		0.93	0.8	0.7

Digging Force (ISO 6015)

Unit: kN

Arm length	Short 2.4 m	Standard 2.94 m	Long 3.5 m
Bucket digging force	143 157*	143 157*	143 157*
Arm crowding force	121 133*	102 112*	91.8 101*

*Power Boost engaged

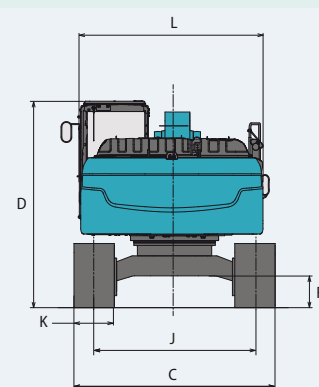
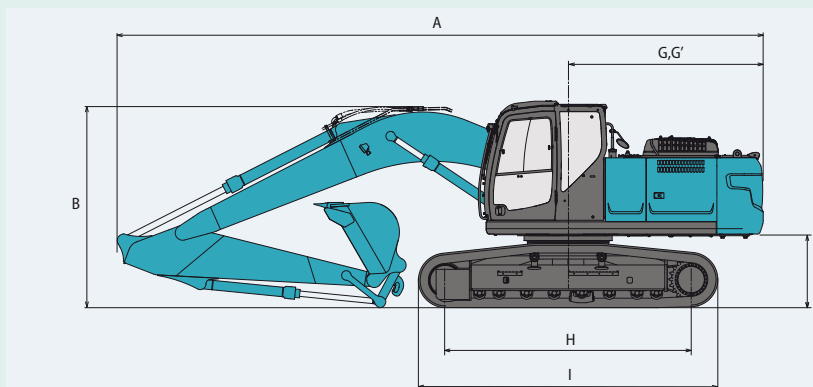


Dimensions

Arm length			Short 2.4 m	Standard 2.94 m	Long 3.5 m
A	Overall length		9,680	9,600	9,670
B	Overall height (to top of boom)		3,150	2,980	3,170
C	Overall width of crawler	SK210LC	2,990		
		SK210NLC	2,800		
D	Overall height (to top of cab)		3,060		
E	Ground clearance of rear end*		1,060		
F	Ground clearance*		450		
G	Tail swing radius		2,910		

Unit: mm		
G'	Distance from center of swing to rear end	2,900
H	Tumbler distance	SK210LC 3,660
		SK210NLC 3,660
I	Overall length of crawler	SK210LC 4,450
		SK210NLC 4,450
J	Track gauge	SK210LC 2,390
		SK210NLC 2,200
K	Shoe width	600
L	Overall width of upperstructure	2,710

*Without including height of shoe

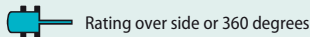
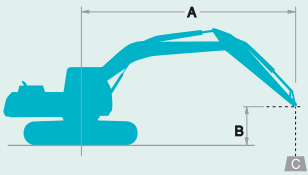


Operating Weight & Ground Pressure

In standard trim, with standard boom, 2.94 m arm, and 0.8 m³ ISO heaped bucket

Shaped			Triple grouser shoes (even height)			
Shoe width		mm	600	700	800	900
Overall width of crawler	SK210LC	mm	2,990	3,090	3,180	3,290
	SK210NLC	mm	2,800	2,900	2,990	—
Ground pressure	SK210LC	kPa	45	39	35	31
	SK210NLC	kPa	45	39	35	—
Operating weight	SK210LC	kg	21,700	22,100	22,300	22,600
	SK210NLC	kg	21,600	22,100	22,300	—

Lifting Capacities



A: Reach from swing centerline to arm top
B: Arm top height above/below ground
C: Lifting capacities in Kilograms
Bucket: Without bucket
Relief valve setting: 37.8 MPa (385 kgf/cm²)

