



CONSTRUCTION ENVIRONMENTAL MANAGEMENT AND DEMOLITION PLAN **MANCHESTER COLLEGE, NORTHENDEN**

Introduction

This Construction and Environmental Management Plan has been prepared by Miller Homes to enable support of the full planning application for 224 new residential units.

This statement seeks to deal with the following:

- **Times of construction activities on Site / Working Restrictions Extended within Hours**
- **Location of the Site Compound**
- **The Parking of Vehicles of Site Operatives and Visitors**
- **Loading & Unloading of Plant and Materials**
- **Storage of Plant and Materials used in constructing the Development**
- **Water Resources and Flood Risk**
- **Wheel Wash Facilities**
- **Measures to control the emission of dust and dirt during construction**
- **A Scheme for Recycling/Disposing of Waste Resulting from Demolition & Construction Works**
- **Stockpiles and Storage Mounds**
- **Noise and Vibration**
- **Mitigation measures for the Construction Phase of the Development:**
- **Site Monitoring**
- **Generators**
- **Ecology**
- **Demolition**

The scheme shall include details of all dust suppression measures and the methods to monitor emissions of dust arising from the development. The approved Construction and Environment Management Plan shall be implemented and in force throughout the construction phase of the development.

Times of construction activities on Site

Construction works (including deliveries) associated with the development hereby permitted shall not take place except between the hours of **7:30am-18:00pm Monday to Friday and 8:30am-14:00pm Saturday**. No construction activities or deliveries shall take place on Sundays or Public and Bank holidays. All pile driving operations, if required, shall be limited to the hours of 08:30 to 17:30 hours Monday to Friday, 09:00 – 13:00 hours on Saturdays and not at all on Sundays and bank holidays.

Working Restrictions within Hours

1. No pile driving activities, if required, before 8:30am or after 17:30. These operations are to be within normal working hours.
2. No deliveries are to arrive before 8:00am or after 18:00pm.
3. No construction activities or deliveries shall take place on Sundays or Public and Bank holidays.

4. Internal works within these extended hours to comprise of joinery, plastering, electrical, plumbing and decorating. No activities with high noise levels/disturbance such as power tools, electric saws etc are to be used as these will cause complaints.
5. Leaflet drop to surrounding residents – containing description of the works that will take place out of normal hours, together with a contact name / number.

Location of the Site Compound

The location of the site compound has been strategically placed away from any neighbouring occupier. The location can be found on the attached Route of Build Plan.

The Parking of Vehicles of Site Operatives and Visitors

All site operatives and visitors must park their vehicles on site. A temporary designated car park will be constructed on site. All visitors and site operatives must utilise the car park only, there is to be no parking on any of the surrounding street (Moss Hey Drive / Hollyhey Drive) for site operatives. If additional parking is required, this is to be provided within the development. Please see the attached Route of Build Plan for further details and location.

Loading & Unloading of Plant and Materials

Vehicular and pedestrian access to the site compound will be from the existing site access from Moss Hey Drive as indicated on the attached Route of Build Plan. Delivery vehicles will be provided with directions to the site and be required to turn off engines to avoid nuisance upon arrival. A delivery vehicle lay-by and wash down area will be provided at the entrance of the site compound. Delivery constraints will be identified to all suppliers and trade contractors. Deliveries of materials, plant and equipment will be strictly controlled and co-ordinated to prevent congestion and disruption to traffic using Moss Hey Drive and Sale Road. There are to be no deliveries between the hours of 8:30 – 9:30 and 14:30 – 16:00 to avoid school drop off and collection times, during term times.

Storage of Plant and Materials used in constructing the Development

The location of the store and plant materials has been carefully located to minimise noise disruption to residents. These will be stored in a secured compound. Please see the attached Route of Build Plan for exact location.

Oil and Chemical Storage – These are to be stored within our site compound area (compound location noted on the attached Route of Build Plan). All fuel will be stored in a double skinned tank or a tank in a suitable bunded area in compliance with the Control of Pollution (Oil Storage)(England) Regulations 2001. Refuelling activities will only be undertaken by suitably qualified persons and spill kits will be available within the site compound.

All hazardous liquids e.g. oils, lubricants, chemicals and tins of paint be stored in a segregated area in a suitable locked COSHH container. COSHH assessments will be available nearby for information in the event of a spillage.

Water Resources and Flood Risk

Surface water and ground water resources could be impacted from pollution, for example fuel spillages, dust and waste.

Mitigation: -

Measures to manage spillages, dust and waste are detailed in other sections of this document. All the diesel tanks will be bunded and diesel spill response kits will be located in high-risk areas susceptible to spills. Fuel spill kits are stored in the site compound and at appropriate locations across the development site.

All options are to be considered for occurrence of silt/sediment runoff. These include:

- Leaving grassy areas as catchment or settlement areas.
- Battering or sheeting oil stockpiles and locating them away from the watercourses and drains, where possible.
- Protection of drains.
- Use of grips and straw bales.
- Silt fencing; and
- Dewatering.

Wheel Wash Facilities

During construction works an appropriate wheel-washing system will be provided to remove mud, stones and any other extraneous materials from the wheels and chassis' of construction vehicles exiting the site and all loads of construction materials, excavation spoil or other such matter shall be fully covered in order to ensure that no material leaves the site attached to the vehicle which might subsequently be deposited on the highway. The exit from the wheel washing system shall be constructed from a hard, nonporous surfacing material and sited as far away from the exit to the highway as is possible given the constraints of the site and the surface shall be kept clean at all times.

Given the scale of the project, the system that will be installed will be a one man operated power hose that will be used when needed. This is to be located adjacent to the site compound/site entrance away. No waste water from this process is to be discharged via a watercourse. All highway gullies on site are to be fitted with gully bags to act as a filter to prevent any debris entering the system.

Waste water resulting from the wheel washing system shall be disposed of on site and shall not be allowed discharge into the public sewerage system without prior removal of soil, stones and any other suspended material. Wheel washing will be kept under weekly review, with additional measure taken as necessary based on current site conditions and activities.

In addition to providing active wheel wash facilities at the site exit, Miller Homes will also arrange for regular (daily or weekly, depending on the time of year and activities on site) visits by road sweepers/cleaners. They will also be brought in to deal with any emergency issues.

Measures to control the emission of dust and dirt during construction

This section has been written in line with the "The control of dust and emissions from construction and demolition, Best practice guidance".

Management of dust and dirt during construction will be given a high priority as to avoid the spread onto any highways accessing the site. The main area of concern is the spread by vehicles entering and leaving the site, this will be managed by ensuring our access roads are dampened down which will be undertaken by a bowser towed behind a vehicle.

Methods of dust suppression during manual works are to be taken into consideration within the Contractors method statements. This includes dust suppression kits using water where applicable to minimise the amount of dust created etc.

A Scheme for Recycling/Disposing of Waste Resulting from Demolition & Construction Works

Miller Homes is acutely aware of the effects that the disposal of waste can have on the environment and our policy is clearly to reduce wastage in all possible areas. One of the key principles of the approach is to make the operatives more responsible for waste and waste management. This is embodied in the preference for each sub-contractor to be responsible for supplying its own materials – this ownership results in the minimising of unnecessary waste. These concepts will be incorporated within the sub-contract documentation, such that each sub-contractor considers the most environmentally acceptable solution to the packaging to their deliveries. A management plan will be developed to organise the segregation of waste into separate containers so that recyclable items such as metals and timber can be recovered.

- Implementation of a 'just-in-time' material delivery system to avoid materials being stockpiled, which increases the risk of their damage and disposal as waste;
- Attention to material quantity requirements to avoid over-ordering and generation of waste materials.
- Re-use of materials wherever feasible i.e. re-use of excavated soil for landscaping.
- Segregation of waste at source where practical; and re-use and recycling of materials off-site where re-use on-site is not practical (e.g. through use of an off-site waste segregation facility and re-sale for direct re-use or reprocessing. Burning of wastes or unwanted materials will not be permitted on-site. All hazardous materials including chemicals, cleaning agents, solvents and solvent containing products will be properly sealed in containers at the end of each day prior to storage in appropriately protected and bundled storage areas.

As the new buildings become enclosed, the rubbish will be collected in lightweight floor based wheeled skips that can manoeuvre around the configuration of the units. The skips will then be taken to ground floor level by hoist, and either disposed of into larger skips, or if suitable, placed into a compactor to reduce the volume of the waste before it is taken off-site.

Stockpiles and Storage Mounds

Miller Homes will make best endeavours to avoid the use of long-term stockpiles on site wherever possible. If necessary, the following measures will be put in place:

- Ensure that stockpiles exist for the shortest possible time.
- Do not build steep sided stockpiles or mounds or those that have sharp changes in shape.
- Whenever possible keep stockpiles or mounds away from site boundary, sensitive receptors, watercourses and surface drains.
- Re-use hard core material where possible to avoid unnecessary vehicle trips.

On this development temporary soil stockpiles will be located within the plot boundaries and away from the highway, drainage and any existing watercourse. Any topsoil stockpiles are to be grass seeded as to increase in stability of soil.

Noise and Vibration

Noise and vibration will be caused during the construction of the proposed development. Some of the site activities producing this are: -

- Traffic movements;
- Plant movements;
- Demolition operations;
- Drilling and piling operations;
- Excavating operations;
- General construction activities; and
- Emergency sirens.

To avoid nuisance been caused by any of these activities the following mitigation measure will be in place throughout the construction of the development: -

- Noise and vibration will be limited to the core working hours previously define.
- Contractors must use “best practicable means” (BPM) to minimise the nuisance from noise and vibration. ***See appendices for typical Vibration monitoring system that will be used.***
- The maintenance and location of plant will be planned to minimise noise levels and screening will be used where necessary.
- Adherence to noise limits should be included in contractual agreements with contractors. General induction training for site operatives and specific training for staff having responsibility for particular aspects of controlling noise from the site.
- Use of most environmentally acceptable and quietly operating plant and equipment appropriate to the works with emission levels limited to relevant EC Directive/UK Statutory Instrument levels and levels quoted in BS5228.
- Intermittently operating plant will be shut down in the intervening periods between operations.
- Any compressors brought on to site would be silenced or sound reduced models fitted with acoustic enclosures.
- All pneumatic tools will be fitted with silencers or mufflers.
- The excavation and demolition of existing structures will, wherever possible, be undertaken without the use of pneumatic breakers.
- Wherever possible, the use of hydraulic attachments or other means of crushing concrete and hard materials will be used in preference to pneumatic breakers.
- Where the use of impact hammers is necessary, their attachment to larger and heavier excavators will be employed to reduce the level of vibration.
- Care will be taken when erecting or striking scaffolds to avoid impact noise from banging steel. All operatives undertaking such activities will be instructed on the importance of handling the scaffolds to reduce noise to a minimum.
- Deliveries will be programmed to arrive during daytime hours only. Care will be taken when unloading vehicles to minimise noise. Delivery vehicles would be routed so as to minimise disturbance to local residents. Delivery vehicles will be prohibited from waiting on the highway or within the site with their engines running.

Mitigation measures for the Construction Phase of the Development:

Issue	Control Measure
Site planning	• Erect solid barriers to site boundary • No bonfires • Plan site layout - machinery and dust causing activities should be located away from sensitive receptors • All site personnel to be fully trained • Trained and responsible manager on site during working times to maintain logbook and carry out site inspections • Hard surface site haul routes
Construction traffic	• All vehicles to switch off engines - no idling vehicles • Effective vehicle cleaning and specific wheel-washing on leaving site and damping down of haul routes • All loads entering and leaving site to be covered • No site runoff of water or mud • On-road vehicles to comply to set emission standards • All non-road mobile machinery (NRMM) to use ultra-low sulphur tax-exempt diesel (ULSD) where available • Minimise movement of construction traffic around site • Hard surfacing and effective cleaning of haul routes and appropriate speed limit around site
Earth moving works	• Minimise dust generating activities • Use water as dust suppressant where applicable • Cover, seed or fence stockpiles to prevent wind whipping • Re-vegetate earthworks and exposed areas • If applicable, ensure concrete crusher or concrete batcher has permit to operate

Site Monitoring

If best practicable means are followed correctly, then formation of dust and harmful emissions from the sites should be minimised as much as possible. However, Miller Homes will look to continuous site monitoring in order to manage dust and emissions from the construction.