SK210LC		Boom: 5.65 m		Arm: 2.94 m		Bucket: without		Shoe: 600 mm (Heavy Lift)						
A \ B		1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		At Max. Reach		Radius
														
7.5 m	kg							*5,330	*5,330			*4,300	*4,300	6.26 m
6.0 m	kg							*5,940	5,490			*3,980	3,880	7.36 m
4.5 m	kg							*6,490	5,300	5,680	3,710	*3,890	3,300	8.03 m
3.0 m	kg					*9,450	7,690	*7,360	5,030	5,550	3,600	*3,970	3,010	8.38 m
1.5 m	kg					*11,150	7,140	7,580	4,760	5,410	3,470	*4,200	2,910	8.45 m
G.L.	kg			*6,370	*6,370	11,660	6,840	7,370	4,580	5,300	3,370	4,630	2,960	8.25 m
-1.5 m	kg	*6,730	*6,730	*11,090	*11,090	11,560	6,760	7,280	4,500	5,280	3,350	5,050	3,220	7.75 m
-3.0 m	kg	*11,760	*11,760	*14,800	13,300	*10,660	6,830	7,330	4,550			6,020	3,810	6.89 m
-4.5 m	kg			*11,000	*11,000	*8,060	7,080					*6,070	5,360	5.50 m

SK210LC		Boom: 5.65 m		Arm: 3.5 m		Bucket: without		Shoe: 600 mm (Heavy Lift)						
A	B	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		At Max. Reach		Radius
														
7.5 m	kg											*3,680	*3,680	6.84 m
6.0 m	kg									*4,580	3,800	*3,470	*3,470	7.86 m
4.5 m	kg							*5,890	5,350	*5,490	3,720	*3,430	2,990	8.49 m
3.0 m	kg			*12,930	*12,930	*8,540	7,830	*6,800	5,050	5,540	3,580	*3,530	2,740	8.82 m
1.5 m	kg			*7,270	*7,270	*10,440	7,190	7,570	4,750	5,370	3,420	*3,750	2,630	8.89 m
G.L.	kg			*7,760	*7,760	*11,590	6,780	7,310	4,520	5,230	3,300	*4,150	2,670	8.70 m
-1.5 m	kg	*6,600	*6,600	*10,990	*10,990	11,420	6,620	7,170	4,390	5,170	3,240	4,540	2,860	8.22 m
-3.0 m	kg	*10,510	*10,510	*15,910	12,940	*11,070	6,640	7,170	4,390			5,280	3,320	7.42 m
-4.5 m	kg	*15,610	*15,610	*12,770	*12,770	*9,150	6,820	*6,470	4,550			*6,160	4,400	6.16 m

SK210LC		Boom: 5.65 m		Arm: 2.4 m		Bucket: without		Shoe: 600 mm (Heavy Lift)				
A \ B		3.0 m		4.5 m		6.0 m		7.5 m		At Max. Reach		Radius
												
7.5 m	kg									*6,370	6,060	5.58 m
6.0 m	kg					*6,570	5,420			*5,800	4,390	6.80 m
4.5 m	kg			*8,380	8,160	*7,030	5,260	5,650	3,690	5,610	3,670	7.52 m
3.0 m	kg			*10,230	7,560	*7,820	5,000	5,550	3,610	5,120	3,330	7.89 m
1.5 m	kg			*11,680	7,080	7,570	4,770	5,440	3,500	4,970	3,210	7.97 m
G.L.	kg			11,680	6,880	7,400	4,620	5,370	3,440	5,130	3,290	7.75 m
-1.5 m	kg	*11,480	*11,480	*11,550	6,860	7,370	4,590			5,670	3,620	7.22 m
-3.0 m	kg	*13,350	*13,350	*10,030	6,990	*7,310	4,700			*6,700	4,440	6.29 m
-4.5 m	kg			*6,360	*6,360					*5,820	*5,820	4.72 m

SK210NLC		Boom: 5.65 m		Arm: 2.94 m		Bucket: without		Shoe: 600 mm (Heavy Lift)						
A	B	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		At Max. Reach		Radius
														
7.5 m	kg							*5,330	5,070			*4,300	*4,300	6.26 m
6.0 m	kg							*5,940	5,060			*3,980	3,570	7.36 m
4.5 m	kg							*6,490	4,880	5,670	3,420	*3,890	3,030	8.03 m
3.0 m	kg					*9,450	7,010	*7,360	4,610	5,540	3,300	*3,970	2,760	8.38 m
1.5 m	kg					*11,150	6,470	7,560	4,350	5,400	3,170	*4,200	2,660	8.45 m
G.L.	kg			*6,370	*6,370	11,630	6,180	7,350	4,170	5,290	3,080	4,620	2,710	8.25 m
-1.5 m	kg	*6,730	*6,730	*11,090	*11,090	11,540	6,100	7,260	4,100	5,270	3,060	5,040	2,940	7.75 m
-3.0 m	kg	*11,760	*11,760	*14,800	11,770	*10,660	6,180	7,320	4,140			6,010	3,480	6.89 m
-4.5 m	kg			*11,000	*11,000	*8,060	6,420					*6,070	4,890	5.50 m

SK210NLC		Boom: 5.65 m Arm: 3.5 m Bucket: without Shoe: 600 mm (Heavy Lift)												
A \ B		1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		At Max. Reach		Radius
														
7.5 m	kg											*3,680	*3,680	6.84 m
6.0 m	kg									*4,580	3,500	*3,470	3,200	7.86 m
4.5 m	kg							*5,890	4,930	*5,490	3,420	*3,430	2,740	8.49 m
3.0 m	kg			*12,930	*12,930	*8,540	7,140	*6,800	4,630	5,530	3,280	*3,530	2,500	8.82 m
1.5 m	kg			*7,270	*7,270	*10,440	6,520	7,560	4,330	5,360	3,130	*3,750	2,400	8.89 m
G.L.	kg			*7,760	*7,760	*11,590	6,120	7,290	4,110	5,220	3,000	*4,150	2,430	8.70 m
-1.5 m	kg	*6,600	*6,600	*10,990	*10,990	11,390	5,970	7,160	3,990	5,150	2,940	4,530	2,600	8.22 m
-3.0 m	kg	*10,510	*10,510	*15,910	11,410	*11,070	5,980	7,160	3,990			5,270	3,020	7.42 m
-4.5 m	kg	*15,610	*15,610	*12,770	11,770	*9,150	6,160	*6,470	4,140			*6,160	4,010	6.16 m

SK210NLC A		Boom: 5.65 m		Arm: 2.4 m		Bucket: without		Shoe: 600 mm (Heavy Lift)				
		3.0 m		4.5 m		6.0 m		7.5 m		At Max. Reach		Radius
												
B												
7.5 m	kg									*6,370	5,590	5.58 m
6.0 m	kg					*6,570	5,000			*5,800	4,040	6.80 m
4.5 m	kg			*8,380	7,470	*7,030	4,840	5,630	3,390	5,600	3,380	7.52 m
3.0 m	kg			*10,230	6,880	*7,820	4,590	5,540	3,310	5,110	3,050	7.89 m
1.5 m	kg			*11,680	6,420	7,550	4,360	5,430	3,210	4,960	2,940	7.97 m
G.L.	kg			11,660	6,220	7,390	4,220	5,360	3,140	5,120	3,010	7.75 m
-1.5 m	kg	*11,480	*11,480	*11,550	6,200	7,350	4,180			5,660	3,310	7.22 m
-3.0 m	kg	*13,350	12,040	*10,030	6,330	*7,310	4,290			*6,700	4,060	6.29 m
-4.5 m	kg			*6,360	*6,360					*5,820	*5,820	4.72 m

Notes:

- Do not attempt to lift or hold any load that is greater than these lift capacities at their specified lift point radius and heights. Weight of all accessories must be deducted from the above lift capacities.
- Lift capacities are based on machine standing on level, firm, and uniform ground. User must make allowance for job conditions such as soft or uneven ground, out of level conditions, side loads, sudden stopping of loads, hazardous conditions, experience of personnel, etc.
- Arm top defined as lift point.
- The above lifting capacities are in compliance with ISO 10567. They do not exceed 87% of hydraulic

lifting capacity or 75% of tipping load. Lifting capacities marked with an asterisk (*) are limited by hydraulic capacity rather than tipping load.