Although we will use our best endeavours to minimise and manage the dust and dirt during construction there may be a minimal amount which would spread from the site, this will be managed by a road sweep which will attend site and ensure all highways are cleaned of any construction dirt.

To allow us to monitor the overall impact of our construction on the neighbouring occupiers an information board will be placed at the front of the site with the site details and contact number for residents to contact Miller Homes' customer care department through our "Miller Respect" scheme.

Generators

Where required generators will be used between the hours stated in above section regarding working hours. Generators will be manually switched on and off, timers will not be used. Please see extract in Appendix, for further details of the generators that will be used on this site.

Ecology

To inform the site preparation and construction activities it is recommended that the following measures described below are accommodated by the Construction Environment Management Plan (CEMP).

Nesting Birds:

- All wild birds are protected under the *Wildlife and Countryside Act 1981* (as amended) while they are breeding. It is advised that any works such as vegetation clearance or building demolition that will affect habitats suitable for use by nesting birds are scheduled to commence outside the bird nesting season. Commencement of works in the nesting season must be informed by a pre-works nesting bird survey, carried out by a suitably experienced ecologist. The bird breeding season typically extends between March to August inclusive.
- If breeding birds are detected the ecologist will issue guidance in relation to the protection of the nesting birds in conjunction with the scheduled works. This may involve cordoning off an area of the site until the young birds have fledged.

Lighting:

- Any lighting to be used during the construction phase must involve the use of appropriate products and screening, where necessary, to ensure no excessive artificial lighting shines over the retained habitats as lighting overspill may deter use by wildlife such as foraging bats.

Protection of existing vegetation:

- During the construction phase, temporary protective demarcation fencing will be used to protect the trees, and shrubs to be retained (including, as needed, the trees on the access road at Moss Hey Drive). The fencing will be in accordance with BS5837:2012 *Trees in Relation to Design, Demolition and Construction: Recommendations* (BSI, 2012).

Measures for the protection of other wildlife:

- For the protection of other wildlife at the site, during the site preparation works and construction operations it is essential that the following best practice and Reasonable Avoidance Measures are applied:
- Dense vegetation must only be cleared following an inspection for nesting and hibernating hedgehog (dependent on the time of year);
- No trenches must be left open overnight. Trenches or holes must be covered with a board or fitted with a means of escape (such as ramped edge or a sloping plank of timber). This will ensure that any inquisitive animals do not become trapped;
- Any pipes must be stored with caps on (to prevent animal entry);

Demolition

No development shall take place, including any works of demolition, until a construction method statement has been submitted to and approved in writing by the Local Planning Authority. The approved statement shall be adhered to throughout the construction period. It shall provide for:

- The parking of vehicles of site operatives and visitors
- The loading and unloading of plant and materials
- The storage of plant and materials used in constructing the development
- The erection and maintenance of security hoarding
Wheel washing facilities
- Measures to control the emission of dust and dirt during construction
- A scheme for recycling/disposing of waste resulting from demolition and construction works
- Details of working hours
- Routing of delivery vehicles to/from site

Should the demolition of the buildings not take place within 12 months from the date of planning approval date, immediately prior to their demolition a further survey of the buildings for the presence of bats should be undertaken, and the results of which (together with proposals for mitigation/compensation, if required) submitted to and approved in writing by the Local Planning Authority

Demolition activities:

- Water shall be utilised as a dust suppressant.
- Any cutting equipment employed shall have a dust suppressant system or suitable local extract ventilation; Enclosed chutes and covered skips shall be used at site to control dust generation from the waste handling activities; and
- If a crusher is to be used at site, the contractor shall Notify the Local Authority.
- If a crusher is to be used a copy of the permit must be kept on-site and adhere to the conditions therein at all times

Demolition operations:

- Adherence to noise and vibration limits, and operating hours, shall be included in contractual agreements with contractors.
- Contractors shall be required to ensure that plant is operated with all specified acoustic covers in place. Regular inspections of plant shall be undertaken to ensure this measure is being followed.
- Equipment will be switched off when not in use (including during breaks and down times of more than 30 minutes).
- Compressors should be fitted with properly lined and sealed acoustic covers which should be kept closed whenever in use.
- Pneumatic percussive tools should be fitted with mufflers or silencers of the type recommended by the manufacturers.
- Equipment which breaks concrete, brickwork, or masonry by bending or bursting or “nibbling” shall be used in preference to percussive tools where practicable. Avoid the use of impact tools where the site is close to occupied premises.
- Where practicable, rotary drills and bursters activated by hydraulic, chemical, or electrical power shall be used for excavating hard or extrusive material.
- Where practicable, equipment powered by mains electricity shall be used in preference to equipment powered by internal combustion engine or locally generated electricity; and
- Plant shall be maintained in good working order so that extraneous noise from mechanical vibration, creaking and squeaking is kept to a minimum.



Appendix 2 – Route of Build Plan



Appendix 3 – Site Compound

Paint - One Colour - Blue

GENERAL NOTES

GROUNDWORKS

Provide a level and compacted compound base comprising of 100mm thick MOT Type 1 on 100mm thick hardcore.

Compound base to be finished with 75mm DBM basecourse to the vehicular area contained with the post and rail fence and 40mm thick DBM basecourse to the pedestrian areas. The basecourse should have a fine stone to produce a closed surface which will be easy to clean by hosing down.

Unless dictated by levels the base should not be contained by an edging. Where an edging is required to retain the base on sloping land then a 100 x 25mm tanalised timber edging and 50 x 50mm posts should be adopted.

10mm wearing course to be laid to personnel walkway to office/toilets.

ELECTRICAL

Lights in the site office, toilet and canteen are to be controlled by motion detectors.

Smoke detectors are to be installed in the site office and canteen.

Two 30w LED external floodlights are to be sited in the compound.

One 30w LED external floodlight is to illuminate the adjacent car park.

Two of the steel storage containers are to have one 6ft long double fluorescent light and one panel heater installed in each of them. The remaining two steel containers will not have light or heating installed.

A battery charging facility is to be provided in an external cupboard and located above the main meter cupboard. There should be four double sockets installed in the charging facility.

PLUMBING

One external bib tap located at the rear of the toilet block.

Connect water service and waste to the site office (Sink, water heater and toilet facilities).

Connect water service and waste to the canteen (Sink and water heater).

Connect water service and waste to the toilet block.

Connect water service to mortar silo, also make an initial separate provision for connecting a water bowser to a pump to supply the mortar silo.

PAINTING

Site office is to be provided with Miller livery and the canteen and toilet block are to be provided in white, all three units are to be supplied by Transcabin.

Externally the hoarding should receive one primer coat, one undercoat and one gloss coat of the Miller dark blue (Crown reference: S 5040 - R70B).

Internally the hoarding should receive two coats of matt black masonry paint to the areas identified on the drawing. All other areas internally shall remain unpainted.

External Timber Store to be painted.

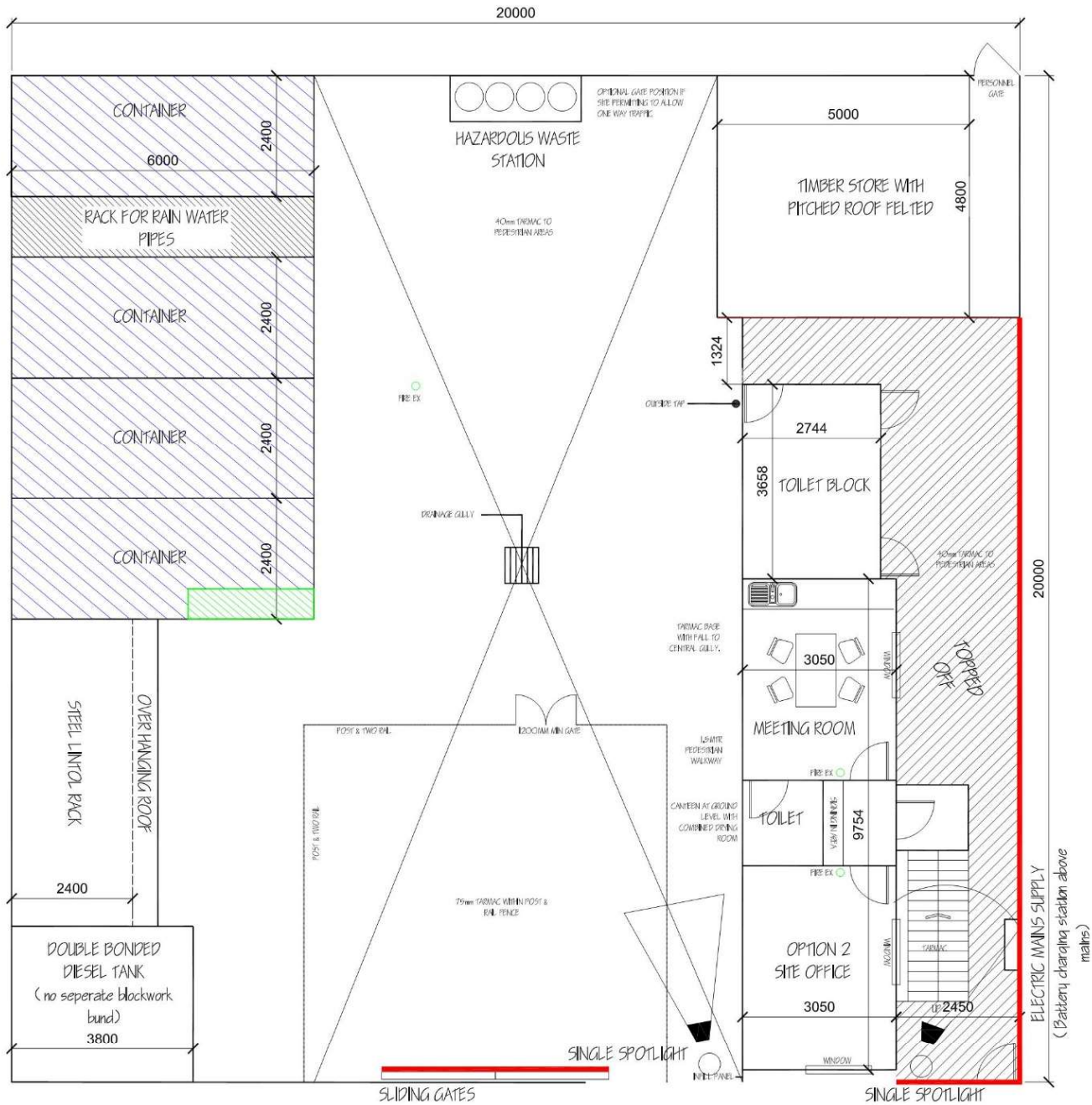
All cabins to be fitted with sensor lighting and interlinked smoke alarm.

Signage for compound & Site: MHSP

Truss Rack outside Compound area

Material Storage Compound for brick materials

Additional meeting room outside compound area.



KEY

Rear fence and gates to be painted black emulsion by labourer, other areas to be left unpainted.

Fully boarded / fully handrailed container roof

Loading bay gate

Rev Description Drawn Date

miller homes

Miller Homes Limited - North West Region
Hawthorn House
Woodlands Park
Ashton Road
Newton-le-Willows, WA12 0HF

Telephone 0870 336 4700
Fax 01925 228570
www.millerhomes.co.uk

Project Title

**STANDARD DETAILS
SITE COMPOUND
USING TRANS CABINS**

Drawing Title

**SITE COMPOUND
20m x 20m COMPOUND**

Scale: 1:50

Drawn By: SJL

Checked By: SJL

Date: 05.02.19

Job No: 809000

Drawing No: SD/COMP/2019/01

Revision: 1

Appendix 4 – Typical Vibration Monitoring System

 www.roger-bullivant.co.uk		METHOD STATEMENT	
INSERT DISCIPLINE			
Contract No:		Contract Name:	
Doc No:	GEN-TMS 1324	Revision	1
Date:	25.11.19	Page 1 of 5	
Document Title:		Vibration Monitor Vibrock V9000 Seismograph	

1.0 Purpose and Scope

- 1.1 The purpose of this Method Statement is to define the safe working procedure for operating a Vibrock V9000 Seismograph.

2.0 Health and Safety Controls

- 2.1 The operator must be familiar with, or in the possession of the V9000's operator manual.
- 2.2 The operator must set up and position the Seismograph away from moving plant and machinery wherever possible.