- Operator should be fully acquainted with the Operator's and Maintenance Instructions before operating this machine. Rules for safe operation of equipment should be adhered to at all times.
- Lift capacities apply to only machine as originally manufactured and normally equipped by KOBELCO CONSTRUCTION MACHINERY CO., LTD.

2 Piece Boom Specifications



Working Ranges

Unit: m

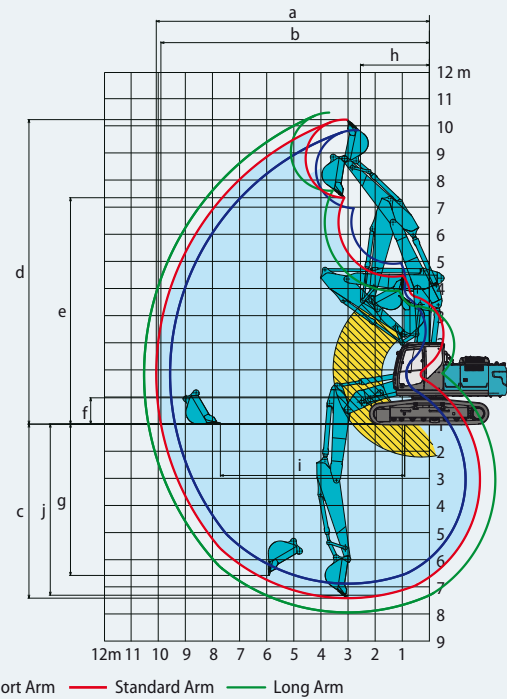
Boom	Arm	3.16 m + 2.63 m		
		Short 2.4 m	Standard 2.94 m	Long 3.5 m
a- Max. digging reach		9.57	10.07	10.53
b- Max. digging reach at ground level		9.39	9.9	10.37
c- Max. digging depth		5.89	6.42	6.93
d- Max. digging height		10.83	11.23	11.5
e- Max. dumping clearance		7.95	8.35	8.62
f- Min. dumping clearance		1.51	0.97	0.41
g- Max. vertical wall digging depth		5.08	5.58	6.02
h- Min. swing radius		2.76	2.55	2.72
i- Horizontal digging stroke at ground level		5.77	6.8	7.8
j- Digging depth for 2.4 m (8') flat bottom		5.78	6.31	6.83
Bucket capacity ISO heaped m ³		0.93	0.8	0.7

Digging Force (ISO 6015)

Unit: kN

Arm length	Short 2.4 m	Standard 2.94 m	Long 3.5 m
Bucket digging force	143 157*	143 157*	143 157*
Arm crowding force	121 133*	102 112*	91.8 101*

*Power Boost engaged

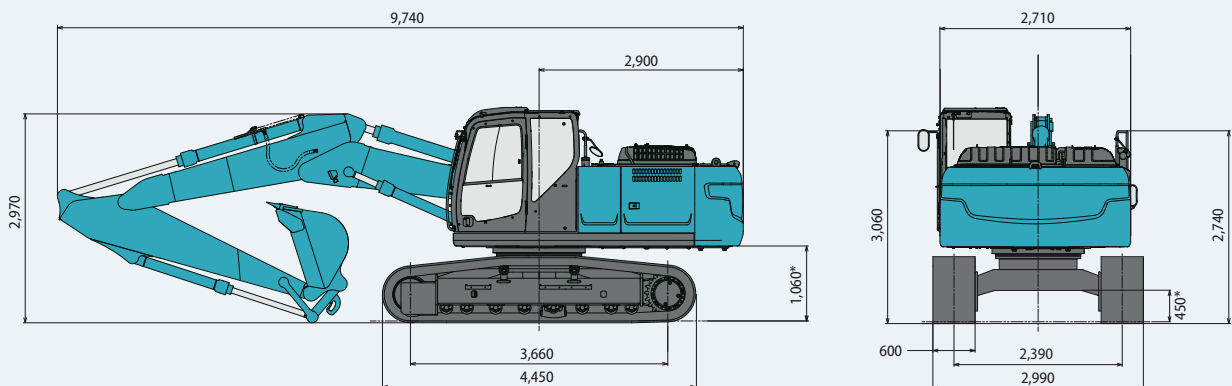


The area marked with diagonal lines shows the warning zone of the cab protection device.



Dimensions

Unit: mm

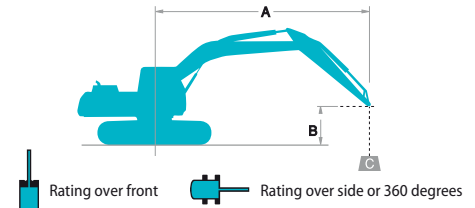


*Without including height of shoe lug.

Lifting Capacities

SK210LC		Boom: 2 piece boom		Arm: 2.94 m		Bucket: without		Shoe: 600 mm (Heavy Lift)				
A	B	3.0 m		4.5 m		6.0 m		7.5 m		At Max. Reach		Radius
												
9.0 m	kg			*5,900	*5,900					*4,940	*4,940	4.74 m
7.5 m	kg			*6,790	*6,790	*5,800	5,450			*4,050	*4,050	6.49 m
6.0 m	kg			*6,880	*6,880	*4,680	*4,680	*4,120	3,620	*3,710	3,560	7.55 m
4.5 m	kg	*10,480	*10,480	*9,190	8,230	*7,660	5,180	*4,840	3,570	*3,590	3,020	8.21 m
3.0 m	kg	*16,430	*14,270	*10,840	7,450	7,770	4,850	*4,750	3,430	*3,620	2,740	8.55 m
1.5 m	kg	*17,930	12,750	*11,600	6,780	7,400	4,520	*5,070	3,270	*3,790	2,620	8.62 m
G. L.	kg	*14,920	12,350	*11,250	6,440	7,160	4,300	5,140	3,160	*4,120	2,640	8.42 m
-1.5 m	kg	*10,010	*10,010	*9,880	6,370	7,060	4,220	5,120	3,070	*4,650	2,850	7.93 m
-3.0 m	kg	*8,660	*8,660	*7,480	6,480	5,680	4,210			*3,700	3,370	7.10 m

SK210NLC		Boom: 2 piece boom		Arm: 2.94 m		Bucket: without		Shoe: 600 mm (Heavy Lift)				
A	B	3.0 m		4.5 m		6.0 m		7.5 m		At Max. Reach		Radius
												
9.0 m	kg			*5,900	*5,900					*4,940	*4,940	4.74 m
7.5 m	kg			*6,790	*6,790	*5,800	5,010			*4,050	*4,050	6.49 m
6.0 m	kg			*6,880	*6,880	*4,680	*4,680	*4,120	3,310	*3,710	*3,260	7.55 m
4.5 m	kg	*10,480	*10,480	*9,190	7,510	*7,660	4,750	5,590	3,260	*3,590	*2,750	8.21 m
3.0 m	kg	*16,430	12,640	*10,840	6,760	7,750	4,420	5,430	3,120	*3,620	*2,490	8.55 m
1.5 m	kg	*17,930	11,190	*11,600	6,110	7,390	4,100	*5,250	2,970	*3,790	*2,370	8.62 m
G. L.	kg	*14,930	10,820	*11,250	5,770	7,140	3,890	5,130	2,860	*4,120	2,390	8.42 m
-1.5 m	kg	*10,010	*10,010	*9,880	5,700	7,050	3,810	5,100	2,770	*4,650	2,580	7.93 m
-3.0 m	kg	*8,660	*8,660	5,810	*7,480	5,680	3,790			*3,700	3,050	7.10 m