3.0 Environmental Controls

- 3.1 Operations must only take place within the working hours stated on the prestart site inspect form.
- 3.2 All waste must be disposed of designated skips and licenced waste carriers.

4.0 Definitions

- 4.1 **Seismograph** – The instrument that measures motion of the ground (vibration).
- 4.2 **Transducer** – The attachment that is used to detect vibration.
- 4.3 **Data** – The vibrations recorded by the Seismograph.
- 4.4 **Event** – The period of time the Seismograph is recording data. From pressing "Piling mode" to "power down" is a single event.
- 4.5 **Modem** – The device that allows the Seismograph to connect to the internet.

5.0 Power source

- 5.1 The unit is supplied with a mains power adaptor, this adaptor is to be used wherever possible to reduce the use of disposable batteries, it is also used to charge the modem.

Document Owner:	Reviewed by:	System Approval:	Approval No:
J Ball	J Ball	P Smith	1605
Chief Geotechnical Engineer	Chief Geotechnical Engineer	SHEQ Manager	
<i>This document is uncontrolled when printed - The controlled copy is on the T:Drive</i>			

 www.roger-bullivant.co.uk		METHOD STATEMENT	
INSERT DISCIPLINE			
Contract No:		Contract Name:	
Doc No:	GEN-TMS 1324	Revision	1
Date:	25.11.19	Page 2 of 5	
Document Title:		Vibration Monitor Vibrock V9000 Seismograph	

- 5.2 The V9000 unit, when not powered by the mains adaptor runs of 4 x D Cell batteries, please refer to the operator manual with regards to changing the batteries.
- 5.3 Note - When the modem is powered by a rechargeable battery, once this battery is flat the modem will automatically switch to run off the D Cell batteries, this will significantly reduce the life of these batteries.

6.0 Process

6.1 Setting up the Seismograph

- 6.1.1 Determine the location where the unit is to be situated, if monitoring is requested by the Client/Client Representative, the location shall be agreed with the Client Representative.
- 6.1.2 Connect the transducer and position as per operator manual, see page 5 of operator manual for transducer mounting.
- 6.1.3 Once positioned, turn on the Seismograph and check the battery life is sufficient enough to carry out the operations time scale (see page 9 of the operator's manual for battery power info). Also check that the time and date are correct. If the time and date are not correct, it can be changed manually by accessing the "Set Logger" function from the main menu, for details on how to do this please refer to the operator's manual, page 8.
- 6.1.4 If required, the position of the Seismograph should be recorded in relation to works being monitored and/or it specific location on site, please seek confirmation from R.B.L. Site Supervisor/Contracts Manager before monitoring commences.

6.2 Starting and monitoring an event

- 6.2.1 Once the Seismograph is set up, from the main menu select "Piling mode". The Seismograph will then automatically start recording data.
- 6.2.2 Once the Seismograph is recording, extra care is to be taken around the transducer, this is to ensure that no false readings are recorded, false readings may happen by;

Document Owner:	Reviewed by:	System Approval:	Approval No:
J Ball	J Ball	P Smith	1605
Chief Geotechnical Engineer	Chief Geotechnical Engineer	SHEQ Manager	
<i>This document is uncontrolled when printed - The controlled copy is on the T:Drive</i>			

 www.roger-bullivant.co.uk		METHOD STATEMENT	
INSERT DISCIPLINE			
Contract No:		Contract Name:	
Doc No:	GEN-TMS 1324	Revision	1
Date:	25.11.19	Page 3 of 5	
Document Title:		Vibration Monitor Vibrock V9000 Seismograph	

- Kicking the transducer.
- Excessive movement by foot around the transducer.
- Objects accidentally hitting or falling around the transducer.
- Plant movement around the transducer.

If a false reading is observed the Seismograph should be powered down, restarted and the time and date should be noted and reported to the person collating the data.

6.2.3 The light on the screen will turn off after 25 secs, the screen will go into "sleep mode" after two and a half minutes. Once the screen is in "sleep mode" the Seismograph is still recording data, a flashing light on the silver button indicates that monitoring is active, pressing any of the function buttons will reactivate the screen.

6.2.4 The event data can be viewed in different ways whilst monitoring is ongoing;

- **Data** – This is the default screen showing the monitoring details and the mm/s readings.
- **Hour Data** – This shows the max readings recorded for the last hour and for the total event.
- **Bar Graph** – This shows a flowing bar chart of vibration readings, the parallel axis indicating the max readings for the data on the screen.

6.3 Turning off/powering down the unit

- 6.3.1 Once the operations being monitored have ceased, the Seismograph should be turned off. All data recorded will be stored automatically.
- 6.3.2 To power down, press and hold the "Shift" button, then press "Exit" this will return you to the main menu.
- 6.3.3 From the main menu, press and hold the "Shift" button, then press "Turn Off", this will display the modem disable option screen.
- 6.3.4 Press "Yes" then on the following screen press "Modem Disable" and wait for "Modem OFF" to be displayed, then press "Exit", this will return you again to the main menu.

Document Owner:	Reviewed by:	System Approval:	Approval No:
J Ball	J Ball	P Smith	1605
Chief Geotechnical Engineer	Chief Geotechnical Engineer	SHEQ Manager	
<i>This document is uncontrolled when printed - The controlled copy is on the T:Drive</i>			

 www.roger-bullivant.co.uk		METHOD STATEMENT	
INSERT DISCIPLINE			
Contract No:		Contract Name:	
Doc No:	GEN-TMS 1324	Revision	1
Date:	25.11.19	Page 4 of 5	
Document Title:		Vibration Monitor Vibrock V9000 Seismograph	

- 6.3.5 From the main menu, press and hold the "Shift" button, then press "Turn Off", the Seismograph will then run through a short powering down sequence, once the screen goes blank the unit has turned off.
- 6.3.6 Once the unit has powered down, the transducer should be disconnected, both the Seismograph and transducer should then be stored away in a secure location.

7.0 Viewing data/memory

7.1 Viewing the stored data on the Seismograph unit

- 7.1.1 NO MEMORY SHALL BE DELETED UNLESS AUTHORIZED BY R.B.L. SITE SUPERVISOR/CONTRACTS MANAGER.
- 7.1.2 To view the recorded data, select "View Memory" from the main menu.
- 7.1.3 Please read the brief explanation then press "View memory". It is then possible to scroll through the unit's event memory; each event will have a time and date reference.
- 7.1.4 To exit the memory function, press "main menu" button.

7.2 Viewing the data on P.C. or Laptop

- 7.2.1 To view and download the data from the V9000 Seismograph, the Vibrock V9000 software must be installed.
- 7.2.2 Please refer to page 11 – 19 of the operator manuals for PC/Laptop data retrieval.
- 7.2.3 Vibration monitor has a rolling memory that after a time overwrites older data. Please ensure that the seismograph is backed up to the network at the end of each project or every two weeks by using the PC software.

Document Owner:	Reviewed by:	System Approval:	Approval No:
J Ball	J Ball	P Smith	1605
Chief Geotechnical Engineer	Chief Geotechnical Engineer	SHEQ Manager	
<i>This document is uncontrolled when printed - The controlled copy is on the T:Drive</i>			

 www.roger-bullivant.co.uk		METHOD STATEMENT	
INSERT DISCIPLINE			
Contract No:		Contract Name:	
Doc No:	GEN-TMS 1324	Revision	1
Date:	25.11.19	Page 5 of 5	
Document Title:		Vibration Monitor Vibrock V9000 Seismograph	

8.0 Other V9000 Functions

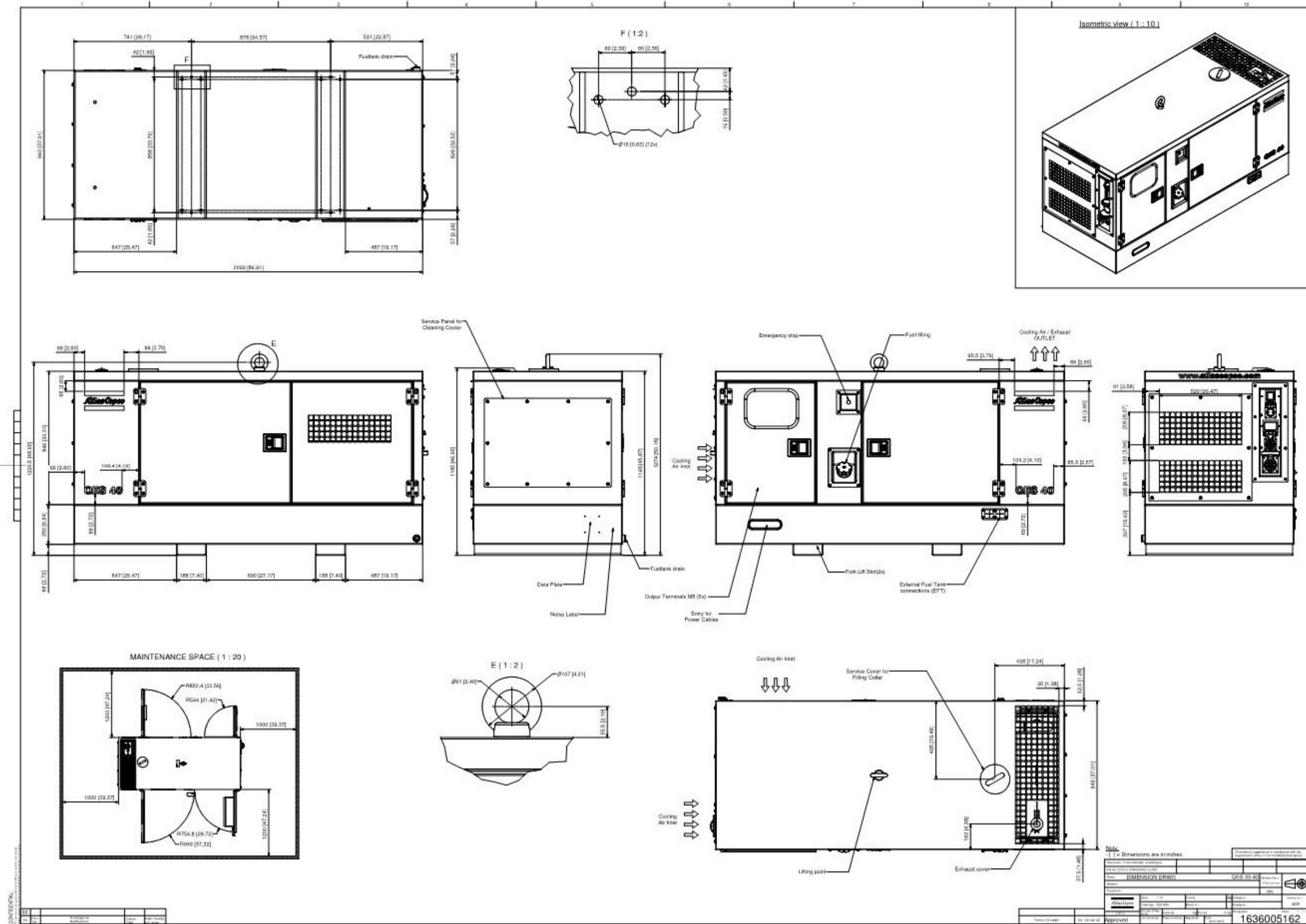
The V9000 Seismograph has many extra functions such as SMS Alert, Remote modem set-up, GPS Locator and audible alarm. To apply any of these functions please refer to the operator manual. Please note that the above functions are not available on all devices, please check compatibility of your unit prior to use.

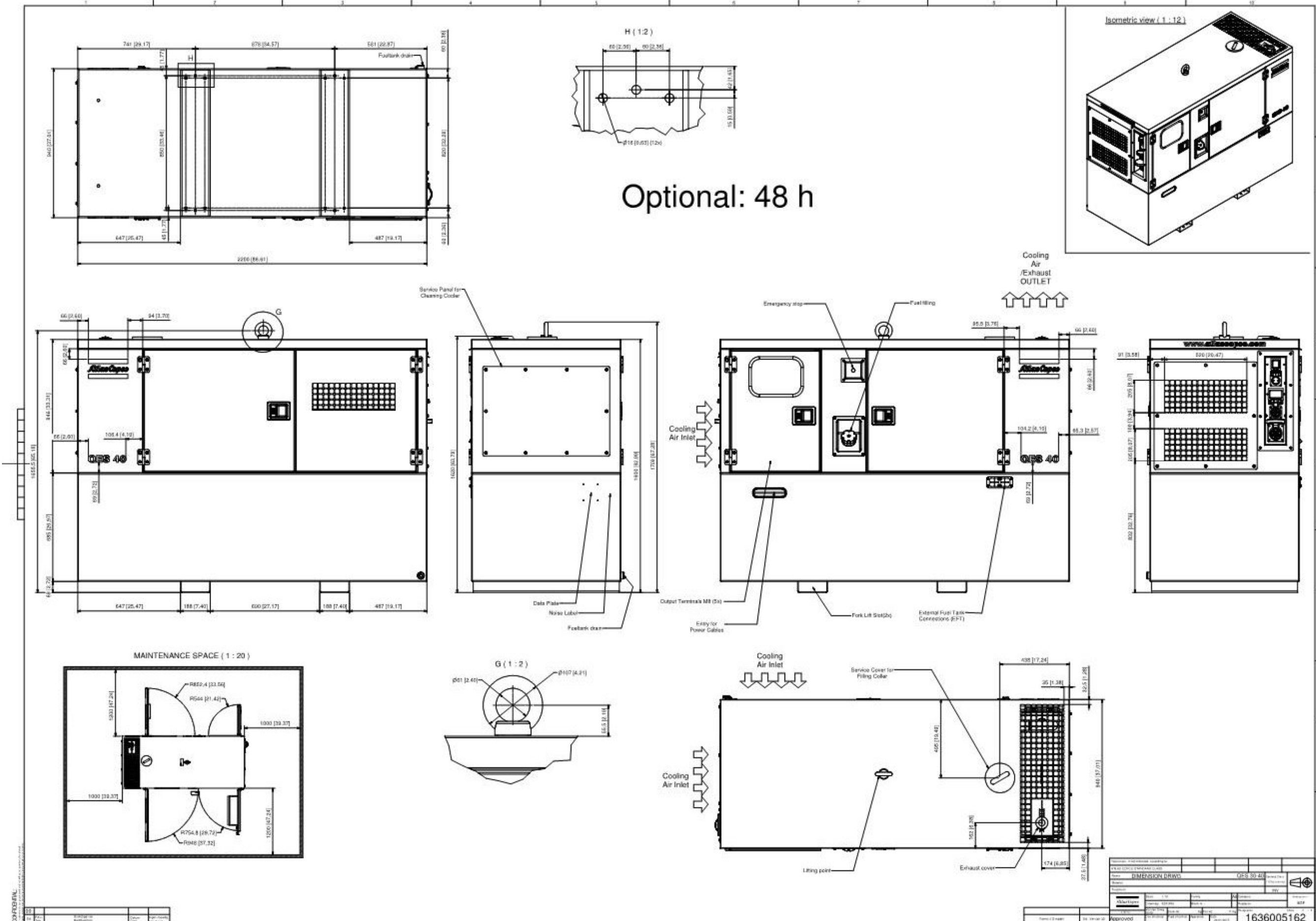
9.0 Care and Maintenance

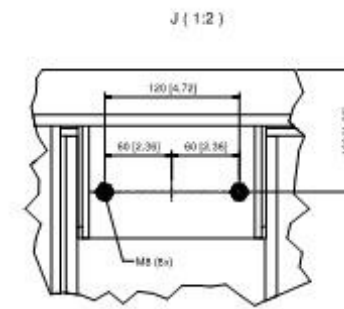
- The V9000 Seismograph is a rugged piece of monitoring equipment designed to be weatherproof. It has a toughened Perspex screen which protects the LCD, and the PELI case can withstand severe handling.
- It is designed to be used indoors as well as outdoors but should be protected from the worst of wet conditions. Placing the instrument in a plastic bag during use in heavy rain or muddy conditions will prolong the life of the unit.
- Be aware that when the lid is open, the Seismograph is no longer weatherproof. It is recommended that if the batteries need changing during wet conditions, they are to be changed under cover.

Document Owner:	Reviewed by:	System Approval:	Approval No:
J Ball	J Ball	P Smith	1605
Chief Geotechnical Engineer	Chief Geotechnical Engineer	SHEQ Manager	
<i>This document is uncontrolled when printed - The controlled copy is on the T:Drive</i>			

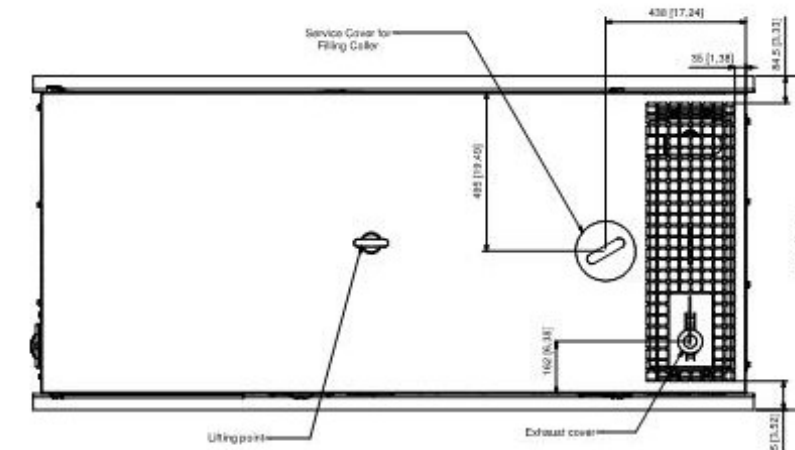
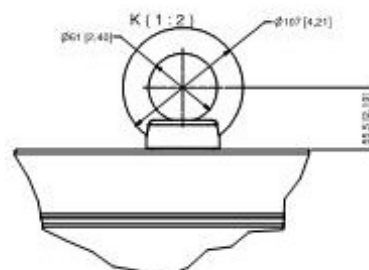
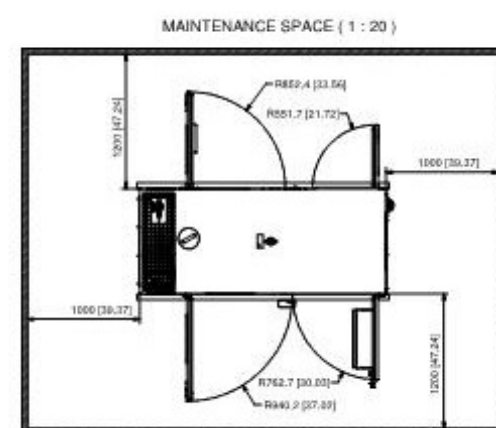
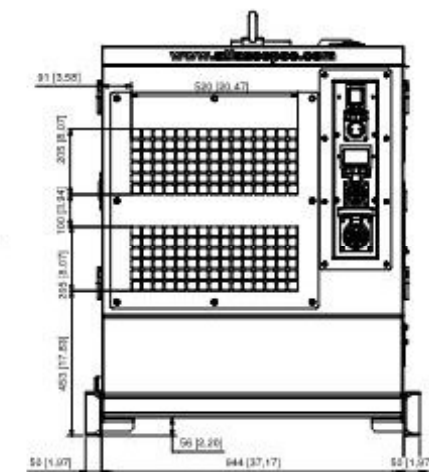
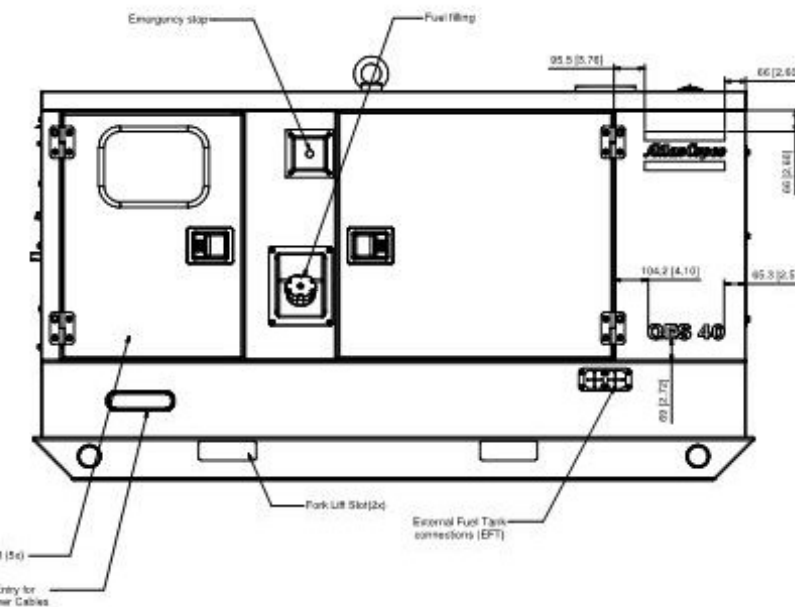
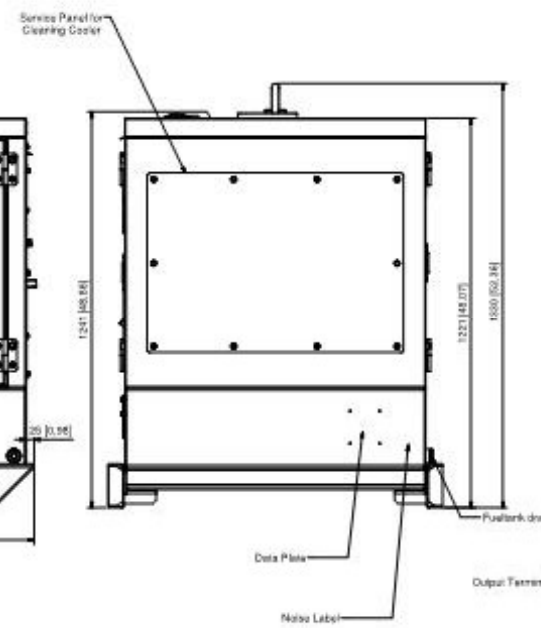
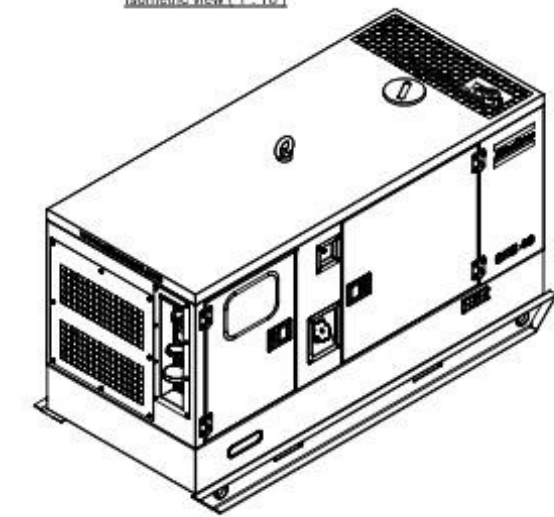
Appendix 5 – Generator Details

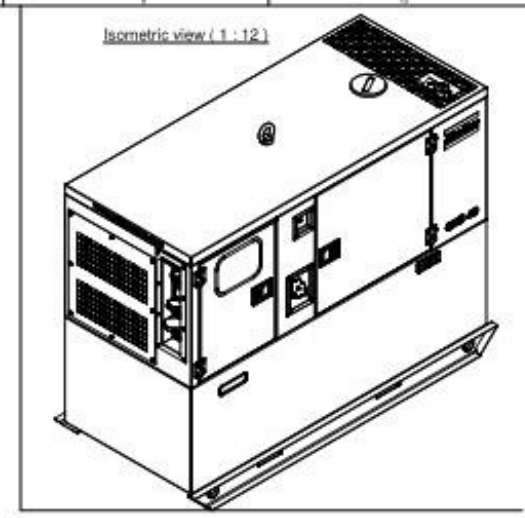




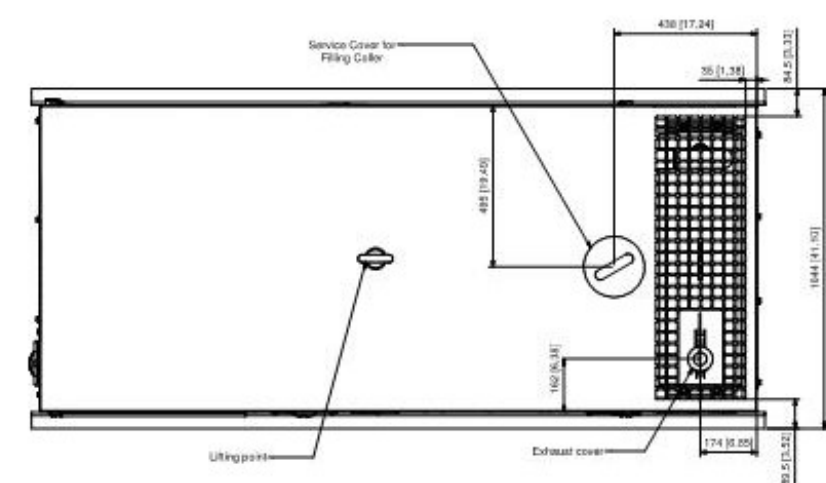
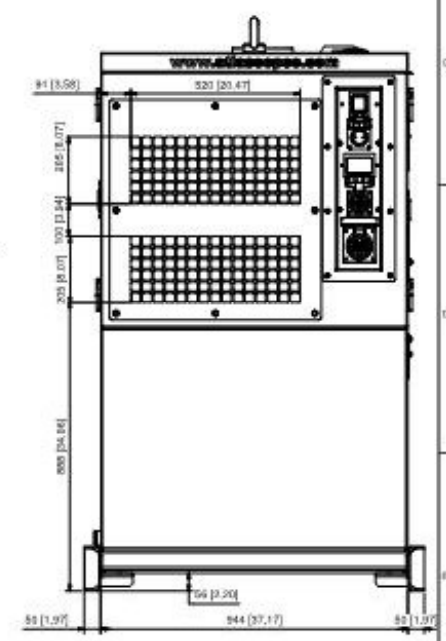


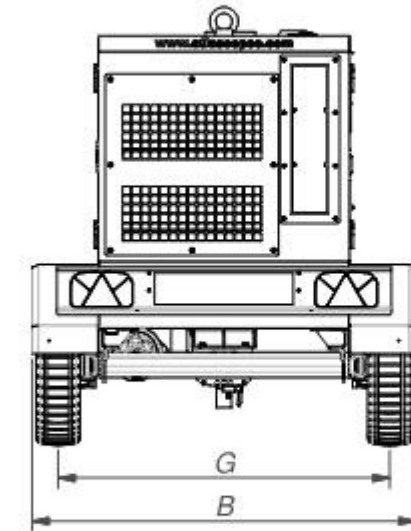
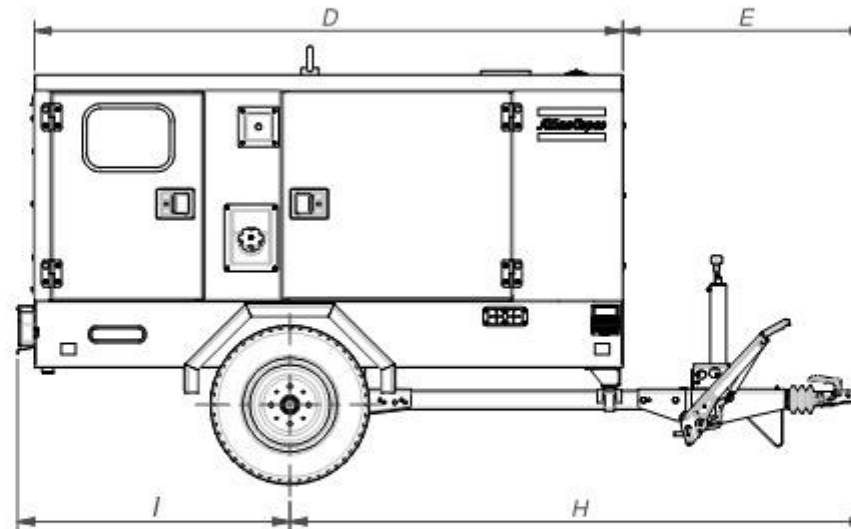
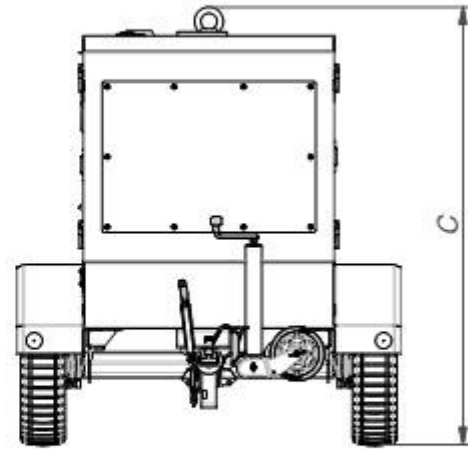
Isometric view (1:10)

[illegible]



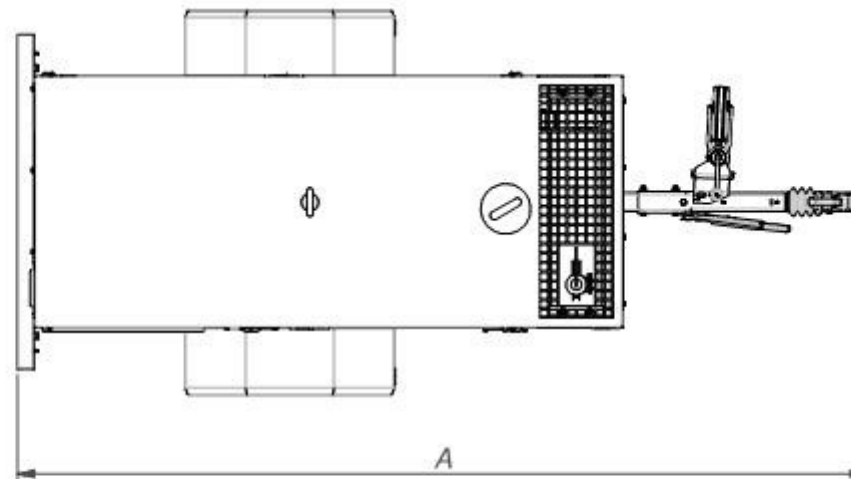
Isometric view (1 : 12)

[illegible]



FIXED TOWBAR, QES		
A	Total length (mm)	See coupling system table
B	Total width (mm)	1435
C	Total height (mm)	1640
D	Base frame length (mm)	2200
E	Towbar length (mm)	See coupling system table
F	Towbar height (mm)	320
G	Wheel track width (mm)	1240
H	Front cantilever (mm)	See coupling system table
I	Rear cantilever (mm)	1020

*COUPLING SYSTEM				
Type	REF. AL-KO	A	E	H
AK160 HEAD Ø 50	249277	3180	915	2160
AK300 HEAD Ø 50	246960	2722	915	2160
DIN EYE Ø 40	242252	3204	939	2184
ITA EYE Ø 45	242255	3212	947	2192
FRA EYE Ø 68	1212071	3206	941	2186
NATO EYE Ø 76	242253	3214	949	2194
UK EYE Ø 40	638671	3199	934	2179
FRA RING Ø 40	242254	3192	927	2172



WEIGHT DISTRIBUTION, QES BOX AC			
Maxim un empty weight (Kg.)	Total	Weight on axle	Weight on towing eye
	1230	1165	65
Minim un empty weight (Kg.)	Total	Weight on axle	Weight on towing eye
	1090	1018	72
MTPM (Kg.)	1.350		

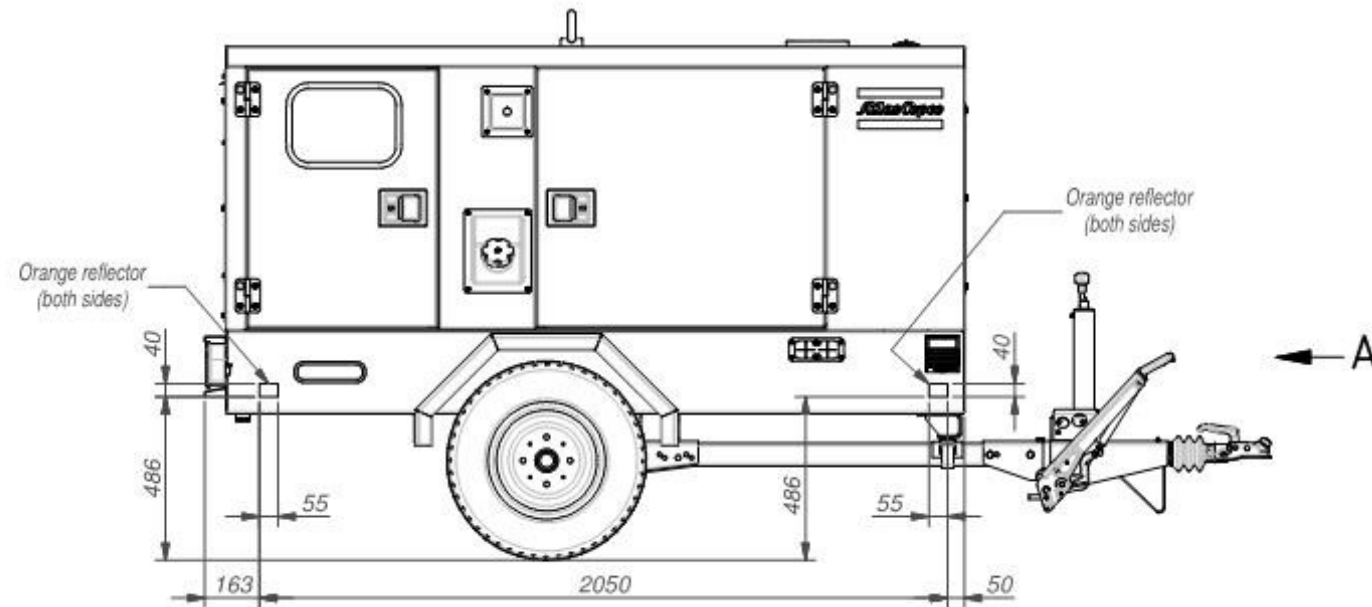
Tolerances, if not indicated, according to:		General tolerances							
		1350K - mK							
Name		DIMENSION DRWG QES BOX A UNDERCARRIAGE			Confidentiality Class acc. to 1102 K				
Material					Confidential				
Treatment		Not Applicable			Thickness:		INV		
	Scale	1:25		Family	A3	Compare	Drawing owner ESF		
	Drawn by	jalobera		Blank nr.		Replaces			
STATUS	Version Drwg	00	Blank wt	Kg	Finil wt.	745,874 Kg	Designation	Sheet	1 / 4
Approved	Des checked.		Prod checked.		Approved.	Date	10/03/2015	1636006137	

CONFIDENTIAL:

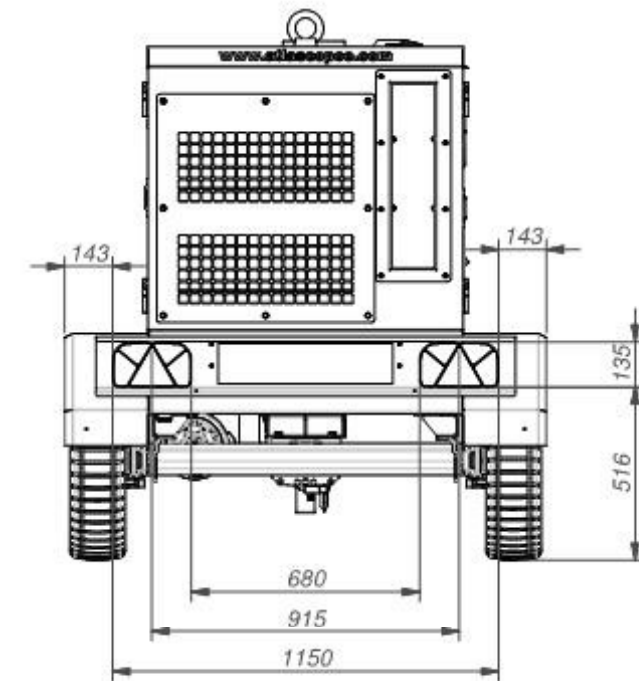
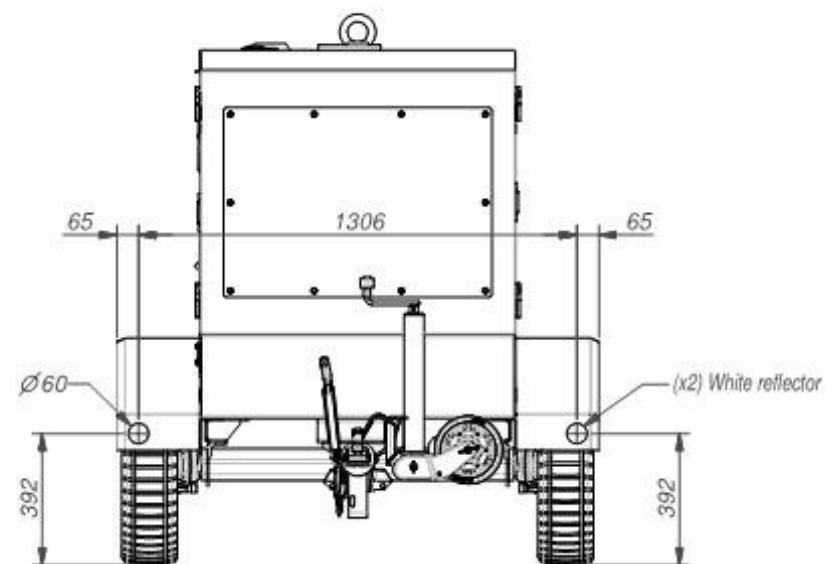
This document is our property and shall not without our permission be altered, copied, used for manufacturing or communicated to any other person or company.

00					1636006137	00
Ed	Position	Modified from	Date	Intr./Appd.	Parent 3D Model	3D Model Edition

LIGHTING COMPONENTS



A (1 : 20)



REAR LIGHTS

CONFIDENTIAL:

This document is our property and shall not without our permission be altered, copied, used for manufacturing or communicated to any other person or company.

00				1636006137	00
Ed	Position	Modified from	Date	Intr./Appd.	Parent 3D Model
					3D Model Edition

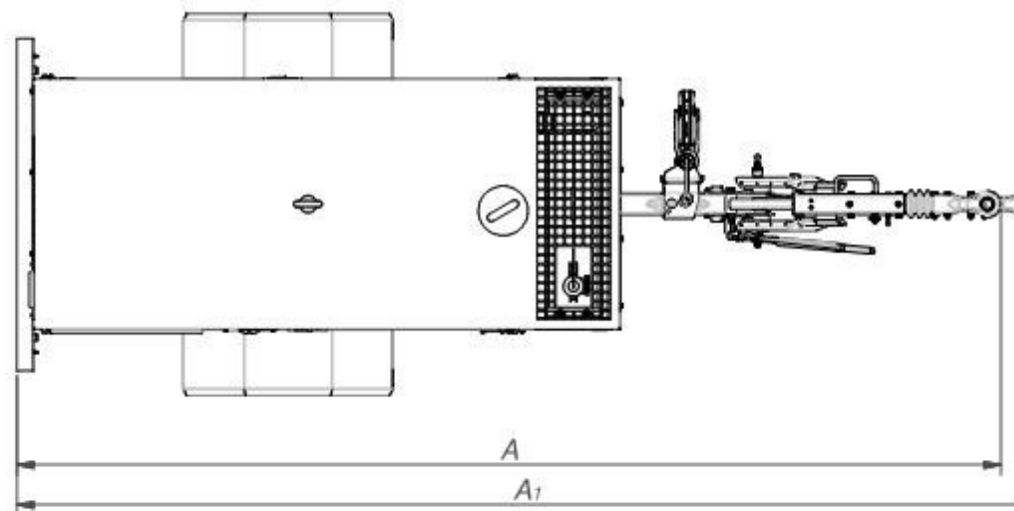
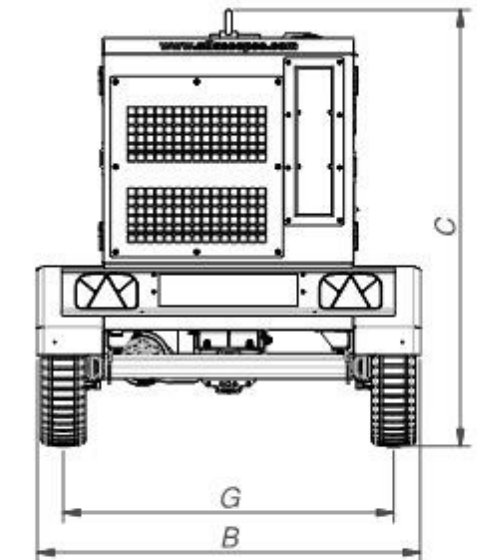
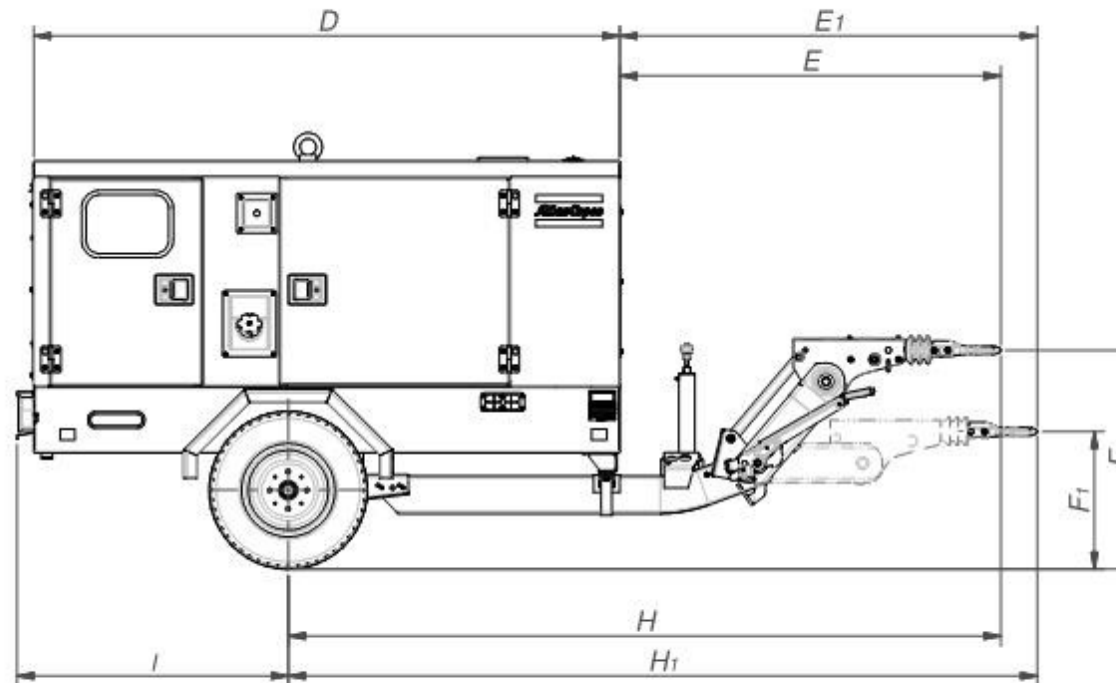
Tolerances, if not indicated, according to:					
Name DIMENSION DRWG			QES BOX A UNDERCARRIAGE		
Material			Confidentiality Class acc. to 1102 K		
Treatment Not Applicable			Confidential		
			Thickness: INV		
Scale 1:20		Family		A3 Compare	
Drawn by jalobera		Blank nr.		Replaces	
Version Drwg 00		Blank wt Kg		Fini wt. 745,874 Kg	
Des checked.		Prod checked.		Approved.	
Date 10/03/2015		Designation		Sheet 2 / 4	
Approved		1636006137		Drawing owner ESF	



ARTICULATED TOWBAR. QES. (mm.)		
A	Total lenght	*See coupling system table
A1	Total lenght 1	A+140
B	Total width	1435
C	Total height	1640
D	Base frame lenght	2200
E	Towbar lenght	*See coupling system table
E1	Towbar lenght 1	E+140
F	Towbar height	825
F1	Towbar height 1	445
G	Wheel track width	1240
H	Front cantilever	*See coupling system table
H1	Front cantilever 1	H+140
I	Rear cantilever	1018

*COUPLING SYSTEM (mm.)				
Type	REF. AL-KO	A	E	H
AK160 HEAD Ø50	249277	3639	1376	2621
DIN EYE Ø 40	1 213 350	3693	1430	2675
UK EYE Ø 30	1 224 106	3642	1379	2624
UK EYE Ø 40	1 224 107	3679	1416	2661
UK EYE Ø 50,8	1 224 109	3742	1479	2724
ITA EYE Ø 45	1 224 108	3673	1410	2655
FRA EYE Ø 68	1 224 110	3642	1379	2624
NATO EYE Ø 76	1 224 111	3671	1408	2653
SWEDEN EYE VBG Ø 57,5	1 225 076	3759	1496	2741

QES WEIGHT DISTRIBUTION. (KG.)			
Maximum weight (Full fuel tank)	Total	Weight on axle	Weight on towing eye
	1270	1191	79
Minimum weight (Empty fuel tank)	Total	Weight on axle	Weight on towing eye
	1130	1054	76
MTPM (Kg.)	1.350		



Tolerances, if not indicated, according to:		General tolerances				
		1350K - mK				
Name		DIMENSION DRWG			QES BOX A UNDERC. HA	
Material					Confidentiality Class acc. to 1102 K Confidential	
Treatment						
					Thickness:	INV
	Scale	1:25	Family	A3	Compare	Drawing owner ESF
	Drawn by	jalobera	Blank nr.		Replaces	
STATUS	Version Drwg	Blank wt	Kg	Finl wt.	Designation	Sheet
	00			699,558		1 / 4
Approved	Des checked.	Prod checked.	Approved.	Date	1636006147	
				10/03/2015		

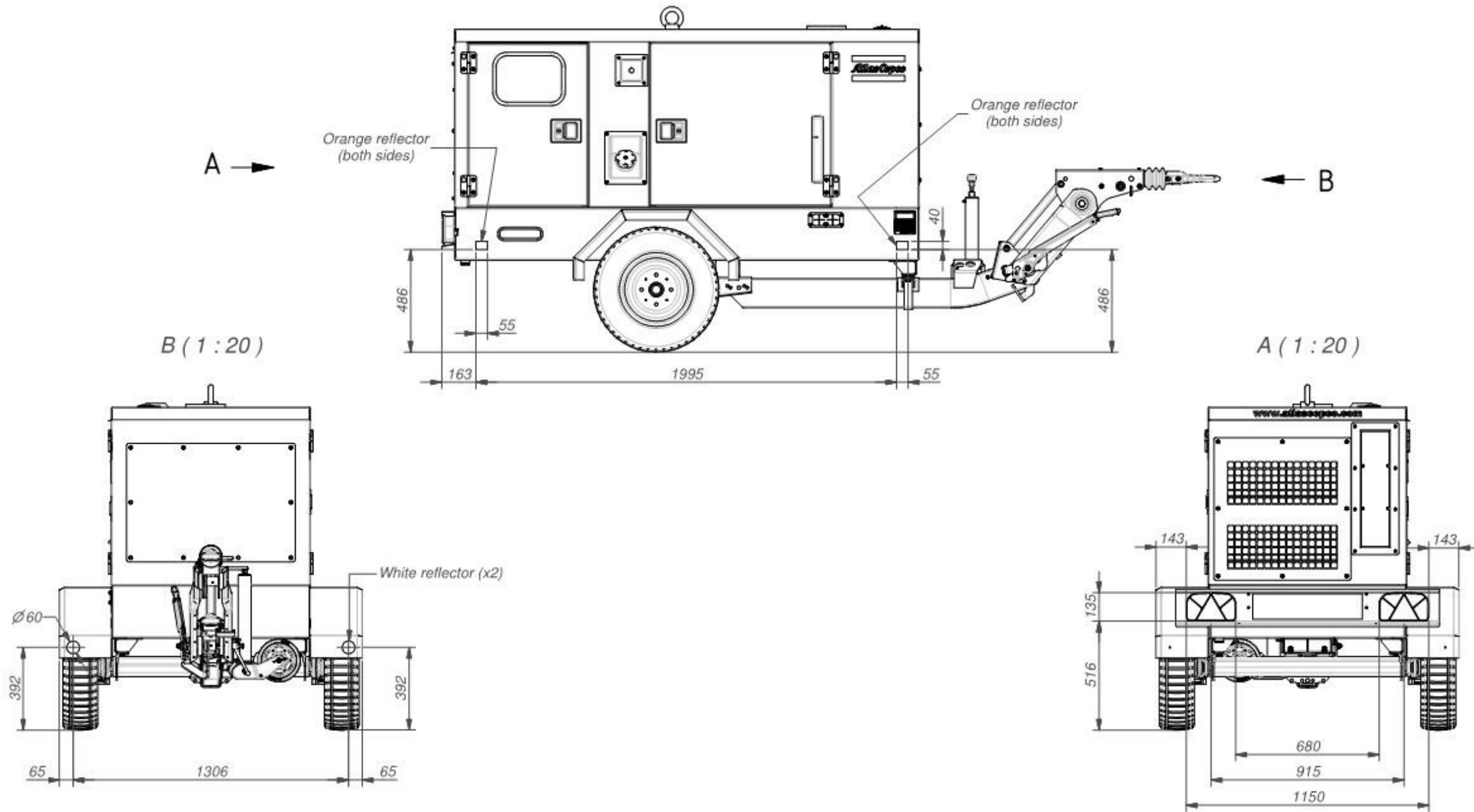
CONFIDENTIAL:

This document is our property and shall not without our permission be altered, copied, used for manufacturing or communicated to any other person or company.

00					1636006147	00
Ed	Position	Modified from	Date	Intr./Appd.	Parent 3D Model	3D Model Edition

1 2 3 4 5 6 7 8 9 10

LIGHTING COMPONENTS



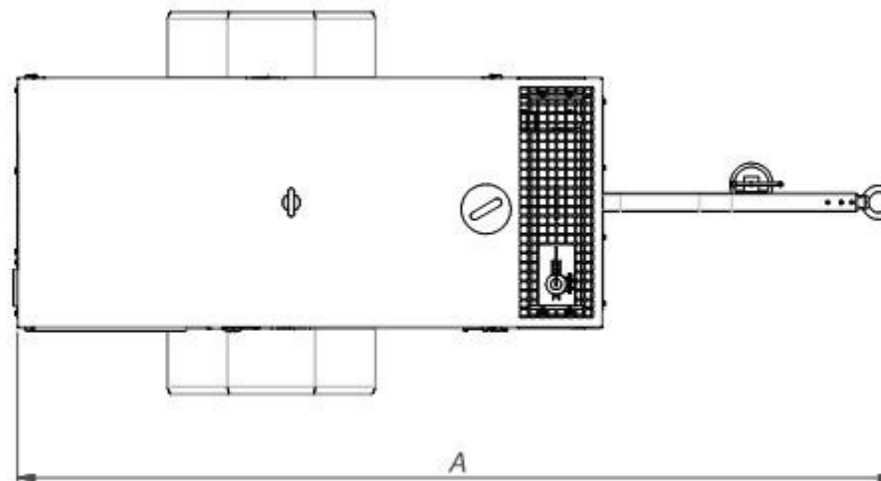
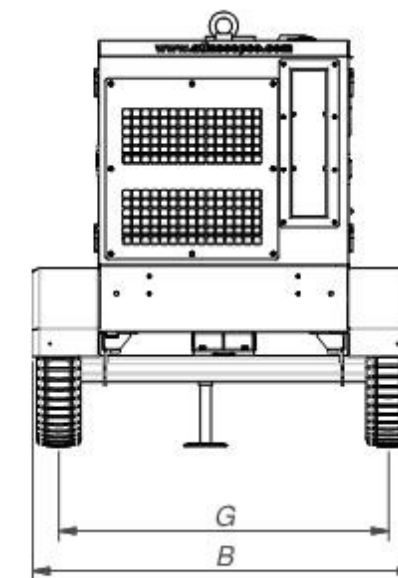
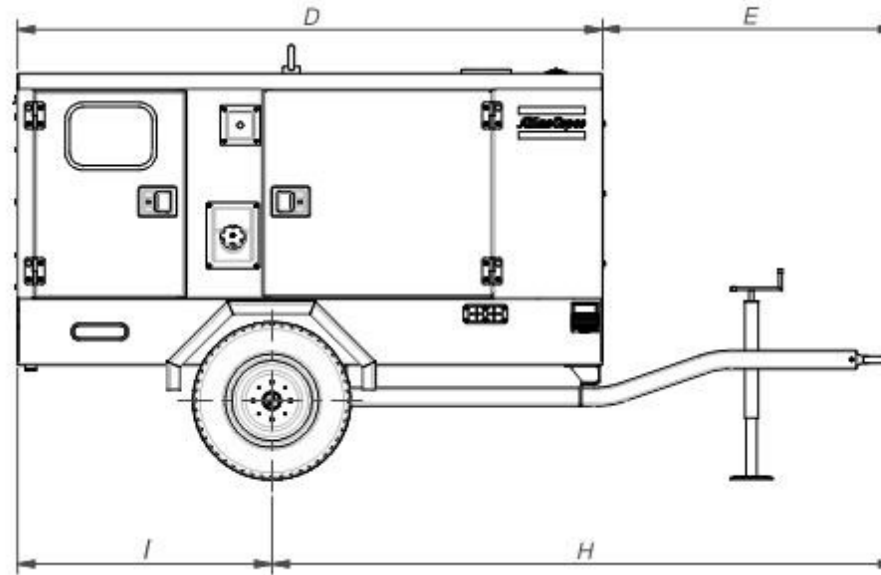
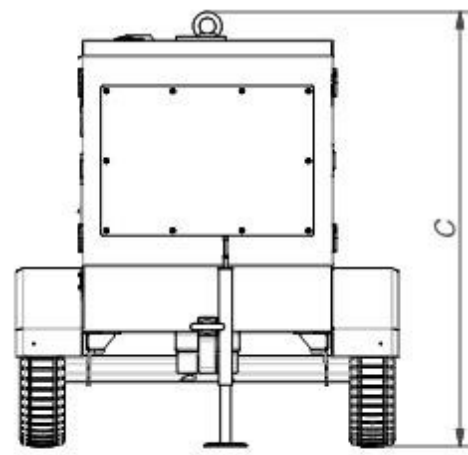
CONFIDENTIAL:

This document is our property and shall not without our permission be altered, copied, used for manufacturing or communicated to any other person or company.

00					1636006147	00
Ed	Position	Modified from	Date	Intr./Appd.	Parent 3D Model	3D Model Edition

Tolerances, if not indicated, according to:						
Name			DIMENSION DRWG			QES BOX A UNDERC. HA
Material						Confidentiality Class acc. to 1102 K
Treatment						Confidential
						Thickness: INV
						Drawing owner
						ESF
						Sheet 2 / 4
						Designation
						1636006147
						Date
						10/03/2015
						Des checked.
						Prod checked.
						Approved.
						Date
						10/03/2015
						Version Drwg
						00
						Blank wt
						Kg
						Finl wt.
						699,558 Kg
						STATUS
						Approved

1 2 3 4 5 6 7 8 9 10

**NOT HOMOLOGATED TOW BAR. QES BOX A**

A	Total lenght (mm)	3302
B	Total width (mm)	1435
C	Total height (mm)	1635
D	Base frame lenght (mm)	2200
E	Towbar lenght (mm)	1102
F	Towbar height (mm)	320
G	Wheel track width (mm)	1240
H	Front cantilever (mm)	2345
I	Rear cantilever (mm)	957

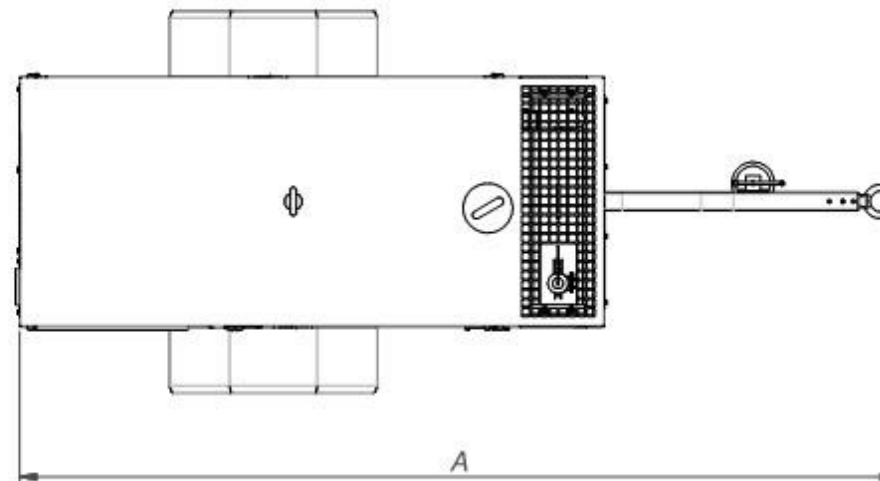
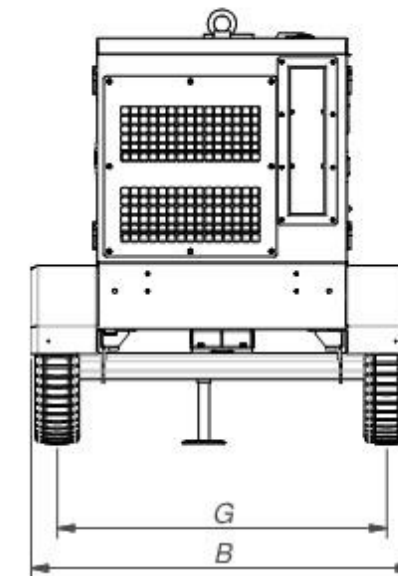
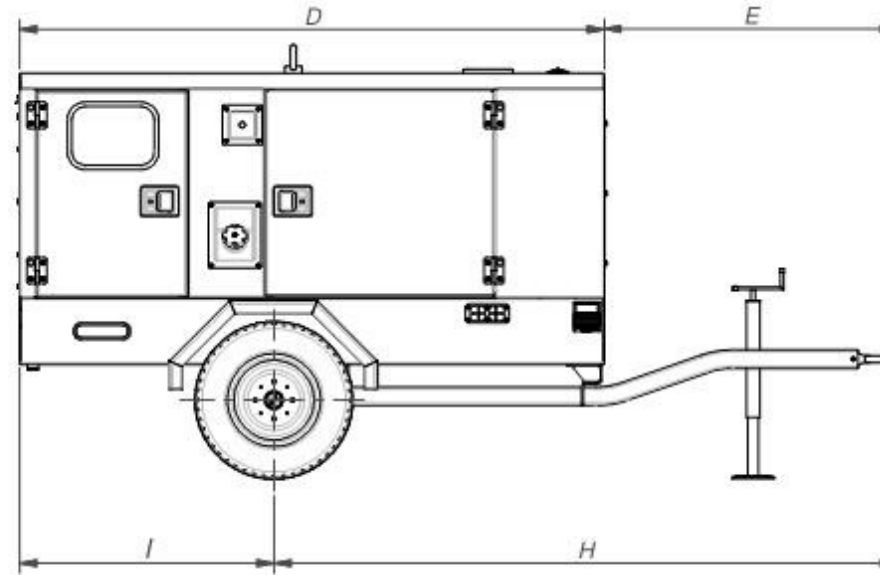
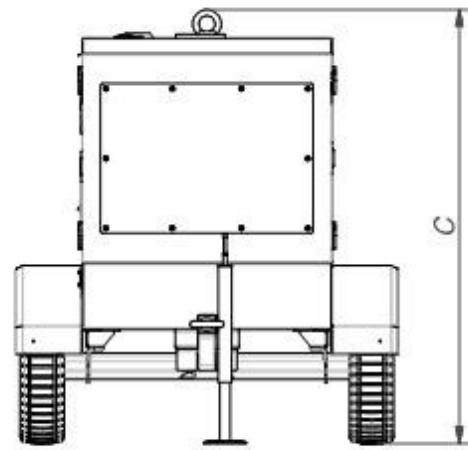
Tolerances, if not indicated, according to:			General tolerances								
			1350K - mK								
Name			DIMENSION DRWG			QES BOX A UC OFF ROA					
Material						Confidentiality Class acc. to 1102 K					
Treatment						Confidential					
						Thickness: INV					
		Scale		1:25		Family		A3	Compare		Drawing owner ESF
		Drawn by		jalobera		Blank nr.		Replaces			
		Version Drwg		00		Blank wt.		Kg		Finl wt.	
STATUS						619,605 Kg		Designation		Sheet 1 / 2	
Approved		Des checked.		Prod checked.		Approved.		Date		20/04/2015	
								1636006689			

CONFIDENTIAL:

This document is our property and shall not without our permission be altered, copied, used for manufacturing or communicated to any other person or company.

00					1636006689	00
Ed	Position	Modified from	Date	Intr./Appd.	Parent 3D Model	3D Model Edition

1 2 3 4 5 6 7 8 9 10



NOT HOMOLOGATED TOW BAR. QES BOX A		
A	Total length (mm)	3302
B	Total width (mm)	1435
C	Total height (mm)	1635
D	Base frame length (mm)	2200
E	Tow bar length (mm)	1102
F	Tow bar height (mm)	320
G	Wheel track width (mm)	1240
H	Front cantilever (mm)	2345
I	Rear cantilever (mm)	957

Tolerances, if not indicated, according to:			
Name		DIMENSION DRWG QES BOX A UC OFF ROA	
Material		Confidentiality Class acc. to 1102 K	
Treatment		Confidential	
		Thickness: INV	
Scale		Family	A3 Compare
Drawn by jalohera		Blank nr.	Replaces
Version Drwg 00		Blank wt Kg	619,605 Kg
Des checked.		Prod checked.	Approved.
Date		20/04/2015	
STATUS		Approved	
Designation		1636006689	
Sheet		2 / 2	

CONFIDENTIAL:

This document is our property and shall not be copied, altered, or communicated to any other person or company.

00					1636006689	00
Ed	Position	Modified from	Date	Intr./Appd.	Parent 3D Model	3D Model Edition

HIMOINSA
A YANMAR COMPANY

HRYW-35 T5
RENTAL RANGE
Powered by YANMAR



SERVICE		PRP	ESP
POWER	kVA	34	37
POWER	kW	27	30
RATED SPEED	r.p.m.	1.500	
STANDARD VOLTAGE	V	400/230	
AVAILABLE VOLTAGES	V	230/132 - 230 V (t)	
RATED AT POWER FACTOR	Cos Phi	0,8	



RENTAL RANGE

HIMOINSA Company with quality certification ISO 9001

HIMOINSA gensets are compliant with EC mark which includes the following directives:

- 2006/42/CE Machinery safety.
- 2014/30/EU Electromagnetic compatibility.
- 2014/35/EU electrical equipment designed for use within certain voltage limits.
- 2000/14/EC Sound Power level. Noise emissions outdoor equipment. (amended by 2005/68/EC)
- 97/68/EC Emissions of gaseous and particulate pollutants. (amended by 2012/46/EU)
- EN 12100, EN 13957, EN 60204

Ambient conditions of reference according to ISO 8528-1:2018 normative: 1000 mbar, 25°C, 30% relative humidity.

Prime Power (PRP):

According to ISO 8528-1:2018, Prime power is the maximum power which a generating set is capable of delivering continuously whilst supplying a variable electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer. The permissible average power output (IPPP) over 24 h of operation shall not exceed 70 % of the PRP.

Emergency Standby Power (ESP):

According to ISO 8528-1:2018, Emergency standby power is the maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a utility power outage or under test conditions for up to 200 h of operation per year with the maintenance intervals and procedures being carried out as prescribed by the manufacturer. The permissible average power output over 24 h of operation shall not exceed 70 % of the ESP.

Continuous Power (ICOP): According to Standard ISO 8528-1:2018, this is the maximum power available for continuous loads for unlimited running hours a year between the maintenance times recommended by the manufacturer under the environmental conditions established by the same.

G2 class load acceptance in accordance with ISO 8528-5:2013

HIMOINSA HEADQUARTERS:

Fábrica: Ctra. Murcia - San Javier, Km. 23,6 | 30730 SAN JAVIER (Murcia) Spain
Tel: +34 968 19 11 28 Fax: +34 968 19 12 17 Fax: +34 968 19 04 20
info@himoinsa.com | www.himoinsa.com

Manufacture facilities:

SPAIN • FRANCE • INDIA • CHINA • USA • BRAZIL • ARGENTINA

Subsidiaries:

PORTUGAL | POLAND | GERMANY | UK | SINGAPORE | UAE | PANAMA | DOMINICAN REPUBLIC | ARGENTINA | ANGOLA | SOUTH AFRICA



SOUNDPROOFED RENTAL

B10R

B10R



WATER-COOLED



THREE PHASE



50 HZ



STAGE 3A



DIESEL

Himoinsa has the right to modify any feature without prior notice.

Weights and dimensions based on standard products. Illustrations may include optional equipment.

Technical data described in this catalogue correspond to the available information at the moment of printing.

The illustrations and images are indicative and may not coincide in their entirety with the product.

Industrial design under patent.





Engine Specifications | 1.500 r.p.m.

Rated Output (PRP)	kW	30,7
Rated Output (ESP)	kW	34,1
Manufacturer	YANMAR	
Model	4TNV98IGEHR	
Engine Type	4-stroke diesel	
Injection Type	Direct	
Aspiration Type	Natural	
Number of cylinders and arrangement	4-L	
Bore and Stroke	mm	98 x 110
Displacement	L	3,319
Cooling System	Coolant	
Lube Oil Specifications	SAE 3 class 10W30 / API grade CD,CF	
Compression Ratio	18,5	

Fuel Consumption ESP	l/h	8,53
Fuel Consumption 100% PRP	l/h	7,60
Fuel Consumption 75 % PRP	l/h	5,70
Fuel Consumption 50 % PRP	l/h	4,05
Lube oil consumption with full load	g/kWh	0,27
Total oil capacity	L	10,5
Total coolant capacity	L	9
Governor	Type	Mechanical
Air Filter	Type	Dry
Inner diameter exhaust pipe	mm	45



- Diesel engine
- 4-stroke cycle
- Water-cooled
- 12V electrical system
- Water separator filter (visible level)
- Dry air filter
- Radiator with pusher fan
- Mechanical governor
- Hot parts protection
- Moving parts protection



Generator Specifications | STAMFORD

Manufacturer	STAMFORD	
Model	S1L2.J1	
Poles	No.	4
Connection type (standard)	Star-series	
Mounting type	S-3 11°1/2	
Insulation	Class	H class

Enclosure (according IEC-34-5)	IP23
Exciter system	Self-excited, brushless
Voltage regulator	A.V.R. (Electronic)
Bracket type	Single bearing
Coupling system	Flexible disc
Coating type	Standard (Vacuum impregnation)

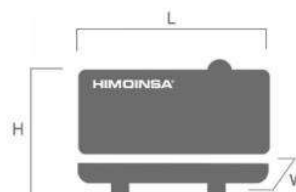


- Self-excited and self-regulated
- IP23 protection
- H class insulation



WEIGHT AND DIMENSIONS

		Standard Version	Optional version	High Capacity version	High Capacity version
Length (L)	mm	2.150	2.150	2.150	2.150
Height (H)	mm	1.329	1.329	1.557	1.557
Width (W)	mm	1.025	1.025	1.025	1.025
Maximum shipping volume	m ³	2,93	2,93	3,43	3,43
Weight with liquids in radiator and sump	Kg	917	957	1007	1062
Fuel tank capacity	L	100	100	190	330
Autonomy	Hours	18	18	33	58
		Plastic tank	Steel tank	Steel tank	Steel tank



SOUND PRESSURE

Sound pressure level	dB(A)@7m	66 ± 2,4
----------------------	----------	----------

APPLICATION DATA

EXHAUST SYSTEM

Maximum exhaust temperature	°C	550
Exhaust Gas Flow	m ³ /min	8,52
Maximum allowed back pressure	mm H ₂ O	1300
Exhaust Flange Size (external diameter)	mm	65

NECESSARY AMOUNT OF AIR

Intake air flow	m ³ /h	134,42
Cooling Air Flow	m ³ /s	0,979
Alternator fan air flow	m ³ /s	0,177

STARTING SYSTEM

Starting power	kW	2,3
Starting power	CV	3,13
Recommended battery	Ah	92
Auxiliary Voltage	Vdc	12

FUEL SYSTEM

Fuel Oil Specifications		Diesel
Fuel Tank	L	100
Other fuel tank capacities	L	100, 190, 330



Soundproofed version

- Steel chassis
- Manhole to fill the radiator
- Pre-installation or niche to house the quick connection hydraulic fittings for fuel transfer
- Anti-leakage chassis, predisposed to retain liquids (retention tray)
- Manhole for fuel tank cleaning and drainage
- Manhole for chassis cleaning
- Oversized chassis to protect the bodywork
- Slide carriage and brackets for transportation with forklift
- Tilting cap in the exhaust
- Anti-vibration shock absorbers
- Chassis with integrated fuel tank
- Fuel level gauge
- Bodywork made from high quality steel plate
- High mechanical strength
- Low noise emissions level
- Soundproofing provided by high-density volcanic rock wool
- Epoxy polyester powder coating
- Full access for maintenance (water, oil and filters, no need to remove the canopy)
- Reinforced lifting hooks for crane hoisting
- Steel residential silencer -35db(A) attenuation.
- Oil sump extraction kit
- Versatility to assemble a high capacity chassis with a metallic fuel tank
- External filling of the fuel tank with safety key
- Emergency stop button (double emergency stop protection: Interior on the panel + Exterior on the bodywork)
- Mechanized for power cable output
- Door with window to visualize control panel, alarms and measurements
- Pressure locks
- IP Protection according to ISO 8528-13:2016
- 3 way valve for external fuel supply (available in 1/2" and 3/8" fittings) (Optional).
- Fuel transfer pump (Optional).



FEATURES OF THE CONTROL UNITS

	CEM 7
Generator Readings	Voltage between phases
	Voltage between neutral and phase
	Current intensities
	Frequency
	Apparent power (Kva)
	Active power (Kw)
	Reactive power (kVAr)
	Power factor
Mains Readings	Voltage between phases
	Voltage between phases and neutral
	Current intensities
	Frequency
	Apparent power
	Active power
	Reactive power
Engine Readings	Power factor
	Coolant temperature
	Oil pressure
	Fuel level (%)
	Battery voltage
	R.P.M.
Engine Protections	Battery charge alternator voltage
	High water temperature
	High water temperature by sensor
	Low water temperature by sensor
	Low oil pressure
	Low oil pressure by sensor
	Low water level
	Unexpected shutdown
	Fuel storage
	Fuel storage by sensor
	Stop failure
	Battery voltage failure
	Battery charge alternator failure
	Overspeed
	Underspeed
	Start failure
	Emergency stop

• Standard

⓪ Optional



	CEM 7
Alternator Protections	High frequency
	Low frequency
	High voltage
	Low voltage
	Short-circuit
	Asymmetry between phases
	Incorrect phase sequence
	Inverse power
	Overload
	Genset signal drop
Counters	Total hour counter
	Partial hour counter
	Kilowatt meter
	Starts valid counters
	Starts failure counters
Communications	Maintenance
	RS232
	RS485
	Modbus IP
	Modbus
	CCLAN
	Software for PC
	Analogue modem
	GSM/GPRS modem
	Remote screen
Features	Tele signal
	J1939
	Alarm history
	External start
	Start inhibition
	Mains failure start
	Start under normative EJP
	Pre-heating engine control
	Genset contactor activation
	Mains & Genset contactor activation
Special Functions	Fuel transfer control
	Engine temperature control
	Manual override
	Programmable alarms
	Genset start function in test mode
	Programmable outputs
	Multilingual
	GPS Positioning
	Synchronisation
	Mains synchronization
	Second Zero elimination
	RAM7
	Remote screen
	Programming timer

• Standard

⓪ Optional





CONTROL PANELS



M5

Digital manual Auto-Start control panel and thermal magnetic protection (depending on current and voltage) and differential with CEM7.
Digital control unit CEM7



Electrical system

- M5 control panel with electronic CEM7 control unit and switched emergency stop
- Power panel with built-in circuit breaker plates
- Safety relay in output terminal board (thermal magnetic trip and alarm in control unit)
- Adjustable earth leakage protection (time & sensitivity) standard in M5 and AS5, with thermal magnetic protection
- 4-pole thermal magnetic circuit breaker
- Battery charger alternator with ground connection
- Starter battery/ies installed (cables and bracket included)
- Ground connection electrical installation with connection ready for ground spike (not supplied)
- Battery Switch (Optional).