A: Reach from swing centerline to arm top

B: Arm top height above/below ground

C: Lifting capacities in kilograms

Bucket: Without bucket

Relief valve setting: 37.8 MPa (385kgf/cm²)

Note:

- Do not attempt to lift or hold any load that is greater than these lift capacities at their specified lift point radius and heights. Weight of all accessories must be deducted from the above lift capacities.
- Lift capacities are based on machine standing on level, firm, and uniform ground. User must make allowance for job conditions such as soft or uneven ground, out of level conditions, side loads, sudden stopping of loads, hazardous conditions, experience of personnel, etc.
- Arm top defined as lift point.
- The above lifting capacities are in compliance with ISO 10567. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. Lifting capacities marked with an asterisk (*) are limited by hydraulic capacity rather than tipping load.
- Operator should be fully acquainted with the Operator's and Maintenance Instructions before operating this machine. Rules for safe operation of equipment should be adhered to at all times.
- Lift capacities apply to only machine as originally manufactured and normally equipped by KOBELCO CONSTRUCTION MACHINERY CO., LTD.

STANDARD EQUIPMENT

ENGINE

- Engine, HINO J05EUM-KSSC, diesel engine with turbocharger and intercooler
- Automatic engine deceleration
- Auto Idle Stop (AIS)
- Batteries (2 x 12V - 96Ah)
- Starting motor (24V - 5 kW), 60 amp alternator
- Automatic engine shut-down for low engine oil pressure
- Engine oil pan drain cock
- Double element air cleaner

CONTROL

- Working mode selector (H-mode, S-mode and ECO-mode)
- Power Boost
- Heavy lift

SWING SYSTEM & TRAVEL SYSTEM

- Swing rebound prevention system
- Straight propel system
- Two-speed travel with automatic shift down
- Sealed & lubricated track links
- Grease-type track adjusters
- Automatic swing brake

HYDRAULIC

- Arm regeneration system
- Auto warm up system
- Aluminum hydraulic oil cooler

MIRRORS & LIGHTS

- Three rearview mirrors
- Three front working lights

CAB & CONTROL

- Two control levers, pilot-operated
- Tow eyes
- Horn, electric
- Cab light (interior)
- Luggage tray
- Large cup holder
- Detachable two-piece floor mat
- Headrest
- Handrails
- Intermittent windshield wiper with double-spray washer
- Skylight
- Tinted safety glass
- Pull-up type front window and removable lower front window
- Easy-to-read multi-display color monitor
- Automatic air conditioner
- Emergency escape hammer
- Suspension seat
- Radio, AM/FM stereo with speaker
- TOP guard

OPTIONAL EQUIPMENT

- Various optional arms
- Wide range of shoes
- Additional track guide
- Object Handling Kit (boom and arm safety valve + hook)
- Additional hydraulic circuit
- Two cab lights
- Air suspension seat
- Rain visor (may interfere with bucket action)

Note: Standard and optional equipment may vary. Consult your KOBELCO dealer for specifics.

Note: This catalog may contain attachments and optional equipment that are not available in your area. And it may contain photographs of machines with specifications that differ from those of machines sold in your areas. Please consult your nearest KOBELCO distributor for those items you require.

Specialist equipment is needed to use this machine in demolition work. Before using it please contact your KOBELCO dealer.

Due to our policy of continuous product improvements all designs and specifications are subject to change without advance notice.

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Kobelco Construction Machinery Europe B.V.

Veluwezoom 15
1327 AE Almere
The Netherlands
www.kobelco-europe.com

Inquiries To: