

SERVICE MANUAL

WEI50B Wheeled Excavator

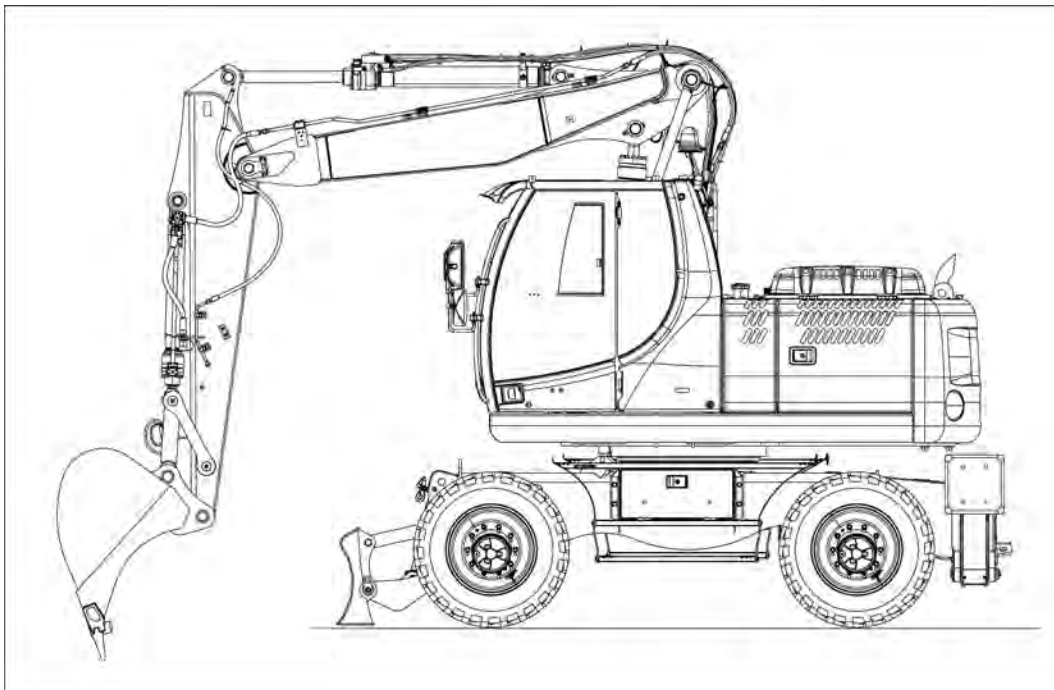
Part number 47500165

English
January 2013





SERVICE MANUAL



WE150B

Contents

INTRODUCTION

Engine.....	10
[10.001] Engine and crankcase	10.1
[10.202] Air cleaners and lines	10.2
[10.206] Fuel filters	10.3
[10.216] Fuel tanks	10.4
[10.254] Intake and exhaust manifolds and muffler	10.5
[10.400] Engine cooling system	10.6
Transmission.....	21
[21.105] Powershift transmission lubrication system	21.1
[21.113] Powershift transmission	21.2
[21.135] Powershift transmission external controls.....	21.3
[21.155] Powershift transmission internal components.....	21.4
Four-Wheel Drive (4WD) system	23
[23.314] Drive shaft.....	23.1
Front axle system	25
[25.100] Powered front axle	25.1
[25.102] Front bevel gear set and differential	25.2
[25.108] Final drive hub, steering knuckles, and shafts	25.3
[25.122] Axle suspension control.....	25.4
Rear axle system.....	27
[27.100] Powered rear axle.....	27.1
[27.106] Rear bevel gear set and differential.....	27.2
[27.120] Planetary and final drives	27.3
Brakes and controls	33
[33.110] Parking brake or parking lock	33.1

[33.202] Hydraulic service brakes	33.2
Hydraulic systems.....	35
[35.000] Hydraulic systems.....	35.1
[35.102] Pump control valves.....	35.2
[35.106] Variable displacement pump	35.3
[35.300] Reservoir, cooler, and filters.....	35.4
[35.304] Combination pump units	35.5
[35.352] Hydraulic swing system	35.6
[35.353] Hydraulic travel system	35.7
[35.354] Hydraulic central joint	35.8
[35.357] Pilot system	35.9
[35.359] Main control valve.....	35.10
[35.360] Hammer and rotating bucket hydraulic system	35.11
[35.703] Stabilizer hydraulic system.....	35.12
[35.730] Positioning arm hydraulic system	35.13
[35.736] Boom hydraulic system	35.14
[35.737] Dipper hydraulic system.....	35.15
[35.738] Excavator and backhoe bucket hydraulic system.....	35.16
[35.741] Dozer blade cylinders	35.17
Frames and ballasting	39
[39.103] Swing ring assembly	39.1
[39.129] Stabilizers	39.2
[39.140] Ballasts and supports	39.3
Steering.....	41
[41.101] Steering control	41.1
[41.106] Tie rods.....	41.2
[41.200] Hydraulic control components.....	41.3
[41.216] Cylinders	41.4
Wheels	44

[44.511] Front wheels.....	44.1
Cab climate control	50
[50.200] Air conditioning	50.1
Electrical systems	55
[55.000] Electrical system	55.1
[55.010] Fuel injection system	55.2
[55.012] Engine cooling system	55.3
[55.014] Engine intake and exhaust system.....	55.4
[55.015] Engine control system.....	55.5
[55.020] Transmission speed sensors.....	55.6
[55.031] Parking brake electrical system	55.7
[55.036] Hydraulic system control	55.8
[55.050] Heating, Ventilation, and Air-Conditioning (HVAC) control system.....	55.9
[55.100] Harnesses and connectors.....	55.10
[55.110] Electrical rotary joint.....	55.11
[55.302] Battery.....	55.12
[55.404] External lighting	55.13
[55.425] Boom, dipper, and bucket control system.....	55.14
[55.512] Cab controls.....	55.15
[55.514] Cab lighting	55.16
[55.525] Cab engine controls	55.17
[55.530] Camera.....	55.18
[55.640] Electronic modules	55.19
Booms, dippers, and buckets	84
[84.100] Bucket.....	84.1
[84.910] Boom	84.2
Dozer blade and arm.....	86
[86.110] Dozer blade	86.1

Platform, cab, bodywork, and decals	90
[90.118] Protections and footboards	90.1
[90.120] Mechanically-adjusted operator seat	90.2
[90.150] Cab	90.3



INTRODUCTION

Contents

INTRODUCTION

Safety rules	3
Note to the Owner	4
Personal safety	6
Product overview	15
Basic instructions	19
Dimension	20
Weight	26
General specification	27
Capacities	33
General specification	35
Consumables	40
Product identification	41

Safety rules

Carefully read the safety rules contained herein and follow advised precautions to avoid potential hazards and to safeguard your safety and personal integrity.

In this manual you will find the following indications:

NOTICE: *With specific warnings about potential dangers for the operator's or other persons integrity directly or indirectly involved.*

ATTENTION: *This symbol warns about the possibility of potential damages to the machine that can involve the operator's safety.*

The non compliance with the warning preceded by the above mentioned key-words (DANGER and WARNING) can cause serious accidents or the death of the persons involved.

Moreover, this manual contains some instructions, preceded by the words NOTE and CAUTION, with following meanings for machine protection:

NOTE: *It emphasizes and underlines to the operator the correct technique or correct procedure to follow.*

ATTENTION: *It warns the operator of a possible hazard of machine damage in case he does not follow a determined procedure.*

Your safety and that of people around you depends on you. It is essential that you understand this manual to perform the operation correctly and safely.



TULI12WEX2001AA 1

Note to the Owner

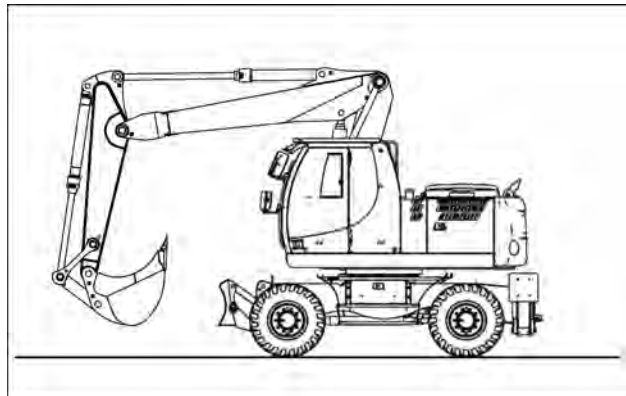
The wheeled excavators are operation hydraulic machines.

They essentially consist in a wheeled undercarriage on which a slewing bearing is mounted, which is coupled to the upper frame.

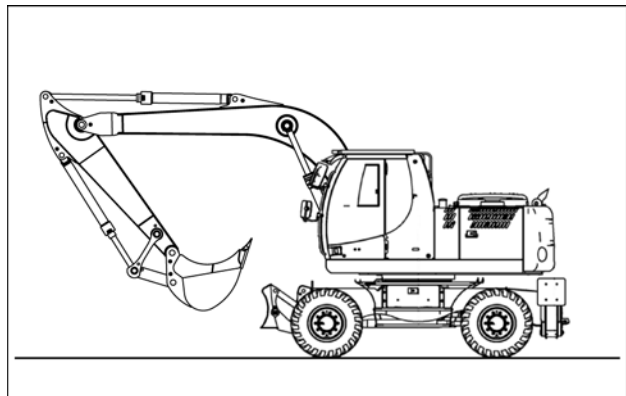
The upper frame supports the front attachment, the engine, the hydraulic components, the cab, the fuel tank and the counterweight.

When the operator activates the controls (hydraulic control levers and pedals), the hydraulic pumps rotated by the engine suck oil from the tank and convey it to the control valve, in turn, sends it to the relevant users.

A cooling system keeps the hydraulic fluid at a normal operating temperature.



SMIL12WEX0181AA 1



SMIL12WEX0182AA 2

Designated use

The machine has been built in accordance with state-of-the-art standards and the recognized safety rules. The machine must be used in accordance with its designated use, by observing the safety and precautionary rules and by strictly following the operating instructions. Any functional disorders, especially those affecting the safety of the machine, should therefore be rectified immediately.

The Excavator is intended to be used in digging and loading operation (with bucket or grab or clamshell bucket), ground levelling (with blade when installed) and use of hydraulic hammer to break concrete or other solid material.

Notice

A different use of the excavator or of its working equipment:

- For lifting or transporting persons.
- As a working platform.
- For lifting loads without the attachment being approved for this purpose.
- For pulling slung loads.
- For driving in posts, supports, sheet-piles, without the attachment being approved for this purpose.

Is considered contrary to the designated use.

Improper use may cause injury or life-threatening risks for the operator and for other persons.

The manufacturer/supplier cannot be held responsible for any damage resulting from other than the designated use. The risk involved in such misuse lies entirely with the user.

NOTICE: For clarity purposes, some figures in this Manual show the machine with protection panels or covers removed. Never operate the machine with any protection panels or covers removed.

NOTICE: *It is absolutely forbidden to tamper and/or change the setting of any of the hydraulic system valves to avoid damaging machine components with consequent risks to personal safety.*

Instructions concerning safety, operation and maintenance have been developed to permit safe service and operation of this machine.

Personal safety

Carefully read this Manual before proceeding with maintenance, repairs, refuelling or other machine operations.

Repairs have to be carried out only by authorized and instructed staff; specific precautions have to be taken when grinding, welding or when using mallets or heavy hammers.

Not authorized persons are not allowed to repair or carry out maintenance on this machine. Do not carry out any work on the equipment without prior authorization.

Ask your employer about the safety instructions in force and safety equipment.

Nobody is allowed to seat on the operator's place during machine maintenance unless he is a qualified operator helping with the maintenance work.

If it is necessary to move the equipment to carry out repairs or maintenance, do not lift or lower the equipment from any other position than the operator's seat.

Never carry out any operation on the machine when the engine is running, except when specifically indicated.

Stop the engine and ensure that all pressure is relieved from hydraulic circuits before removing caps, covers, valves, etc.

All repair and maintenance operations should be carried out with the greatest care and attention.

Service stairs and platforms used in a workshop or in the field should be built in compliance with the safety rules in force.

Any functional disorders, especially those affecting the safety of the machine, should therefore be rectified immediately.

⚠ DANGER

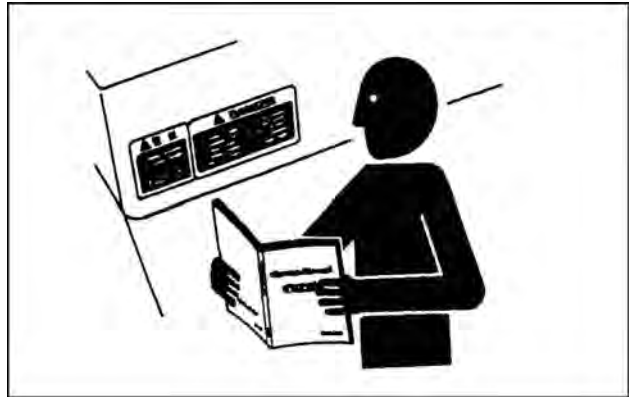
Unexpected movement!

Make sure parking brake is applied. Secure machine with wheel chocks.

Failure to comply will result in death or serious injury.

D0013A

Before performing any work on the machine, attach a maintenance in progress tag. This tag can be applied on the left-hand control lever, safety lever or cab door.



TULI12WEX2004AA 1



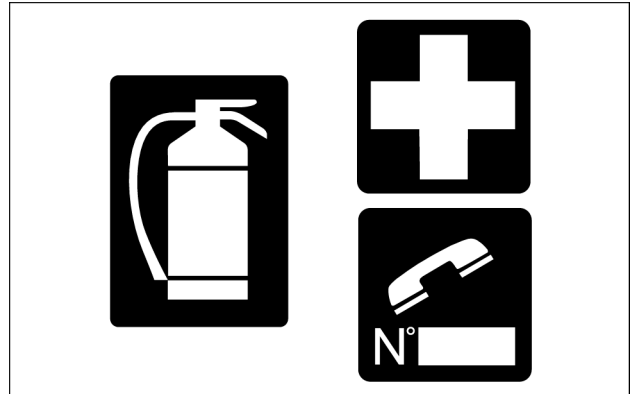
TULI12WEX2005AA 2



TULI12WEX2006AA 3

Emergency

Be prepared for emergencies. Always keep at disposal on the machine a first aid kit and a fire extinguisher. Make sure that the fire extinguisher is serviced in accordance with the manufacturer's instructions.



SMIL12WEX0174AA 4

Equipment

Wear close fitting clothing and safety equipment appropriate for the job:

- Safety helmet
- Safety shoes
- Heavy gloves
- Reflective clothing
- Wet weather clothing

If environment condition require it following personal safety equipment should be at hand:

- Respirators (or dust proof masks)
- Ear plugs or acoustic ears protections
- Goggles with lateral shield or masks for eyes protection

Do not wear rings, wristwatches, jewels, unbuttoned or flapping clothing such as ties, torn clothes, scarves, open jackets or shirts with open zips which could get caught into moving parts.



TULI12WEX2008AA 5

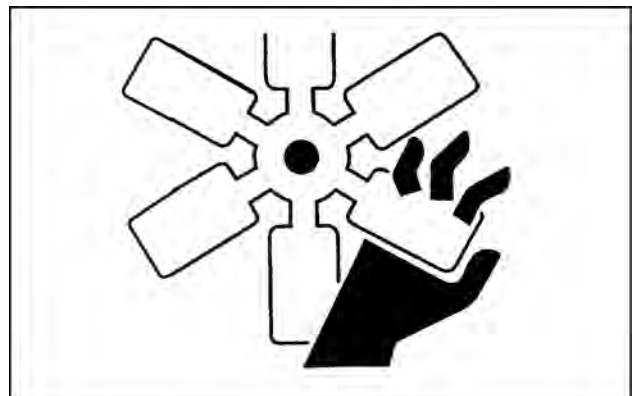
Engine - Radiator

Never leave the engine run in closed spaces without ventilation and not able to evacuate toxic exhaust gases. Keep the exhaust manifold and tube free from combustion materials.

Do not refuel with the engine running, especially if hot, as this increases fire hazard in case of fuel spillage.

Never attempt to check or adjust the belts when the engine is running.

Never lubricate the machine with the engine running.



TULI12WEX2009AA 6

Pay attention to rotary pieces and do not allow to anyone to approach to avoid becoming entangled.

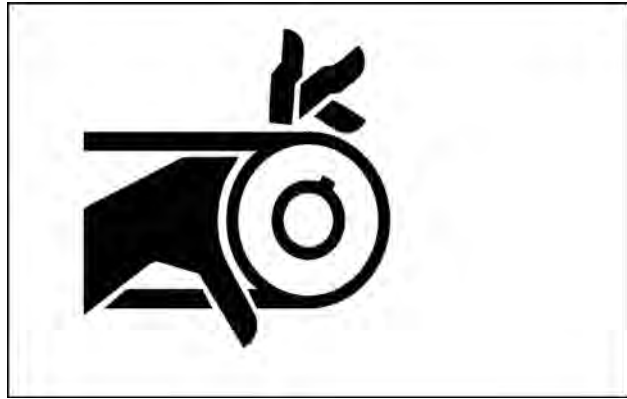
If hands, clothes or tools get caught in the fan blades or in the transmission belt, this can cause amputations, violent tears and generate condition of serious danger; for this reason avoid touching or to come close to all rotary or moving parts.

A violent jet of the coolant from the radiator can cause damages and scalds.

If you are to check the coolant level, you have to shut-off the engine previously and to let cool down the radiator and its pipes. Slowly unscrew the cap to release the inside pressure.

If necessary, remove the cap with hot engine, wear safety clothes and equipment, then loosen the cap slowly to relieve the pressure gradually.

When checking the fuel, oil and coolant levels, use exclusively explosion proof classified lamps. If this kind of lamps are not used fires or explosions may occur.



TULI12WEX2010AA 7



TULI12WEX2011AA 8

Hydraulic systems

Splashes of fluids under pressure can penetrate the skin causing serious injuries.

Avoid this hazard by relieving pressure before disconnecting hydraulic or other lines.

Relieve the residual pressure by moving the hydraulic control levers several times.

Tighten all connections before applying pressure.

To protect the eyes wear a facial shield or safety goggles.

Protect your hands and body from possible splashes of fluids under pressure.

Swallowing hydraulic oil is a severe health hazard.



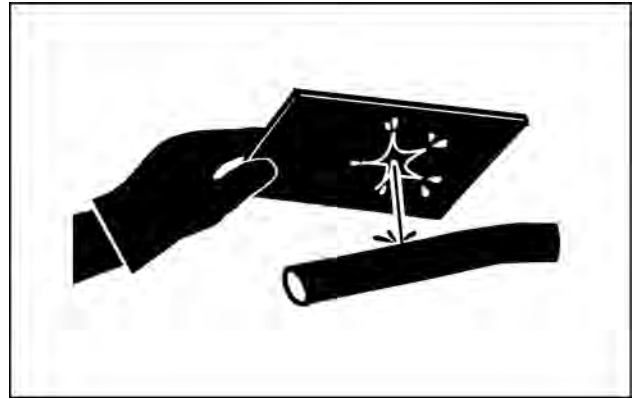
TULI12WEX2012AA 9

When hydraulic oil has been swallowed, avoid vomiting, but consult a doctor or go to a hospital.

If an accident occurs, see a doctor familiar with this type of injury immediately.

Any fluid penetrating the skin must be removed within few hours to avoid serious infections.

Flammable splashes may originate because of the heat near pipes with fluids under pressure, with the result of serious scalds for the persons hit. Do not weld or use torches near pipes containing fluids or other flammable materials.



TULI12WEX2013AA 10

Pipes under pressure can accidentally be pierced when the heat expands beyond the area immediately heated.

Arrange for fire resistant temporary shields to protect hoses or other components during welding.

Have any visible leakage repaired immediately.

Escaping oil pollutes the environment. Soak up any oil that has escaped with a proper binding agent. Sweep up binding agent and dispose of it separately from other waste.

Never search for leakages with the fingers, but use a piece of cardboard and always wear goggles.

Never repair damaged piping; always replace it. Replace hydraulic hoses immediately on detecting any damage or moist areas.

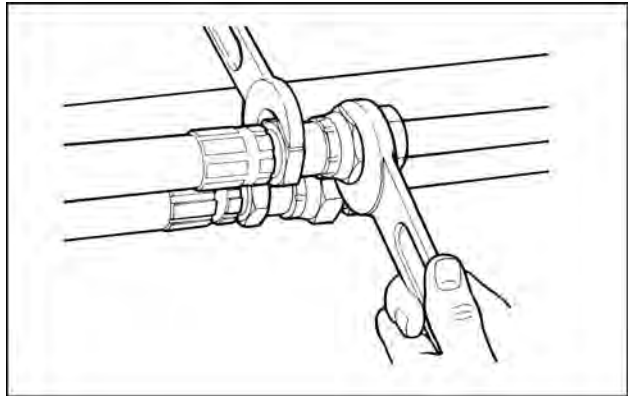
Always store hydraulic oil in the original containers.

Hoses and tubes

Always replace hoses and tubes if the cone end or the end connections on the hose are damaged.

When installing a new hose, loosely connect each end and make sure the hose takes up the correct position before tightening the connections. Clamps should be tightened sufficiently to hold the hose without crushing and to prevent chafing.

After hose replacement to a moving component, check that the hose does not foul by moving the component through the complete range of travel. Be sure any hose which has been installed is not kinked or twisted.



TULI12WEX2014AA 11

Hose connections which are damaged, dented, crushed or leaking, restrict oil flow and the productivity of the components being served. Connectors which show signs of movement from the original position have failed and will ultimately separate completely.

A hose with a frayed outer sheath will allow the water penetration. Concealed corrosion of the wire reinforcement will subsequently occur along the hose length with resultant hose failure.

Ballooning of the hose indicates an internal leakage due to structural failure. This condition rapidly deteriorates and total hose failure soon occurs.

Kinked, crushed, stretched or deformed hoses generally suffer internal structural damage which can result in oil restriction, a reduction in the speed of operation and ultimate hose failure.

Free-moving, unsupported hoses must never be allowed to touch each other or related working surfaces. This causes chafing which reduces hose life.

O-rings

Replace O-rings, seal rings and gaskets whenever they are disassembled.

Never mix new and old seals or O-rings, regardless of condition. Always lubricate new seal rings and O-rings with hydraulic oil before installation to relevant seats.

This will prevent the O-rings from rolling over and twisting during mounting which will jeopardize sealing.

Battery

Batteries give off explosive gases.

Never handle naked flames and unshielded light sources near batteries, never smoke.

To prevent any risk of explosion, observe the following instructions:

- When disconnecting the battery cables, always disconnect the negative (-) cable first.
- To reconnect the battery cables, always connect the negative (-) cable last.
- Never short-circuit the battery terminals with metal objects.
- Do not weld, grind or smoke near a battery.

Battery electrolyte causes severe burns. The battery contains sulphuric acid. Avoid any contact with the skin, eyes or clothing.

Antidote:

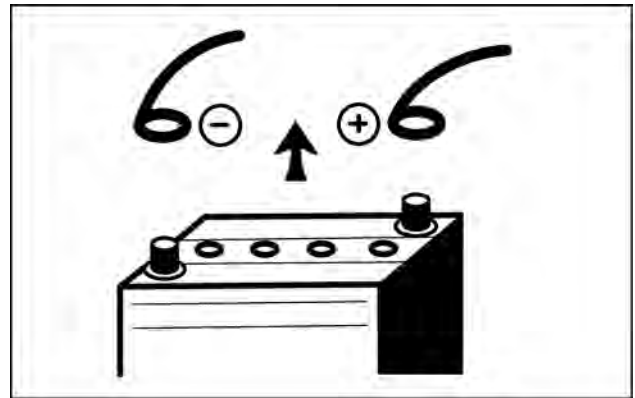
- EXTERNAL: Rinse well with water, removing any soiled clothing.
- INTERNAL: Avoid vomiting. Drink water to rinse your mouth. Consult a doctor.
- EYES: Rinse abundantly with water for **15 min** and consult a doctor.
- When the electrolyte of a battery is frozen, it can explode if you attempt to charge the battery or if you try to start the engine using a booster battery. Always keep the battery charged to prevent the electrolyte freezing.

Provide good ventilation when changing a battery or using a battery in an enclosed space. Always protect your eyes when working near a battery.

Never set tools down on the battery. They may induce a short circuit, causing irreparable damage to the battery and injuring persons.

Never wear metal necklaces, bracelets or watch straps when working on the battery. The metal parts may induce a short circuit resulting in burns.

Dispose of used batteries separately from other waste in the interests of environmental protection.



TULI12WEX2015AA 12



TULI12WEX2016AA 13



TULI12WEX2017AA 14

Flammable liquids

When handling flammable liquids:

- Do not smoke.
- Keep away from unshielded light sources and naked flames.

Fuels often have a low flash point and are readily ignited.

Never attempt to extinguish burning liquids with water.
Use:

- Dry powder
- With carbon dioxide
- With foam

Water used for extinguishing purposes would vaporize instantaneously on contact with burning substances and spread burning oil, for example, over a wide area. Water generates short circuits in the electrical system, possibly producing new hazards.

Stay away from open flames during refilling of hydraulic oil or fuel.

Fuel or oil splashes can cause slipping and therefore accidents; clean immediately and accurately the areas eventually smeared.

Always tighten the safety plugs of fuel tank and hydraulic oil tank firmly.

Never use fuel to clean the machine parts eventually smeared with oil or dust.

Use a non-flammable product for cleaning parts.

Always perform fuel or oil refilling in well aired and ventilated areas.

During refuelling hold the pistol firmly and keep it always in contact with the filler neck until the end of the refuelling, to avoid sparkles due to static electricity.

Do not overfill the tank but leave a space for fuel expansion.

Never refuel when the engine is running.

Take all the necessary safety measures when welding, grinding or when working near a naked flame.



TULI12WEX2016AA 15



TULI12WEX2018AA 16



TULI12WEX2019AA 17

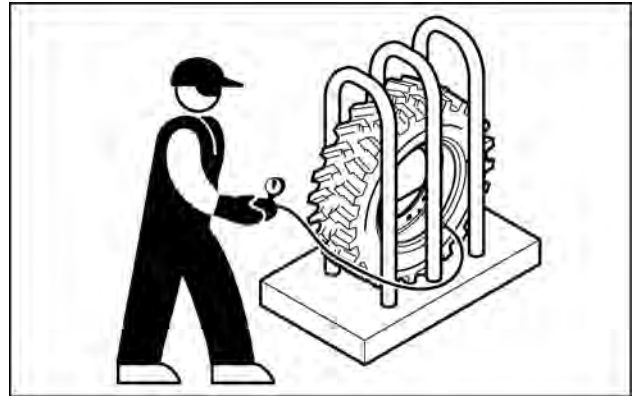
Tyres

Before inflating the tyres, always check the condition of rims and the outer condition of tyres to find out the presence of dents, cuts, tears or reinforcement plies or other faults. Before inflating a tyre, make sure that there are no nearby persons, then position yourself at tread side.

Make sure that the inflating pressure of tyres is the same prescribed by manufacturer and that the pressure of the right tyre corresponds to the pressure of the left tyre.

Never use reconditioned rims because possible welds, heat treatments or brazings not performed correctly can weaken the wheels and cause following damages or failures. Deflate the tyres before their disassembly.

Before taking out possible jammed objects from the rims, it is necessary to deflate the tyres. Inflate tyres by means of a pistol complete with extension and pressure switch of control.



TULI12WEX2020AA 18

Cleaning

Clean the exterior of all components before carrying out any form of repair. Dirt and dust can reduce the efficient working life of a component and lead to costly replacement.

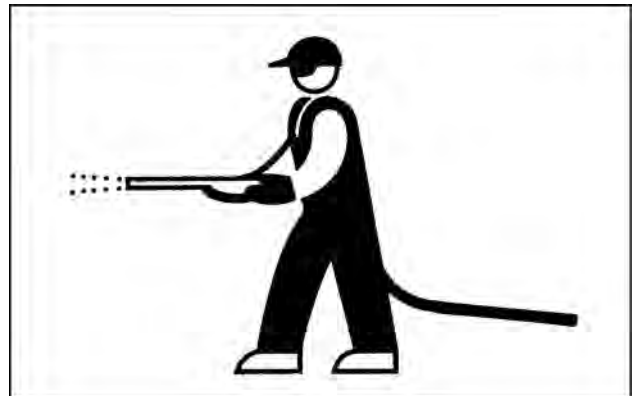
Solvents should be checked that they are suitable for the cleaning of components and also that they do not risk the personal safety of the user.

Dirt from oil or grease and scattered tools or faulty pieces are dangerous for persons, because they can generate slipping or falls.

For the machine cleaning, use a jet of warm water or steam under pressure and commercial detergents. Never use fuel, petroleum or solvents, because the first ones leave an oily layer that favours the sticking of dust, while solvents (even if weak) damage the paint and favour the formation of rust.

Never use water jets or steam on sensors, connectors or other electric components.

Prevent that the water jet penetrates inside the cab.



TULI12WEX2021AA 19

Waste disposal

Improperly disposing of waste can threaten the environment.

Each country has its own Regulations on this subject. It is therefore advisable to prepare suitable containers to collect and store momentarily all solid and fluid materials that must not be scattered in the environment to avoid pollution.

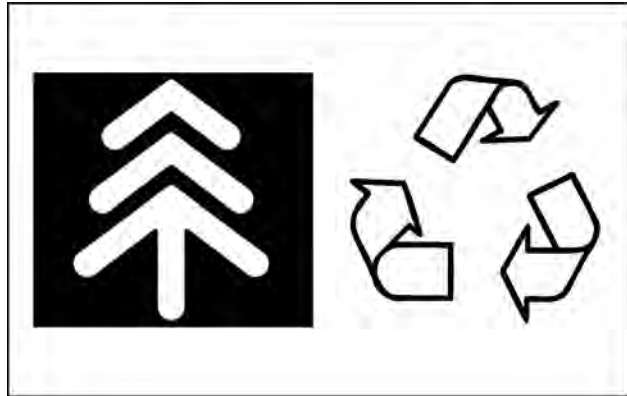
At preset intervals these products will be delivered to disposal stations legally recognized and present in this Country.

Hereunder are listed some products of the machine requiring disposal:

- Lubricating oil
- Brake system oil
- Coolant mixture, condensation rests and pure antifreeze
- Fuel
- Filter elements, oil and fuel filters
- Filter elements, air filters
- Battery

Also polluting rags, paper, sawdust and gloves must be disposed in compliance with the same procedures.

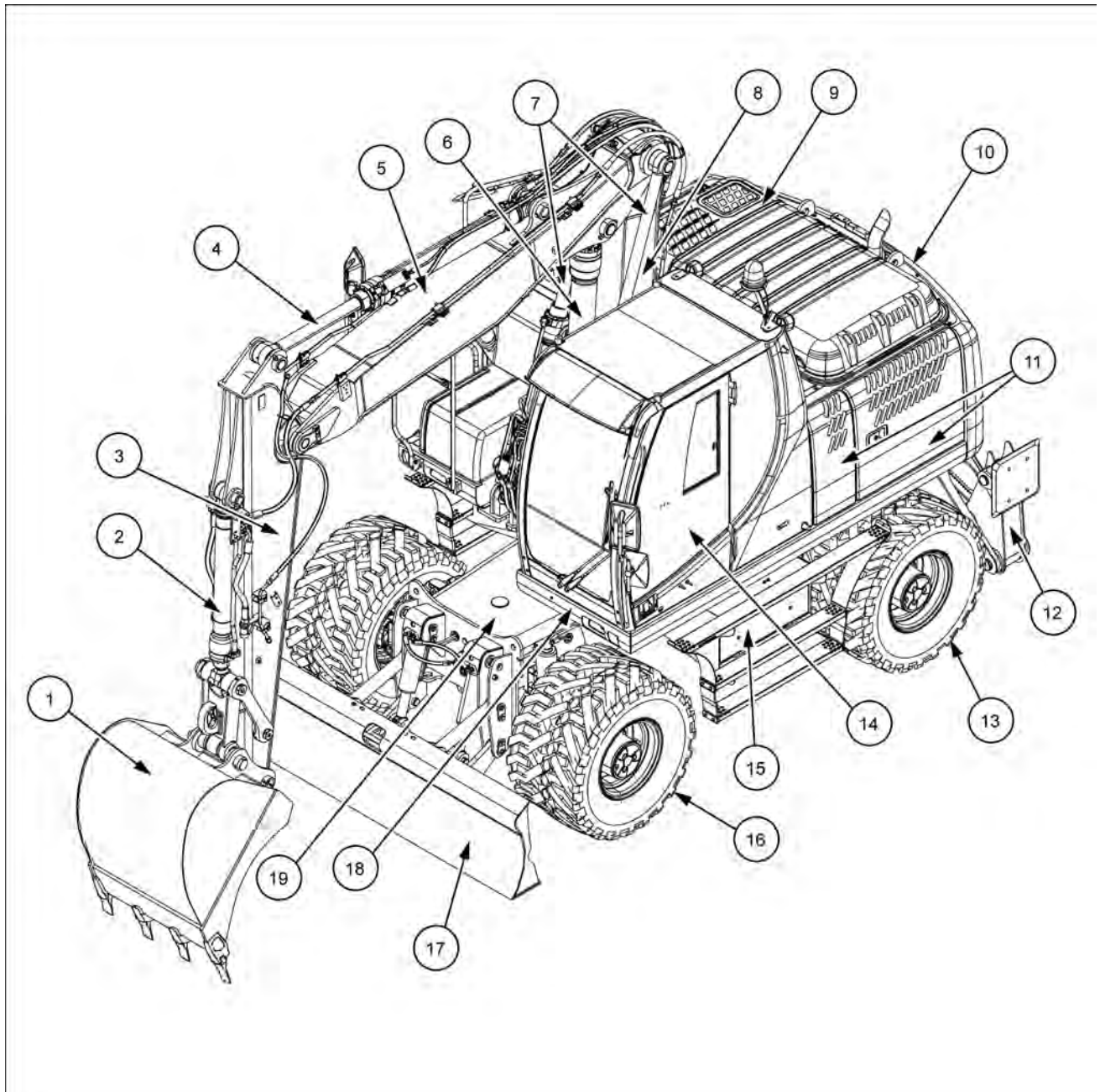
Do not use food or beverage containers that may mislead someone into drinking from them. Do not pour waste onto the ground, down a drain, or into any water source. Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service centre to recover and recycle used air conditioning refrigerants. Obtain information on the proper way to recycle or dispose of waste from your local environmental or recycling centre, or from your Dealer.



TULI12WEX2022AA 20

Product overview

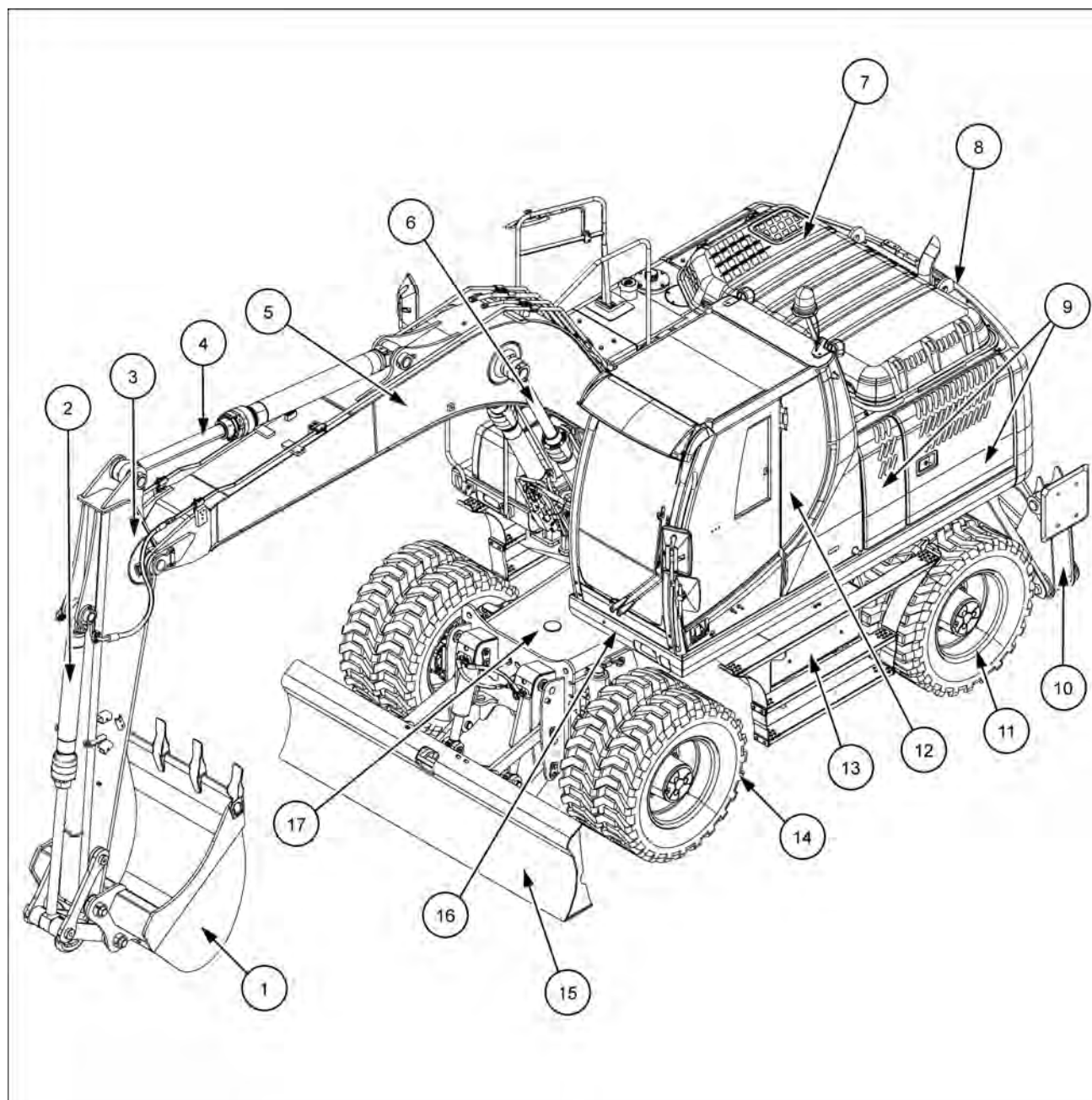
Main components (2-piece boom) - External view



SMIL12WEX0294GB 1

- | | |
|--------------------|--------------------------|
| 1. Bucket | 11. Side doors |
| 2. Bucket cylinder | 12. Rear stabilizers |
| 3. Dipper | 13. Rear axle wheels |
| 4. Dipper cylinder | 14. Cabin |
| 5. Second boom | 15. Stairs - storage box |
| 6. Cylinder | 16. Front axle wheels |
| 7. Boom cylinders | 17. Front blade |
| 8. First boom | 18. Upper structure |
| 9. Engine cover | 19. Undercarriage |
| 10. Counterweight | |

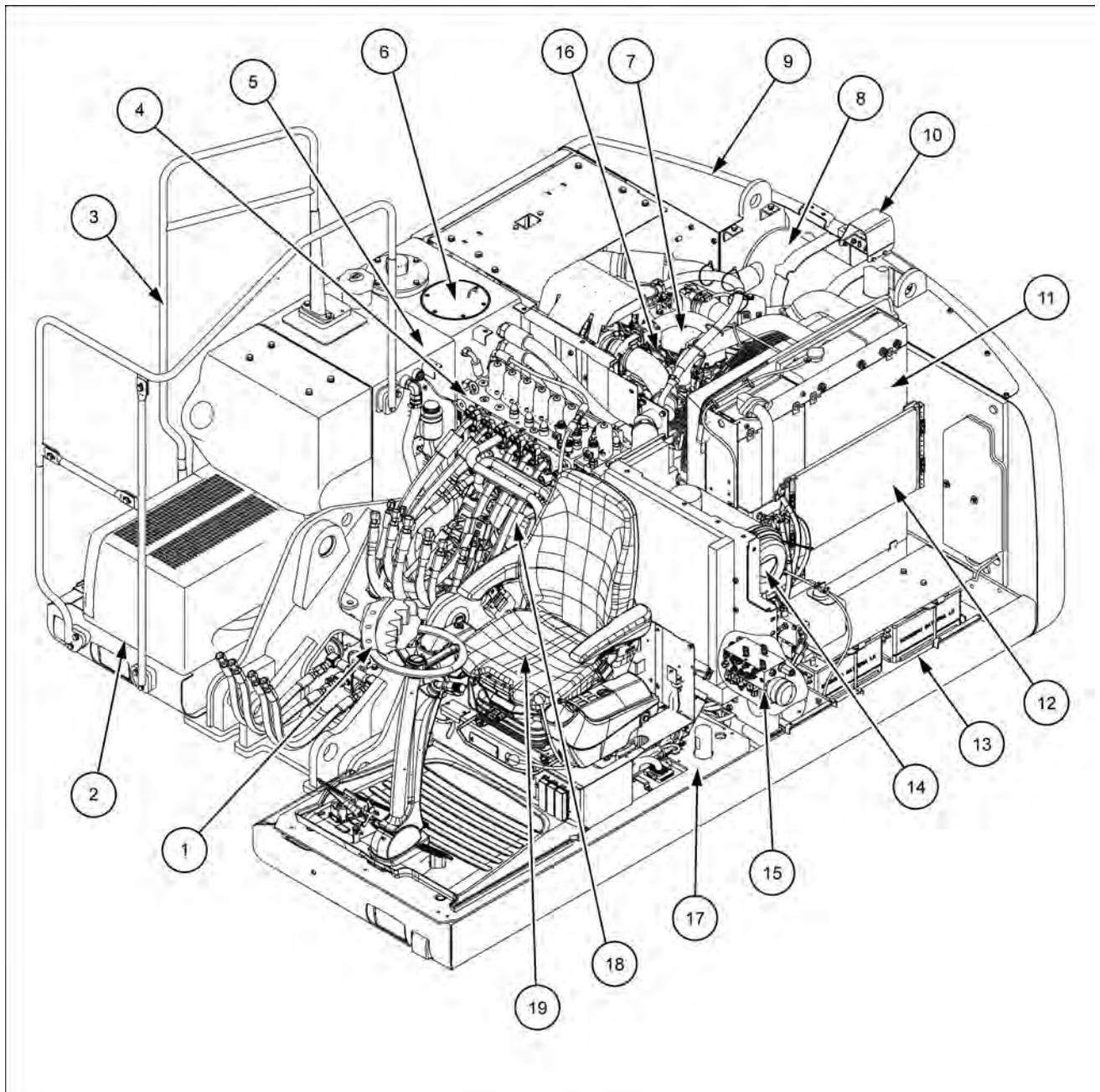
Main components (monoboomb) - External view



SMIL12WEX0295GB 2

- | | |
|--------------------|--------------------------|
| 1. Bucket | 10. Rear stabilizers |
| 2. Bucket cylinder | 11. Rear axle wheels |
| 3. Dipper | 12. Cabin |
| 4. Dipper cylinder | 13. Stairs - storage box |
| 5. Boom | 14. Front axle wheels |
| 6. Boom cylinder | 15. Front blade |
| 7. Engine cover | 16. Upper structure |
| 8. Counterweight | 17. Undercarriage |
| 9. Side doors | |

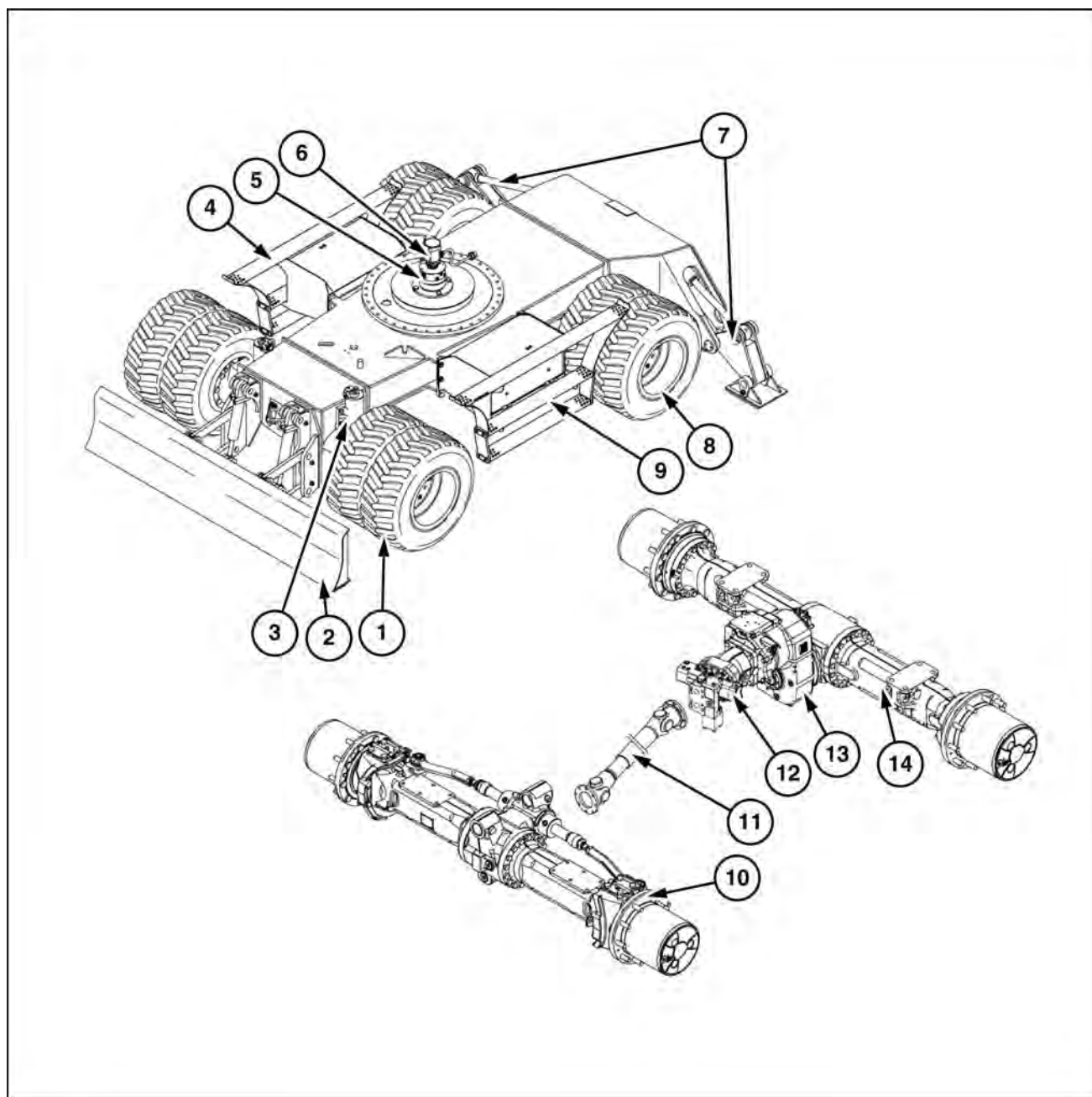
Upper structure main components - internal view



SMIL12WEX0175GB 3

- | | |
|-------------------------|---|
| 1. Slewing bearing | 11. Radiator assy |
| 2. Refueling pump box | 12. Condenser + dryer (conditioning air system) |
| 3. Protection handrails | 13. Batteries |
| 4. Main valve | 14. Air filter |
| 5. Fuel tank | 15. Pilot control assy |
| 6. Hydraulic oil tank | 16. Diesel engine |
| 7. Hydraulic pumps | 17. Cabin installation with ROPS (Rolling Over Protection System) |
| 8. Muffler | 18. Slewing gearbox |
| 9. Counterweight | 19. Operator's seat |
| 10. Rear view camera | |

Undercarriage main components



TULI12WEX2029GB 4

- | | |
|---------------------------------|-------------------------|
| 1. Front wheels | 8. Rear wheels |
| 2. Front blade | 9. Left stair |
| 3. Front axle locking cylinders | 10. Front steering axle |
| 4. Right stair | 11. Cardan shaft |
| 5. Swivel joint | 12. Travel motor |
| 6. Electric rotor | 13. Transmission |
| 7. Rear stabilizers | 14. Rear rigid axle |

Basic instructions

Machine safety

Before carrying out any service or repair work the machine must be secured as follows:

Park the machine on a level and firm surface.

Lower the working attachment to the ground.

Lower the blade and the stabilizers to the ground.

Lock the upper structure.

Engage the parking brake.

Let the engine run at low idle for approximately **5 min.**

Stop the engine.

Set the starter switch key to position "0" and pull it out.

Move both hydraulic control levers in all directions, to release possible residual pressure inside the hydraulic system.

Disconnect the pilot control.

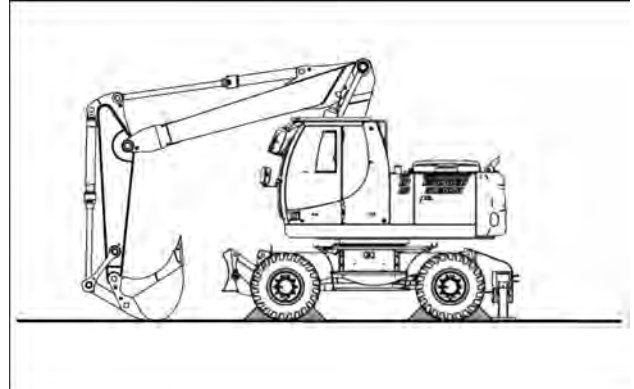
Secure the machine with wheel chocks as to prevent its rolling or overturning.

Adjust the seat

A seat poorly adjusted for operator or work requirements may quickly fatigue the operator leading to improper operations.

The seat should be adjusted whenever machine operator changes.

The operator should be able to press the pedals completely and to move the hydraulic control levers correctly, with his back resting against the seat back.



SMIL12WEX0021AA 1



TULI12WEX2024AA 2

On machines equipped with seat belt:

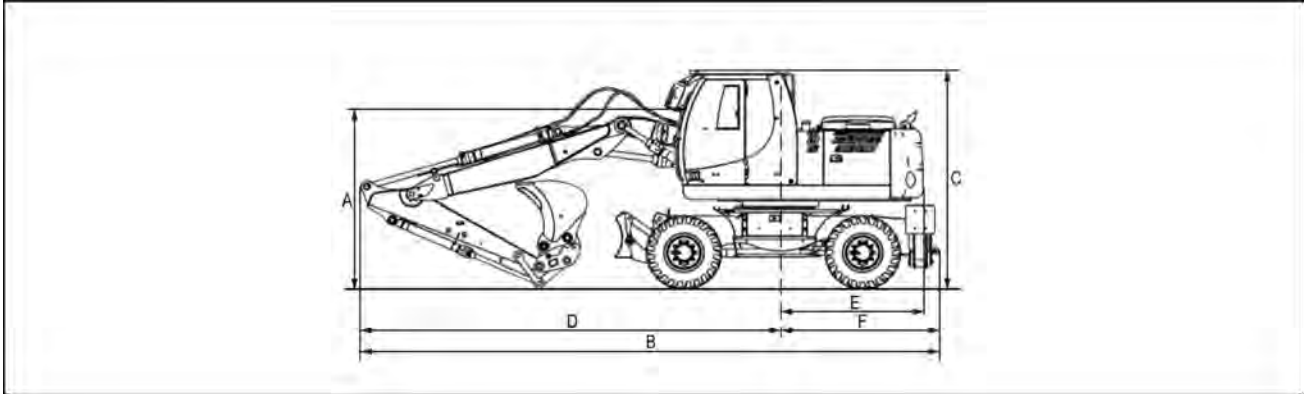
- Check the seat belt condition. In the event of damage or after an accident, have it replaced immediately.
- Fasten seat belt before starting to work.



TULI12WEX2025AA 3

Dimension

Triple articulation version - transport dimensions



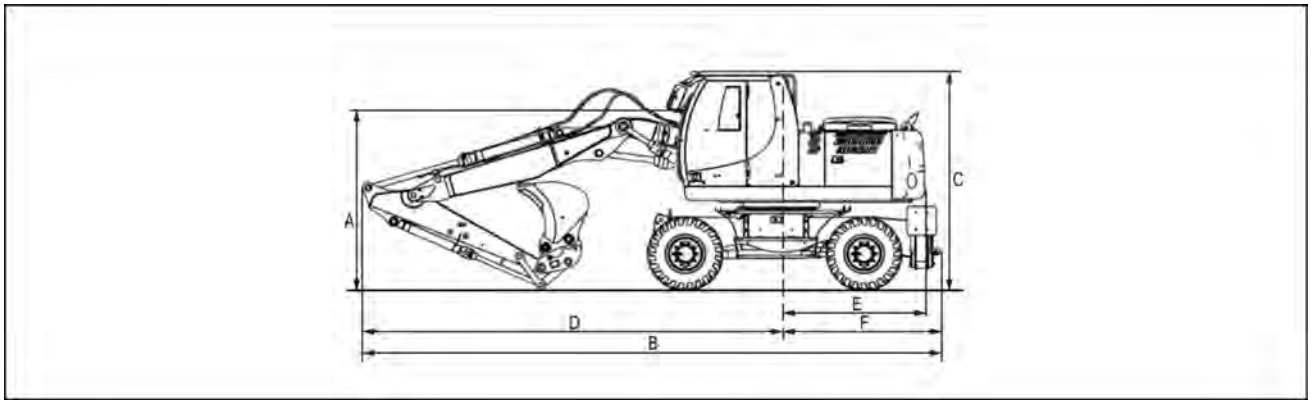
SMIL12WEX0081EA 1

Front blade and rear stabilizers			
Dipper	2100	2450	2950
A	2616 mm (103.0 in)	2707 mm (106.6 in)	3125 mm (123.0 in)
A1	2616 mm (103.0 in)	2707 mm (106.6 in)	3050 mm (120.1 in)
A2	2616 mm (103.0 in)	2707 mm (106.6 in)	3050 mm (120.1 in)
A3	2543 mm (100.1 in)	2623 mm (103.3 in)	2836 mm (111.7 in)
B	8238 mm (324.3 in)	8248 mm (324.7 in)	8199 mm (322.8 in)
B1	8238 mm (324.3 in)	8248 mm (324.7 in)	8217 mm (323.5 in)
B2	8238 mm (324.3 in)	8248 mm (324.7 in)	8217 mm (323.5 in)
B3	8215 mm (323.4 in)	8238 mm (324.3 in)	8245 mm (324.6 in)
C	3181 mm (125.2 in)		
D	5978 mm (235.4 in)	5988 mm (235.7 in)	5939 mm (233.8 in)
D1	5978 mm (235.4 in)	5988 mm (235.7 in)	5957 mm (234.5 in)
D2	5978 mm (235.4 in)	5988 mm (235.7 in)	5957 mm (234.5 in)
D3	5955 mm (234.4 in)	5978 mm (235.4 in)	5985 mm (235.6 in)
E	2041 mm (80.4 in)		
F	2260 mm (89.0 in)		

1. With bucket only
2. With quick coupler only
3. Without quick coupler and bucket

Maximum machine width: **2550 mm (100.4 in)**

Dimensions measured with MITAS **10.00-20** twin tyres.



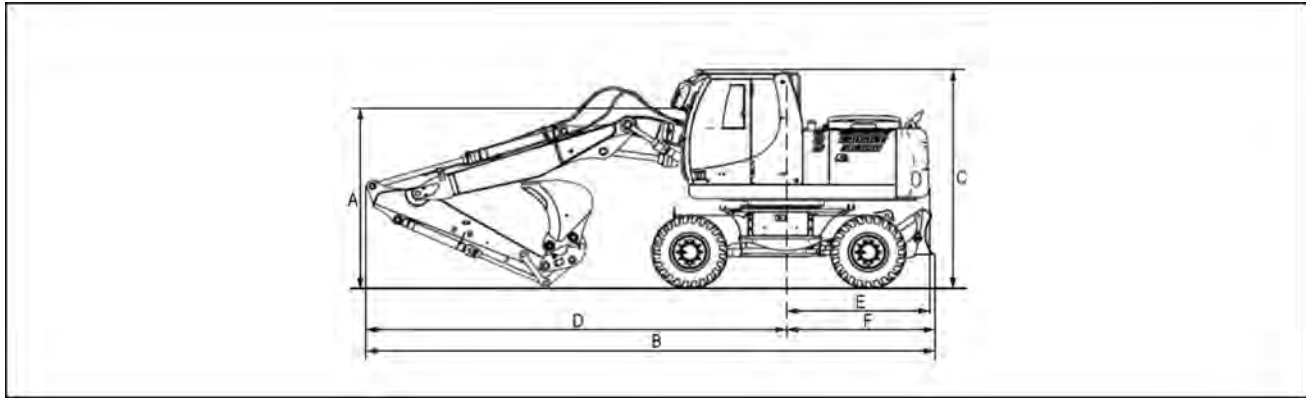
SMIL12WEX0082EA 2

Rear stabilizers			
Dipper	2100	2450	2950
A	2616 mm (103.0 in)	2707 mm (106.6 in)	3050 mm (120.1 in)
A1	2616 mm (103.0 in)	2707 mm (106.6 in)	3050 mm (120.1 in)
A2	2616 mm (103.0 in)	2707 mm (106.6 in)	3050 mm (120.1 in)
A3	2543 mm (100.1 in)	2623 mm (103.3 in)	2836 mm (111.7 in)
B	8238 mm (324.3 in)	8248 mm (324.7 in)	8217 mm (323.5 in)
B1	8238 mm (324.3 in)	8248 mm (324.7 in)	8217 mm (323.5 in)
B2	8238 mm (324.3 in)	8248 mm (324.7 in)	8217 mm (323.5 in)
B3	8215 mm (323.4 in)	8238 mm (324.3 in)	8245 mm (324.6 in)
C	3181 mm (125.2 in)		
D	5978 mm (235.4 in)	5988 mm (235.7 in)	5957 mm (234.5 in)
D1	5978 mm (235.4 in)	5988 mm (235.7 in)	5957 mm (234.5 in)
D2	5978 mm (235.4 in)	5988 mm (235.7 in)	5957 mm (234.5 in)
D3	5955 mm (234.4 in)	5978 mm (235.4 in)	5985 mm (235.6 in)
E	2041 mm (80.4 in)		
F	2260 mm (89.0 in)		

1. With bucket only
2. With quick coupler only
3. Without quick coupler and bucket

Maximum machine width: **2550 mm (100.4 in)**

Dimensions measured with MITAS **10.00-20** twin tyres.



SMIL12WEX0083EA 3

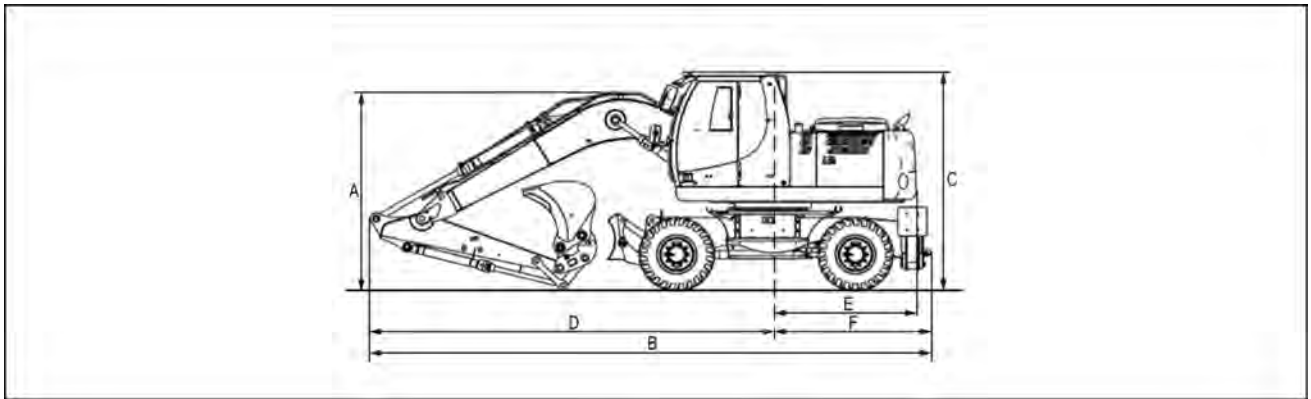
Rear blade			
Dipper	2100	2450	2950
A	2616 mm (103.0 in)	2707 mm (106.6 in)	3050 mm (120.1 in)
A1	2616 mm (103.0 in)	2707 mm (106.6 in)	3050 mm (120.1 in)
A2	2616 mm (103.0 in)	2707 mm (106.6 in)	3050 mm (120.1 in)
A3	2543 mm (100.1 in)	2623 mm (103.3 in)	2836 mm (111.7 in)
B	8072 mm (317.8 in)	8082 mm (318.2 in)	8051 mm (317.0 in)
B1	8072 mm (317.8 in)	8082 mm (318.2 in)	8051 mm (317.0 in)
B2	8072 mm (317.8 in)	8082 mm (318.2 in)	8051 mm (317.0 in)
B3	8049 mm (316.9 in)	8072 mm (317.8 in)	8079 mm (318.1 in)
C	3181 mm (125.2 in)		
D	5978 mm (235.4 in)	5988 mm (235.7 in)	5957 mm (234.5 in)
D1	5978 mm (235.4 in)	5988 mm (235.7 in)	5957 mm (234.5 in)
D2	5978 mm (235.4 in)	5988 mm (235.7 in)	5957 mm (234.5 in)
D3	5955 mm (234.4 in)	5978 mm (235.4 in)	5985 mm (235.6 in)
E	2041 mm (80.4 in)		
F	2094 mm (82.4 in)		

1. With bucket only
2. With quick coupler only
3. Without quick coupler and bucket

Maximum machine width: **2550 mm (100.4 in)**

Dimensions measured with MITAS **10.00-20** twin tyres.

Monoboam version - transport dimension



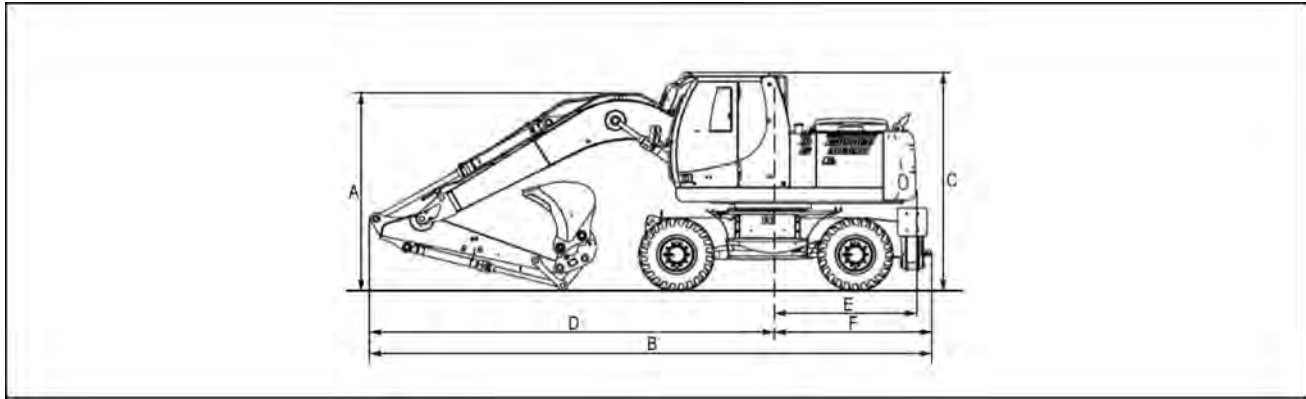
SMIL12WEX0084EA 4

Front blade and rear stabilizers			
Dipper	2100	2450	2950
A	2884 mm (113.5 in)	3115 mm (122.6 in)	3601 mm (141.8 in)
A1	2884 mm (113.5 in)	3102 mm (122.1 in)	3488 mm (137.3 in)
A2	2884 mm (113.5 in)	3048 mm (120.0 in)	3457 mm (136.1 in)
A3	2830 mm (111.4 in)	2899 mm (114.1 in)	3156 mm (124.3 in)
B	8012 mm (315.4 in)	8058 mm (317.2 in)	7967 mm (313.7 in)
B1	8012 mm (315.4 in)	8058 mm (317.2 in)	8015 mm (315.6 in)
B2	8012 mm (315.4 in)	8056 mm (317.2 in)	8023 mm (315.9 in)
B3	7984 mm (314.3 in)	8017 mm (315.6 in)	8075 mm (317.9 in)
C	3181 mm (125.2 in)		
D	5752 mm (226.5 in)	5798 mm (228.3 in)	5707 mm (224.7 in)
D1	5752 mm (226.5 in)	5798 mm (228.3 in)	5755 mm (226.6 in)
D2	5752 mm (226.5 in)	5796 mm (228.2 in)	5763 mm (226.9 in)
D3	5724 mm (225.4 in)	5757 mm (226.7 in)	5815 mm (228.9 in)
E	2041 mm (80.4 in)		
F	2260 mm (89.0 in)		

1. With bucket only
2. With quick coupler only
3. Without quick coupler and bucket

Maximum machine width: **2550 mm (100.4 in)**

Dimensions measured with MITAS **10.00-20** twin tyres.



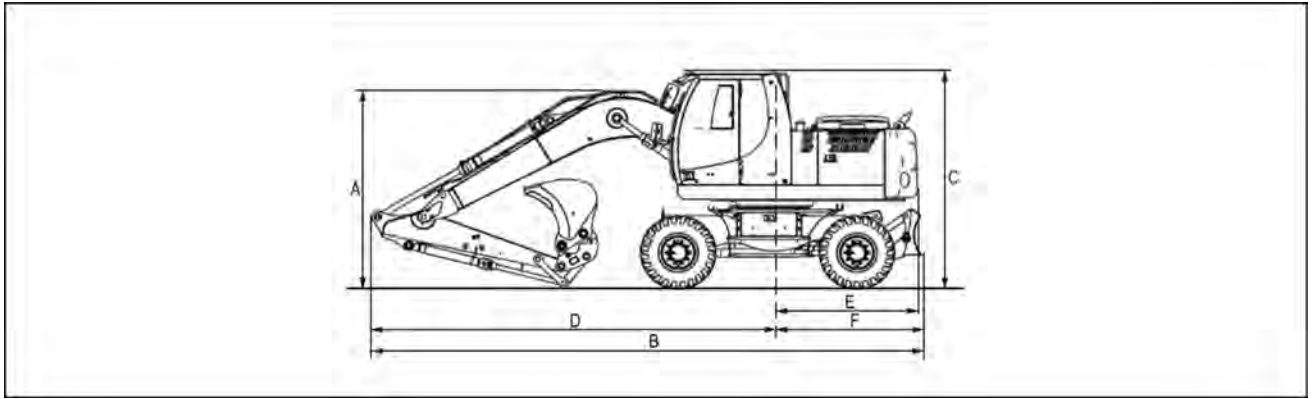
SMIL12WEX0085EA 5

Rear stabilizers			
Dipper	2100	2450	2950
A	2884 mm (113.5 in)	2972 mm (117.0 in)	3298 mm (129.8 in)
A1	2884 mm (113.5 in)	2972 mm (117.0 in)	3298 mm (129.8 in)
A2	2884 mm (113.5 in)	2972 mm (117.0 in)	3298 mm (129.8 in)
A3	2830 mm (111.4 in)	2899 mm (114.1 in)	3156 mm (124.3 in)
B	8012 mm (315.4 in)	8043 mm (316.7 in)	8061 mm (317.4 in)
B1	8012 mm (315.4 in)	8043 mm (316.7 in)	8061 mm (317.4 in)
B2	8012 mm (315.4 in)	8043 mm (316.7 in)	8061 mm (317.4 in)
B3	7984 mm (314.3 in)	8017 mm (315.6 in)	8075 mm (317.9 in)
C	3181 mm (125.2 in)		
D	5752 mm (226.5 in)	5783 mm (227.7 in)	5801 mm (228.4 in)
D1	5752 mm (226.5 in)	5783 mm (227.7 in)	5801 mm (228.4 in)
D2	5752 mm (226.5 in)	5783 mm (227.7 in)	5801 mm (228.4 in)
D3	5724 mm (225.4 in)	5757 mm (226.7 in)	5815 mm (228.9 in)
E	2041 mm (80.4 in)		
F	2260 mm (89.0 in)		

1. With bucket only
2. With quick coupler only
3. Without quick coupler and bucket

Maximum machine width: **2550 mm (100.4 in)**

Dimensions measured with MITAS **10.00-20** twin tyres.



SMIL12WEX0086EA 6

Rear blade			
Dipper	2100	2450	2950
A	2884 mm (113.5 in)	2972 mm (117.0 in)	3298 mm (129.8 in)
A1	2884 mm (113.5 in)	2972 mm (117.0 in)	3298 mm (129.8 in)
A2	2884 mm (113.5 in)	2972 mm (117.0 in)	3298 mm (129.8 in)
A3	2830 mm (111.4 in)	2899 mm (114.1 in)	3156 mm (124.3 in)
B	7846 mm (308.9 in)	7877 mm (310.1 in)	7895 mm (310.8 in)
B1	7846 mm (308.9 in)	7877 mm (310.1 in)	7895 mm (310.8 in)
B2	7846 mm (308.9 in)	7877 mm (310.1 in)	7895 mm (310.8 in)
B3	7818 mm (307.8 in)	7851 mm (309.1 in)	7909 mm (311.4 in)
C	3181 mm (125.2 in)		
D	5752 mm (226.5 in)	5783 mm (227.7 in)	5801 mm (228.4 in)
D1	5752 mm (226.5 in)	5783 mm (227.7 in)	5801 mm (228.4 in)
D2	5752 mm (226.5 in)	5783 mm (227.7 in)	5801 mm (228.4 in)
D3	5724 mm (225.4 in)	5757 mm (226.7 in)	5815 mm (228.9 in)
E	2041 mm (80.4 in)		
F	2094 mm (82.4 in)		

1. With bucket only
2. With quick coupler only
3. Without quick coupler and bucket

Maximum machine width: **2550 mm (100.4 in)**

Dimensions measured with MITAS **10.00-20** twin tyres.

Weight

Triple articulate version - weights

Dipper	Front blade and rear stabilizers	Rear stabilizers	Rear blade
2100 mm (82.7 in)	16300 kg (35935.3 lb)	15750 kg (34722.8 lb)	15450 kg (34061.4 lb)
2450 mm (96.5 in)	16350 kg (36045.6 lb)	15800 kg (34833.0 lb)	15550 kg (34281.9 lb)
2950 mm (116.1 in)	16400 kg (36155.8 lb)	15850 kg (34943.3 lb)	15600 kg (34392.1 lb)

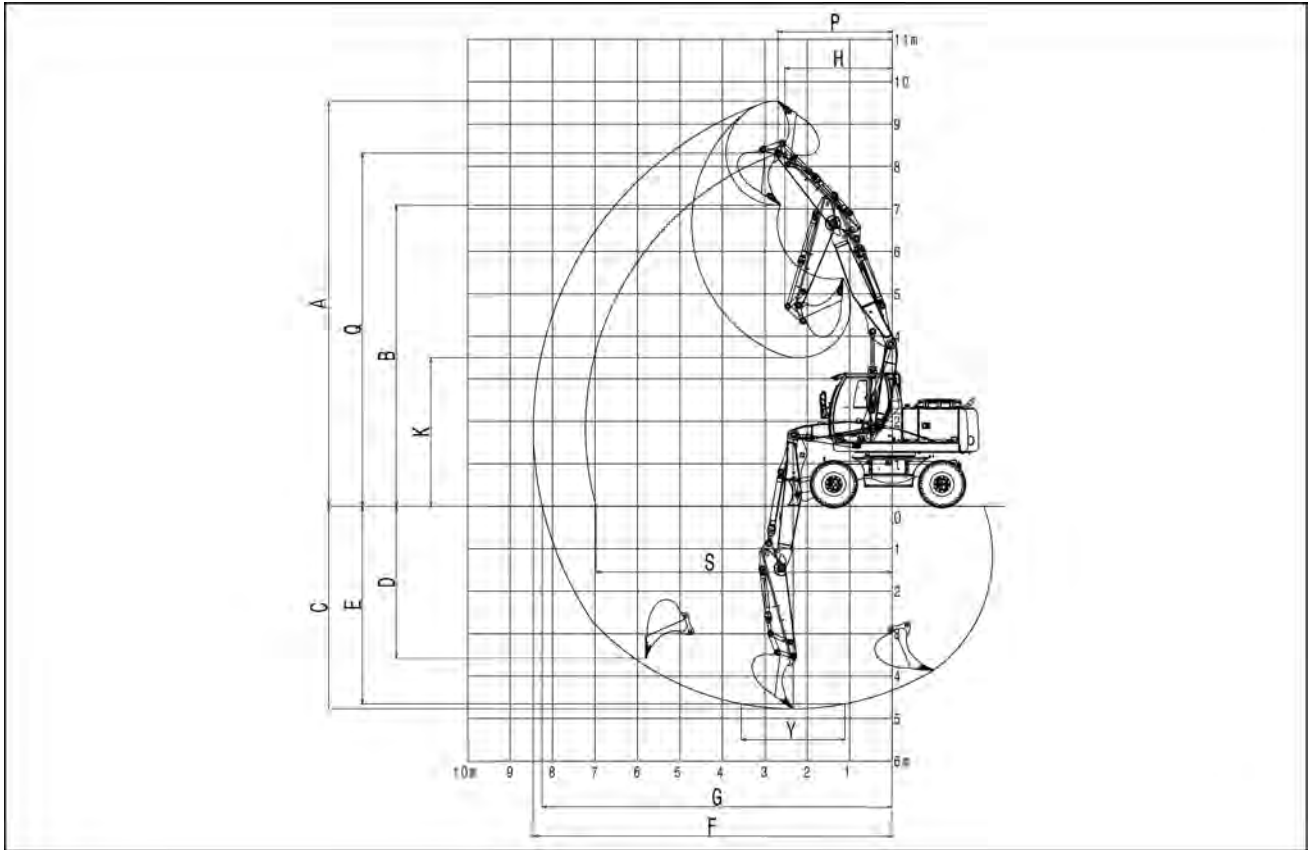
Monoboom version - weights

Dipper	Front blade and rear stabilizers	Rear stabilizers	Rear blade
2100 mm (82.7 in)	16000 kg (35274.0 lb)	15400 kg (33951.2 lb)	15100 kg (33289.8 lb)
2450 mm (96.5 in)	16050 kg (35384.2 lb)	15500 kg (34171.7 lb)	15200 kg (33510.3 lb)
2950 mm (116.1 in)	16100 kg (35494.4 lb)	15550 kg (34281.9 lb)	15250 kg (33620.5 lb)

General specification

Triple articulation version

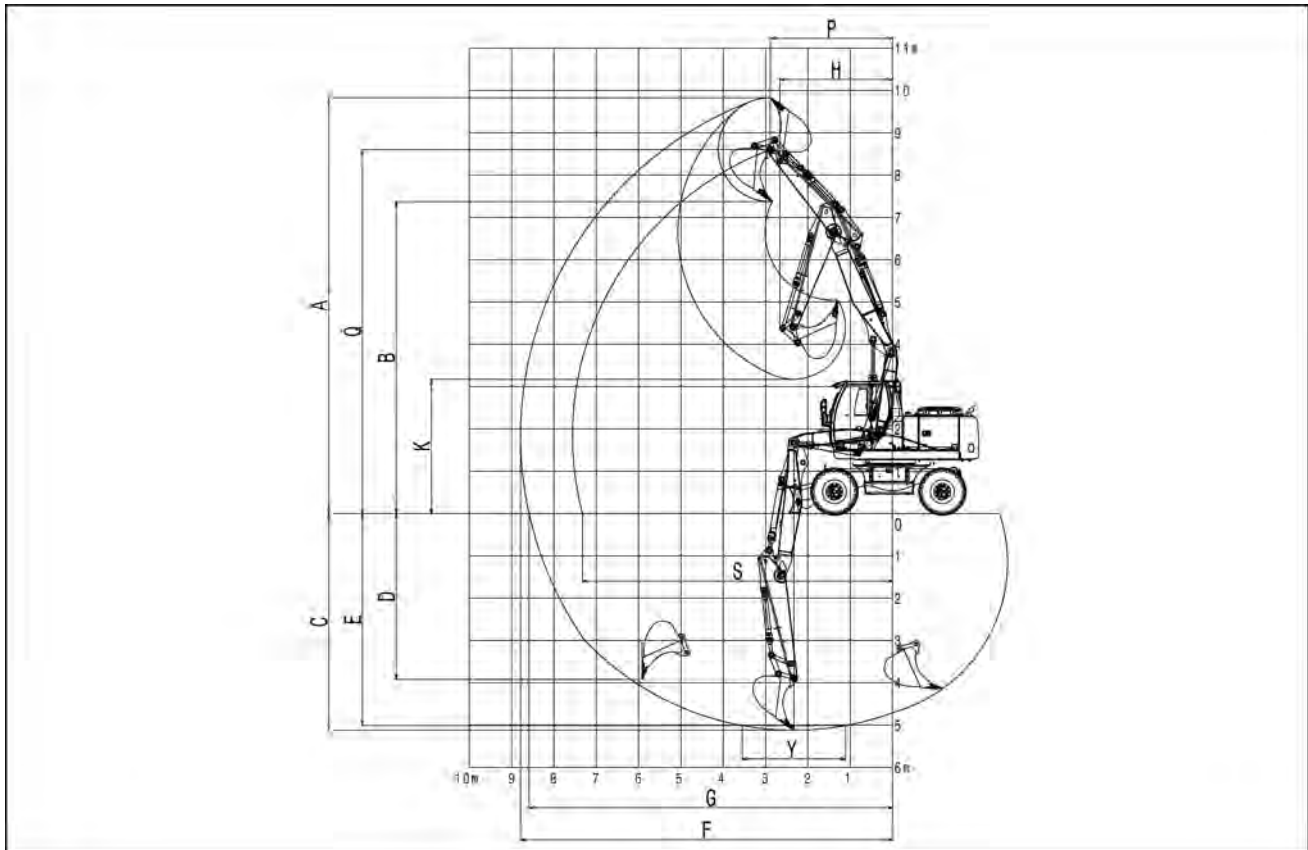
Dipper - 2100 mm (82.7 in)



SMIL12WEX0078FA 1

Bucket radius		1222 mm (48.1 in)
A	Maximum digging height	9540 mm (375.6 in)
B	Maximum loading height	7090 mm (279.1 in)
C	Maximum digging depth	4770 mm (187.8 in)
D	Maximum vertical wall digging depth	3580 mm (140.9 in)
E	Maximum digging depth of cut for level bottom	4650 mm (183.1 in)
F	Maximum digging reach	8450 mm (332.7 in)
G	Maximum digging reach at ground level	8240 mm (324.4 in)
H	Minimum swing radius	2530 mm (99.6 in)
K	Maximum loading height (dipper retracted)	3500 mm (137.8 in)
Y	Maximum digging depth bucking movement	2440 mm (96.1 in)
P	Maximum swing radius of bucking connection	2690 mm (105.9 in)
Q	Maximum height of bucking connection	8320 mm (327.6 in)
S	Maximum reach at ground level of bucking connection	6970 mm (274.4 in)

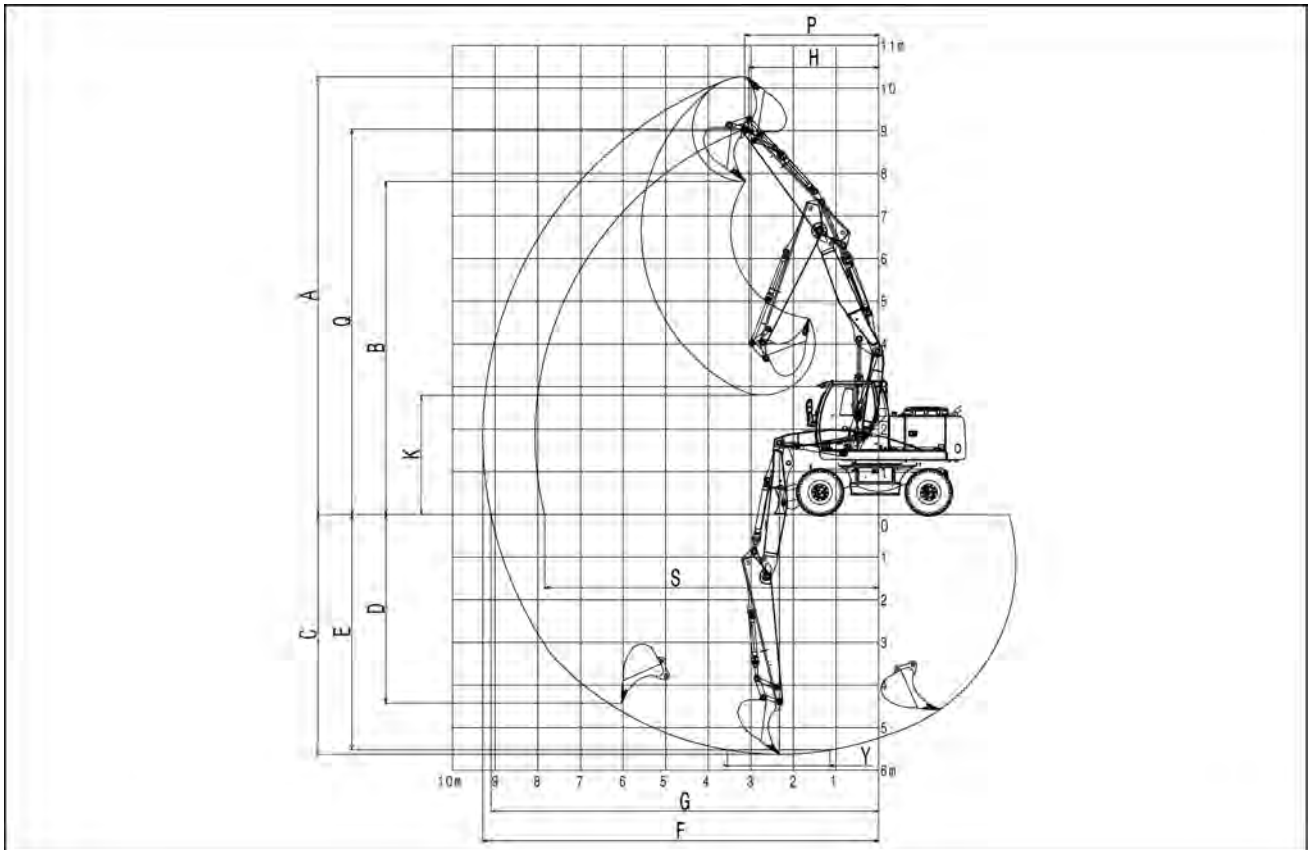
Dipper - 2450 mm (96.5 in)



SMIL12WEX0079FA 2

Bucket radius		1222 mm (48.1 in)
A	Maximum digging height	9830 mm (387.0 in)
B	Maximum loading height	7370 mm (290.2 in)
C	Maximum digging depth	5120 mm (201.6 in)
D	Maximum vertical wall digging depth	3920 mm (154.3 in)
E	Maximum digging depth of cut for level bottom	5000 mm (196.9 in)
F	Maximum digging reach	8790 mm (346.1 in)
G	Maximum digging reach at ground level	8590 mm (338.2 in)
H	Minimum swing radius	2660 mm (104.7 in)
K	Maximum loading height (dipper retracted)	3180 mm (125.2 in)
Y	Maximum digging depth bucking movement	2440 mm (96.1 in)
P	Maximum swing radius of bucking connection	2890 mm (113.8 in)
Q	Maximum height of bucking connection	8600 mm (338.6 in)
S	Maximum reach at ground level of bucking connection	7330 mm (288.6 in)

Dipper - 2950 mm (116.1 in)

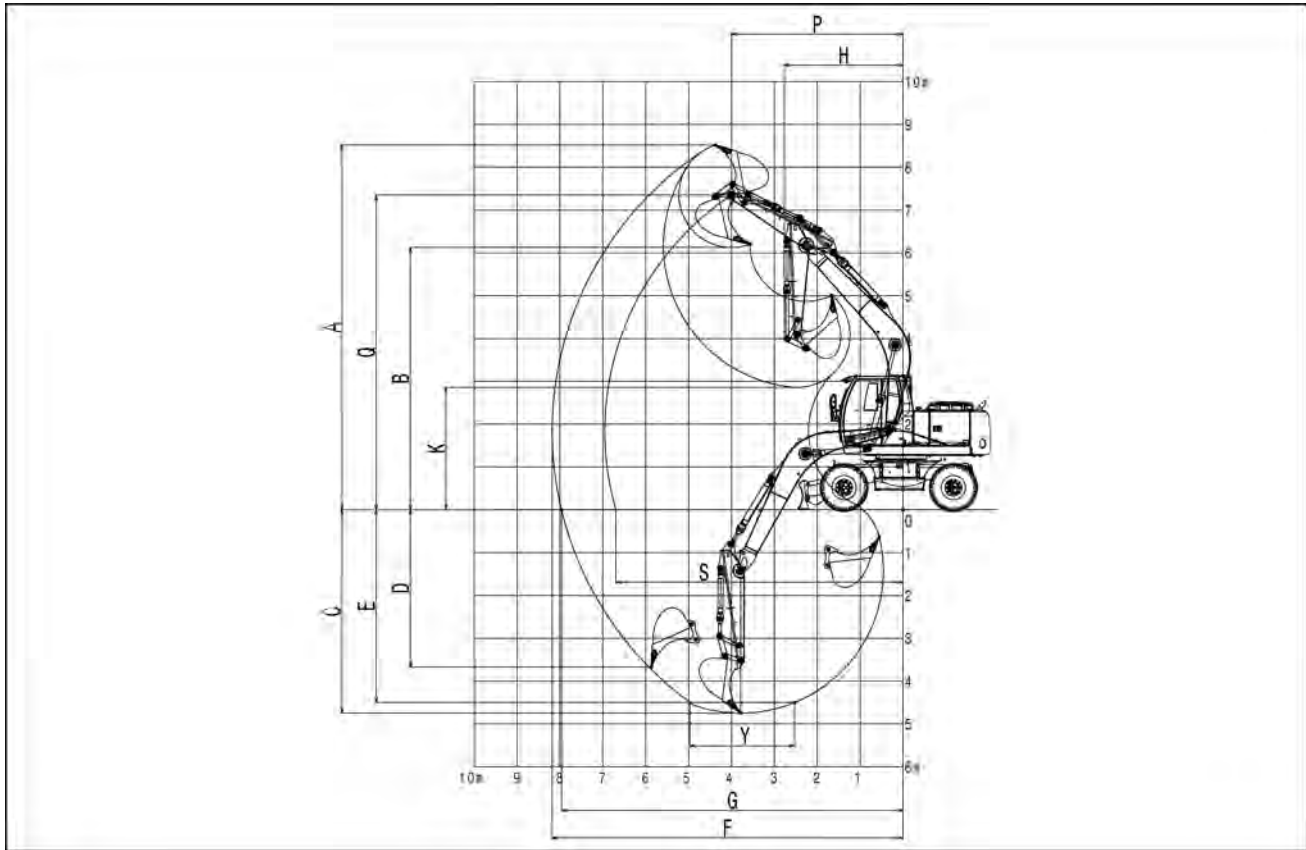


SMIL12WEX0080FA 3

Bucket radius		1222 mm (48.1 in)
A	Maximum digging height	10260 mm (403.9 in)
B	Maximum loading height	7810 mm (307.5 in)
C	Maximum digging depth	5620 mm (221.3 in)
D	Maximum vertical wall digging depth	4420 mm (174.0 in)
E	Maximum digging depth of cut for level bottom	5520 mm (217.3 in)
F	Maximum digging reach	9290 mm (365.7 in)
G	Maximum digging reach at ground level	9100 mm (358.3 in)
H	Minimum swing radius	3050 mm (120.1 in)
K	Maximum loading height (dipper retracted)	2800 mm (110.2 in)
Y	Maximum digging depth bucking movement	2440 mm (96.1 in)
P	Maximum swing radius of bucking connection	3140 mm (123.6 in)
Q	Maximum height of bucking connection	9040 mm (355.9 in)
S	Maximum reach at ground level of bucking connection	7840 mm (308.7 in)

Monoboam version

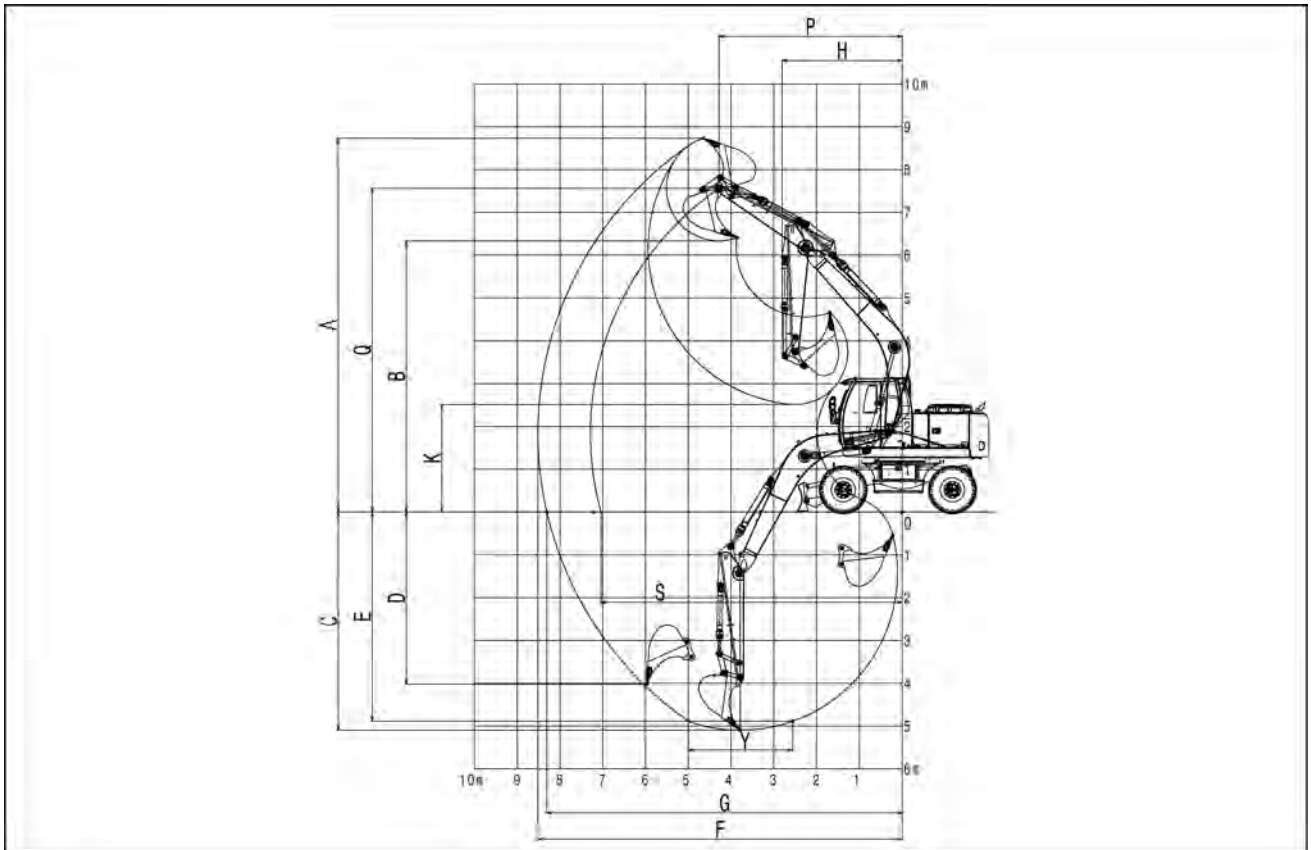
Dipper - 2100 mm (82.7 in)



SMIL12WEX0037FA 4

Bucket radius		1222 mm (48.1 in)
A	Maximum digging height	8520 mm (335.4 in)
B	Maximum loading height	6130 mm (241.3 in)
C	Maximum digging depth	4750 mm (187.0 in)
D	Maximum vertical wall digging depth	3670 mm (144.5 in)
E	Maximum digging depth of cut for level bottom	4500 mm (177.2 in)
F	Maximum digging reach	8180 mm (322.0 in)
G	Maximum digging reach at ground level	7960 mm (313.4 in)
H	Minimum swing radius	2770 mm (109.1 in)
K	Maximum loading height (dipper retracted)	2860 mm (112.6 in)
Y	Maximum digging depth bucking movement	2440 mm (96.1 in)
P	Maximum swing radius of bucking connection	4000 mm (157.5 in)
Q	Maximum height of bucking connection	7350 mm (289.4 in)
S	Maximum reach at ground level of bucking connection	6690 mm (263.4 in)

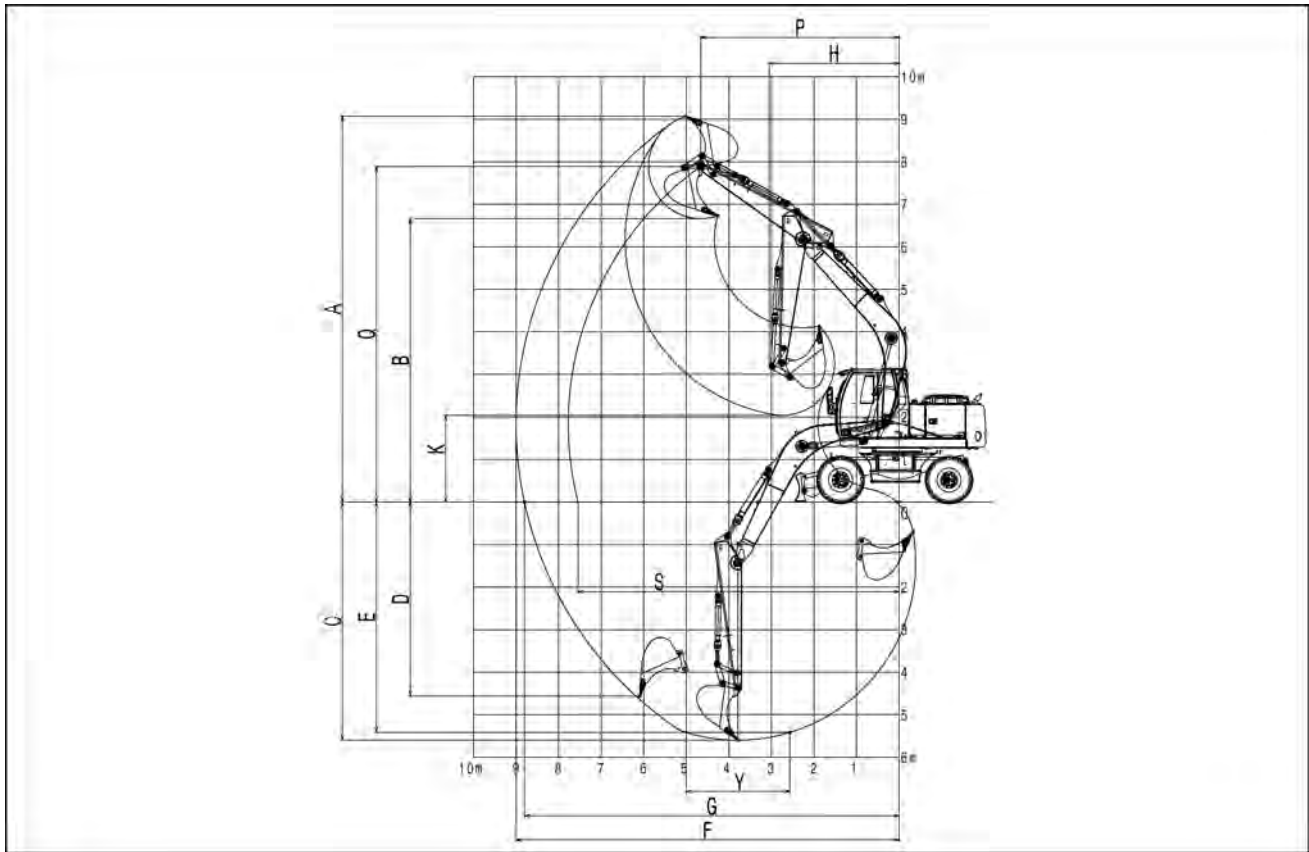
Dipper - 2450 mm (96.5 in)



SMIL12WEX0038FA 5

Bucket radius		1222 mm (48.1 in)
A	Maximum digging height	8730 mm (343.7 in)
B	Maximum loading height	6330 mm (249.2 in)
C	Maximum digging depth	5100 mm (200.8 in)
D	Maximum vertical wall digging depth	4020 mm (158.3 in)
E	Maximum digging depth of cut for level bottom	4890 mm (192.5 in)
F	Maximum digging reach	8510 mm (335.0 in)
G	Maximum digging reach at ground level	8300 mm (326.8 in)
H	Minimum swing radius	2800 mm (110.2 in)
K	Maximum loading height (dipper retracted)	2510 mm (98.8 in)
Y	Maximum digging depth bucketing movement	2440 mm (96.1 in)
P	Maximum swing radius of bucket connection	4280 mm (168.5 in)
Q	Maximum height of bucket connection	7560 mm (297.6 in)
S	Maximum reach at ground level of bucket connection	7040 mm (277.2 in)

Dipper - 2950 mm (116.1 in)

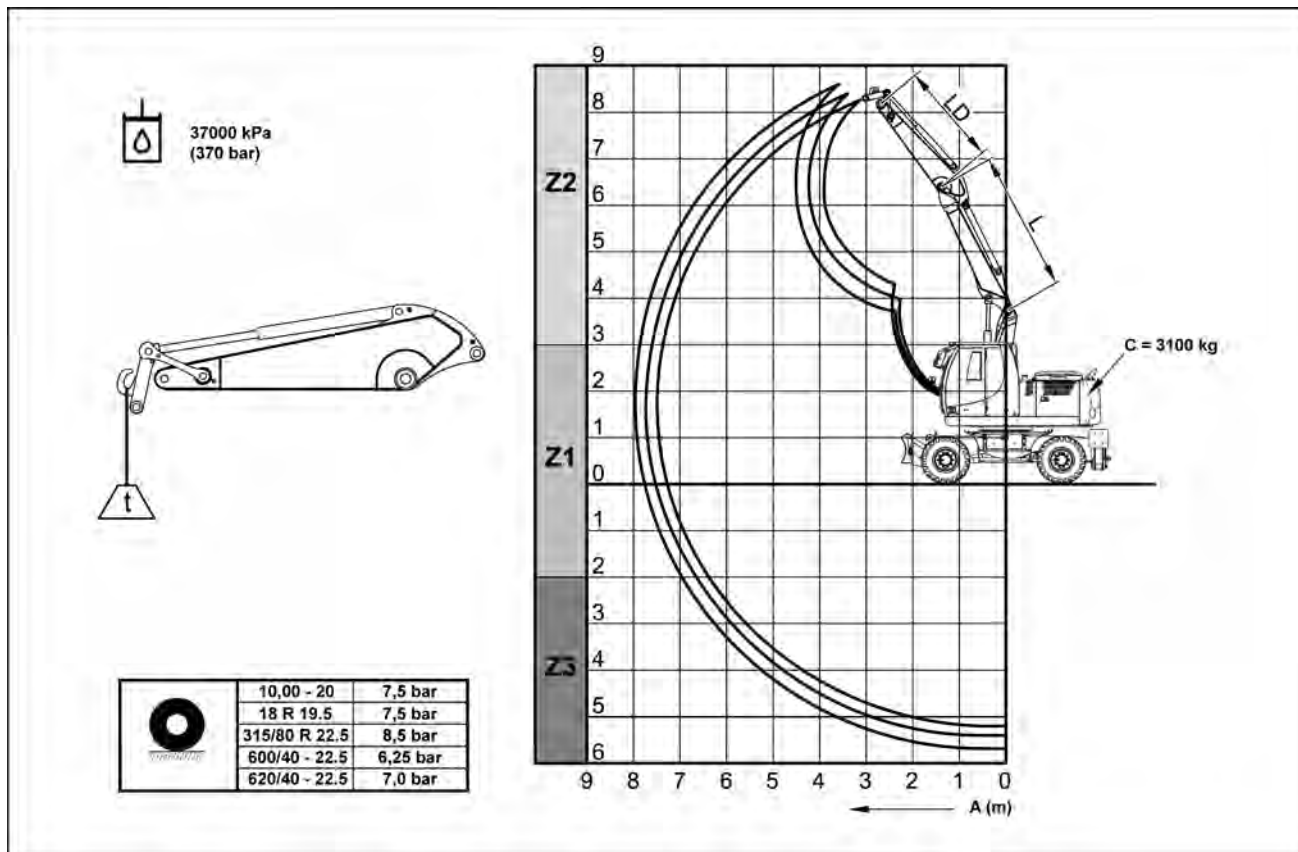


SMIL12WEX0039FA 6

Bucket radius		1222 mm (48.1 in)
A	Maximum digging height	9070 mm (357.1 in)
B	Maximum loading height	6660 mm (262.2 in)
C	Maximum digging depth	5600 mm (220.5 in)
D	Maximum vertical wall digging depth	4560 mm (179.5 in)
E	Maximum digging depth of cut for level bottom	5420 mm (213.4 in)
F	Maximum digging reach	9000 mm (354.3 in)
G	Maximum digging reach at ground level	8800 mm (346.5 in)
H	Minimum swing radius	3050 mm (120.1 in)
K	Maximum loading height (dipper retracted)	2040 mm (80.3 in)
Y	Maximum digging depth bucking movement	2440 mm (96.1 in)
P	Maximum swing radius of bucking connection	4660 mm (183.5 in)
Q	Maximum height of bucking connection	7900 mm (311.0 in)
S	Maximum reach at ground level of bucking connection	7540 mm (296.9 in)

Capacities

Triple articulation version



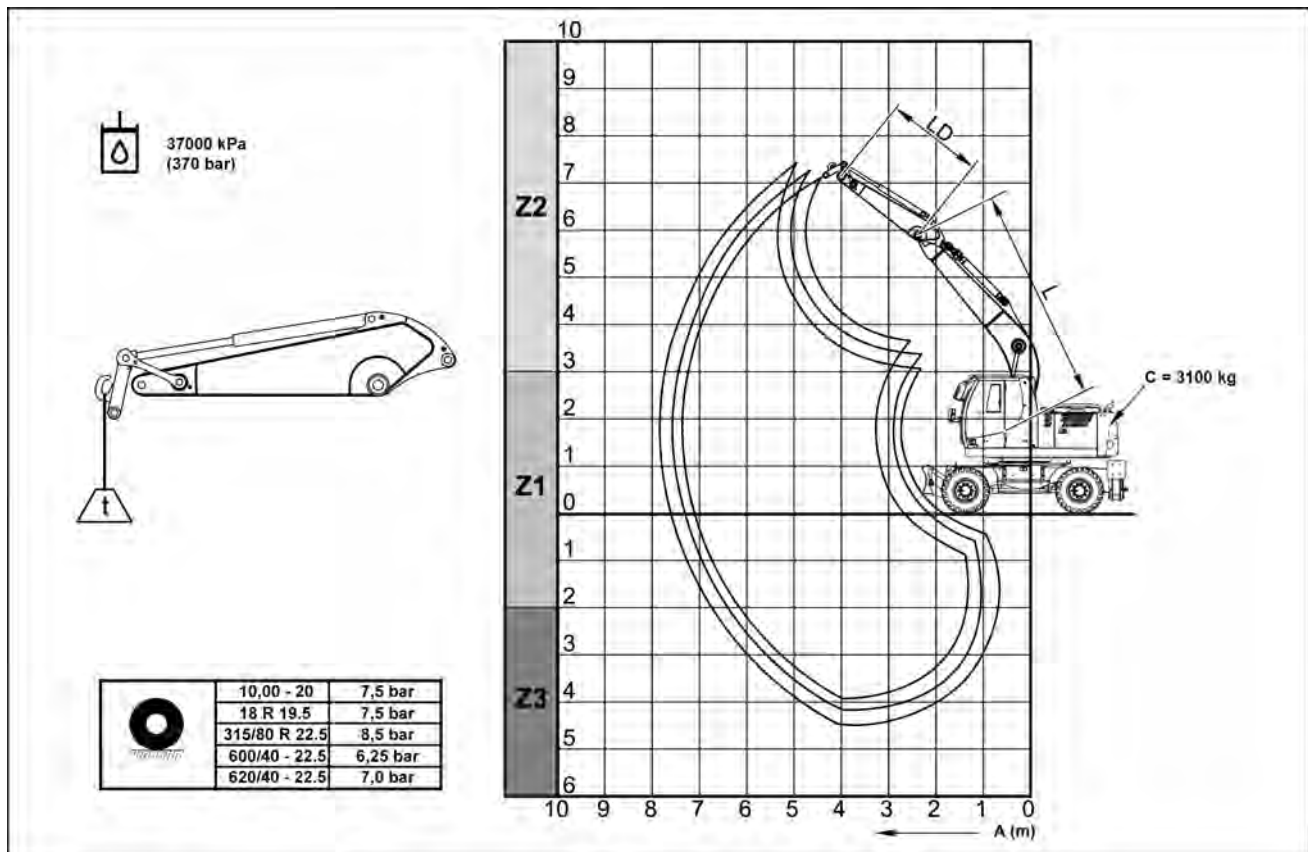
N00949 1

A (m)		4.5	6.0	7.5	4.5	6.0	7.5	4.5	6.0	7.5	4.5	6.0	7.5
LD = 2.1 m	Z2	3.7	2.4		4.1	2.7		4.2	3.3		4.2	3.4	
	Z1	3.3	2.1	1.6	3.8	2.4	1.8	4.6	3.0	2.2	5.4	3.9	2.8
	Z3	3.2	2.1		3.7	2.4		4.5	3.0		5.6	3.9	
LD = 2.45 m	Z2	3.1	2.5	1.6	3.1	2.8	1.8	3.1	3.2	2.2	3.1	2.5	2.3
	Z1	3.3	2.1	1.5	3.8	2.4	1.8	4.6	2.9	2.1	5.2	3.9	2.8
	Z3	3.2	2.1		3.7	2.4		4.5	2.9		6.1	3.9	
LD = 2.95 m	Z2	3.2	2.5	1.7	3.2	2.8	1.9	3.2	2.9	2.3	3.2	2.9	2.5
	Z1	3.4	2.1	1.5	3.9	2.4	1.7	4.7	3.0	2.1	4.8	3.8	2.8
	Z3	3.1	2.1		3.6	2.4		4.4	2.9		5.3	3.9	

NOTE: Value in the table are in ton.

NOTE: 1 m (3.3 ft)

Monoboam version



N00950 2

A (m)		4.5	6.0	7.5	4.5	6.0	7.5	4.5	6.0	7.5	4.5	6.0	7.5
LD = 2.1 m	Z2	3.5	2.3		3.6	2.6		3.6	3.2		3.6	3.7	
	Z1	3.1	2.1		3.5	2.4		4.3	2.9		5.1	3.9	
	Z3	3.1	2.1		3.5	2.4		4.3	2.9		4.7	3.9	
LD = 2.45 m	Z2	3.5	2.3		3.6	2.6		3.6	2.6		3.6	2.6	
	Z1	3.0	2.1	1.6	3.5	2.4	1.8	4.3	2.9	2.2	4.7	3.8	2.3
	Z3	3.0	2.1		3.5	2.4		3.5	2.9		3.5	3.8	
LD = 2.95 m	Z2	3.6	2.0	1.6	3.6	2.0	1.9	3.6	2.0	2.2	3.6	2.0	2.4
	Z1	2.9	2.0	1.5	3.4	2.3	1.7	4.2	2.8	2.1	4.3	3.6	2.5
	Z3	2.9	2.0		3.4	2.3		4.2	2.8		4.4	3.8	

NOTE: Value in the table are in ton.

NOTE: 1 m (3.3 ft)

General specification

Hydraulic system

The hydraulic system is supplied by 3 pumps, a main double pump, an independent pump for swinging and double gear pump for steering and brake, pilot hydraulic system and grab rotation. The engine and the pumps are monitored and controlled by the "Engine Speed Control" selector located in cab.

Circuit pressure

Attachment (2-piece boom)	340 bar (4930.0 psi)
Travel	370 bar (5365 psi)
Power boost	370 bar (5365 psi)
Rotation	360 bar (5220.0 psi)
Pilot system	45 bar (653 psi)

Pumps

Variable-flow rate twin pump

Model	A8V080 LA1H2/63R1
Power	79 kW (107.4 Hp)
Engine speed	2000 RPM
Maximum flow rate at 1750 RPM (heavy)	2 x 140 l/min (37.0 US gpm)
Pump volume	2 x 80 cm³ (4.9 in³)

Rotation pump

Model	A4VG40 DE4D T1/32R
Service pressure	360 - 10 bar (5220.0 - 145.0 psi)
Engine speed	1800 RPM
Auxiliary pump volume	8.6 cm³ (0.52 in³)
Main pump volume	40 cm³ (2.44 in³)
Maximum flow rate at 1750 RPM (heavy)	70 l/min (18.5 US gpm)

Gear pump

Model	WSP20.11,2-03S1-L
Pump P1 displacement	11.891 cm³/rev (0.73 in³/rev)
Pump P2 displacement	11.891 cm³/rev (0.73 in³/rev)
Max continuous pressure (P1)	210 bar (3045 psi)
Max intermittent pressure (P2)	230 bar (3335 psi)
Min rotation speed (P1)	800 RPM
Max rotation speed (P1)	2300 RPM

Cylinder

Cylinder (Ø tube assy. x Ø rod assy. x stroke)

Monoboom lifting cylinder	110 mm (4.3 in) x 70 mm (2.8 in) x 1028 mm (40.5 in) ± 1.8 mm (0.1 in)
2-piece boom lifting cylinder	100 mm (3.9 in) x 70 mm (2.8 in) x 972 mm (38.3 in) ± 1.8 mm (0.1 in)
Dipper cylinder	115 mm (4.53 in) x 80 mm (3.15 in) x 1120 mm (44.1 in) ± 1.8 mm (0.1 in)
Bucket cylinder	95 mm (3.7 in) x 65 mm (2.6 in) x 903 mm (35.6 in) ± 1.8 mm (0.1 in)
Positioning cylinder for 2PB	135 mm (5.3 in) 75 mm (3.0 in) x 645 mm (25.4 in)

Slewing

The rotation function is actuated by a closed hydraulic circuit, driving a mechanical gearbox with built-in automatic static brake.

Rotation speed	9 RPM
Rotation torque (SAE J1371)	36 N·m (26.6 lb ft)

Slewing gearbox

Model	705T2F/20.70
Total displacement	1159.2 cm³/rev (70.7 in³/rev)
Hydraulic motor displacement	56 cm³/rev (3.4 in³/rev)
Total reduction ratio	20.7
Maximum oil delivery	74 l/min (19.5 US gpm)
Hydraulic motor maximum pressure	320 bar (4640.0 psi)
Maximum input speed	1321 RPM
Gearbox output torque	5904 N·m (4354.6 lb ft)
Gearbox output speed	63.8 RPM
Oil quantity	3.5 l (0.92 US gal +/- 10%)
Dry weight	120 kg (265 lb +/- 10%)
Breaking torque	548 N·m (404.2 lb ft +/- 10%)
Complete opening pressure	13 bar (188.5 psi)
Max operating pressure	50 bar (725 psi)
Number of internally toothed steel discs	4
Number of sintered bronze discs with external teeth	5

Travel

Transmission with clutch pack.

Maximum travel speed at job	5 km/h (3.1 mph)
Maximum travel speed at job site (optional)	8 km/h (5.0 mph)
Maximum travel speed on the road	20 km/h (12.4 mph)
High speed on road (optional)	35 km/h (21.7 mph)
Maximum drawbar pull (field)	92 kN (20682.4 lb)

Travel motor

Model	20 km/h (12.4 mph): A6VM107 HA1T/63W-VZB 370A 35 km/h (21.7 mph): A6VM107 HA1TA/63W-VAB 370A-SK
Maximum intake volume V_{gmax}	107 cm ³ /rev (6.5 in ³ /rev)
Minimum intake volume V_{gmin}	35 km/h (21.75 mph) : 38 cm ³ /rev (2.32 in ³ /rev) 20 km/h (12.43 mph) : 69 cm ³ /rev (4.21 in ³ /rev)
N/max at V_{gmax}	20 km/h (12.4 mph): 1400 RPM 35 km/h (21.7 mph): 1514 RPM
N/max at V_{gmin}	20 km/h (12.43 mph) : 2200 RPM 35 km/h (21.75 mph) : 4150 RPM
Nmax	4500 RPM
Rated pressure PN	20 km/h (12.43 mph) : 400 bar (5800.0 psi) 35 km/h (21.75 mph) : 400 bar (5800.0 psi)
Service pressure P	370 bar (5365 psi)
Maximum pressure P_{MAX}	450 bar (6525 psi)
Adjustment start	320 bar (4640 psi)
Adjustment end	330 bar (4785 psi)
Hydraulic over adjustment (connector x) $V_{g/min}$ at P_x $V_{g/max}$ at P_x	0 45 bar (653 psi)

Tyres

Tyre	Manufacturer	Type	Pressure	V (max)
Twin	Mitas	10.00-20 PR16 NB38	7.5 bar (109 psi)	35 km/h (21.75 mph)
	Bandenmarkt	Excavator 315/80 R 22.5	8.5 bar (123 psi)	35 km/h (21.75 mph)
Single	Mitas	600/40 - 22.5	6.25 bar (91 psi)	35 km/h (21.75 mph)
	Michelin	18 R19.5 XF	7.5 bar (109 psi)	35 km/h (21.75 mph)
	Alliance	620/40 - 22.5	7.0 bar (102 psi)	35 km/h (21.75 mph)

Brakes

Service brake

Wet, actives on all wheels.

Parking brake

Mechanical brake at springs actuation, active on transmission.

Steering

Turning circle diameter (with 10.00-20 twin tyres)	15 m (49.21 ft)
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Power steering

Model	OSPD 60/185 LS
Displacement	60 - 185 cm³/rev (3.66 - 11.29 in³/rev)
Maximum steering pressure	190 - 200 bar (2755.0 - 2900.0 psi)
Shock valve adjustment	240 - 260 bar (3480.0 - 3770.0 psi)

Electrical system

Service voltage	24 V
Batteries	2 x 12 V
Batteries rating	100 A·h
Alternator	70 A
Starter motor	4 kW (5.44 Hp)

Buckets

Width	Weight	Heaped capacity	SAE capacity	Number of teeth
500 mm (19.69 in)	315 kg (694.5 lb)	0.248 m³ (8.8 ft³)	0.280 m³ (9.9 ft³)	3
750 mm (29.5 in)	350 kg (771.6 lb)	0.357 m³ (12.6 ft³)	0.424 m³ (15.0 ft³)	3
850 mm (33.5 in)	370 kg (815.7 lb)	0.414 m³ (14.6 ft³)	0.498 m³ (17.6 ft³)	3
900 mm (35.4 in)	380 kg (837.8 lb)	0.536 m³ (18.9 ft³)	0.536 m³ (18.9 ft³)	4
1000 mm (39.4 in)	415 kg (914.9 lb)	0.500 m³ (17.7 ft³)	0.610 m³ (21.5 ft³)	4
1100 mm (43.3 in)	440 kg (970.0 lb)	0.558 m³ (19.7 ft³)	0.684 m³ (24.2 ft³)	4
1200 mm (47.2 in)	470 kg (1036.2 lb)	0.616 m³ (21.8 ft³)	0.758 m³ (26.8 ft³)	5

NOTE: For the other available bucket models address to dealer.

Fuel system

Tank capacity	190 l (50.2 US gal)
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Engine

Type	F4GE9484D*J601
Displacement	4.5 l (1.2 US gal)
Operation	Diesel, water-cooled with turbocharger
Cylinders arrangement	in line
Valves per cylinders	2
Bore	104 mm (4.09 in)
Stroke	132 mm (5.20 in)
Power	90 kW (122.4 Hp) at 2000 RPM
Maximum torque	525 N·m (387.2 lb ft) at 1200 RPM
Rated rpm	2000 RPM ± 50
Injection pump	24V, mechanical, rotary VE Bosch
Alternator	
- voltage	24 V
- current	70 A
Starter motor (Bosch)	
- power	4 kW (5.4 Hp)
- voltage	24 V
Bio fuel	8 ± 1 %
Weight	480 kg (1058.2 lb)

Consumables

Supply summarizing chart

COMPONENT TO BE FILLED	QUAN- TITY	AMBRA	MANUFACTURER SPECIFICATIONS	INTERNATIONAL SPECIFICATIONS
Engine	5.5 - 12.5 l (1.5 - 3.3 US gal)	Mastergold HSP 15W-40	NH 330 H	API CI 4 ACEA E7
Swing gear	4.2 l (1.1 US gal)	TRX 80W-140	NH 600 TR	API GL 4 SAE 80W-140
Radiator (1)	11 l (2.9 US gal)	AGRIFLU-OT	NH 900 C	ASTM D 3306
Fuel tank	190 l (50.2 US gal)	-	-	EN 590
Front steering axle body	8.8 l (2.3 US gal)	TRX 80W-140	NH 600 TR	API GL4 SAE 80W-140
Rear rigid axle body	11.2 l (3.0 US gal)			
Font steering and rear rigid axles final drive	2.4 l (0.6 US gal) x 4			
Rear rigid axle gear box	2.5 l (0.7 US gal)	Mastergold HSP 15W-40	NH 330 H	API CI 4 ACEA E7
Hydraulic oil tank (2)	87 l (23.0 US gal)	HYDROSYSTEM 68 HV	NH 668 HV	DIN 51524 T2 MIL-H-24459
Air conditioning	820 g +/- 50 (28.9 oz +/- 1.8)	-	-	R134a
Windscreen washer	1.5 l (0.4 US gal)	TUTELA PROFESSIONAL SC35	-	-
Grease — Ball bearing	13.5 kg (29.8 lb)	MG2	NH 585/GR	NLGI2
Grease — Undercarriage	-	-	-	DIN 51825 — KLP2K 30
Grease — Attachment	-	GR EXP	NH 587/GR	NLGI2

NOTE: (1) Cooling system total volume: ~ 22 l (5.8 US gal). Water 11 l (2.9 US gal) / Antifreeze 11 l (2.9 US gal).

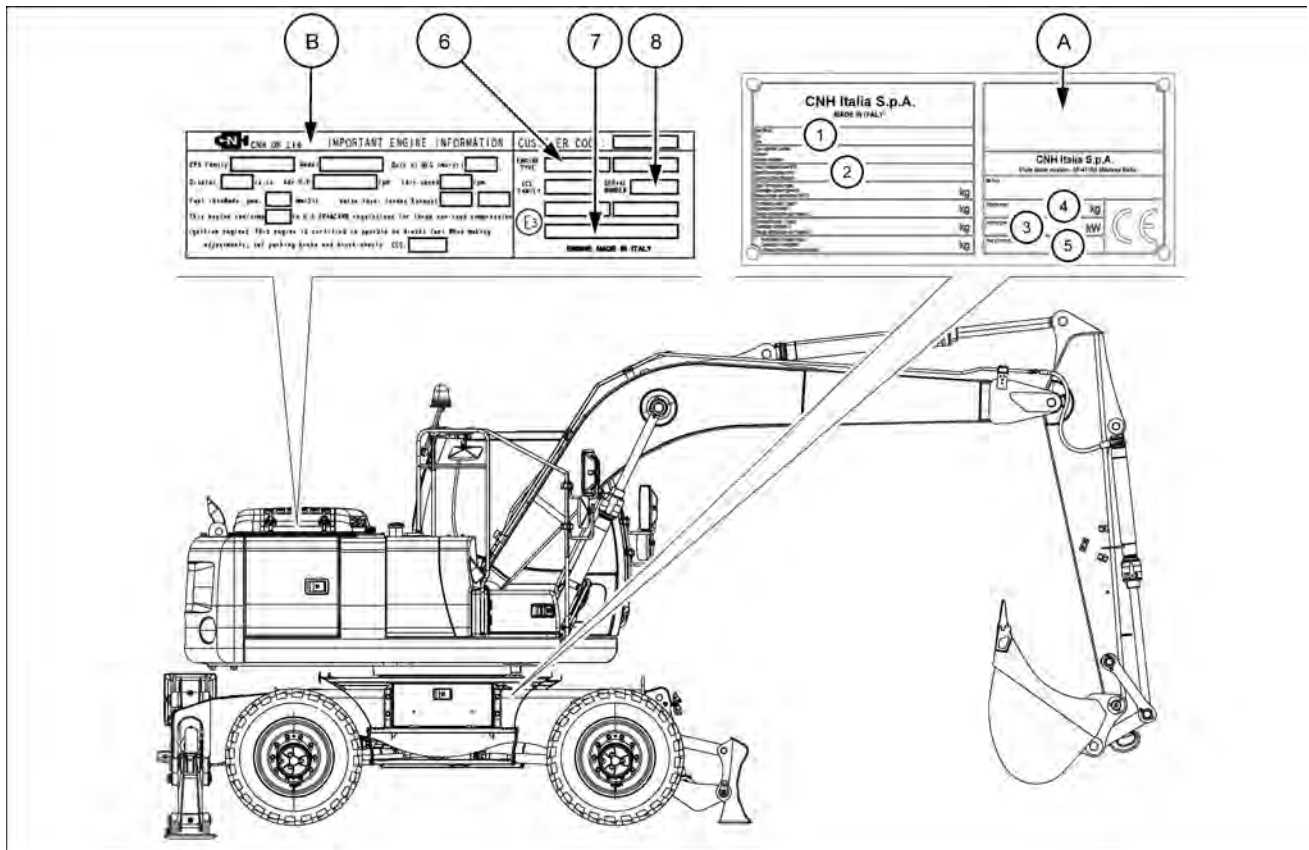
NOTICE: (2) Hydraulic system total volume: ~ 210 l (55.5 US gal) . If the machine was filled with biodegradable hydraulic oil **PANOLIN HLP SYNTH 46** (option), take note that this oil cannot be mixed with mineral hydraulic oil. Add hydraulic additive for **Panolin**: 2 l (0.5 US gal).

Temperature operating ranges

	AMBRA	Viscosity	Environment temperature range
Engine	MASTERGOLD HSP	SAE 15W-40	-15 - +40 °C (5.0 - 104.0 °F)
		SAE 10W-30	-25 - +25 °C (-13.0 - 77.0 °F)
Rotation gearbox	TRX 80W-140	SAE 80W-140	-25 - +45 °C (-13.0 - 113.0 °F)
Hydraulic system	HYDROSYSTEM 68 HV	ISO VG 68	-25 - +45 °C (-13.0 - 113.0 °F)

Product identification

IDENTIFICATION DATA



SMILWEX0013FB 1

- | | |
|--|---|
| A Machine identification plate | B Engine identification plate |
| 1 Model and category (Hydraulic Excavator) | 6 Engine type |
| 2 Machine serial number | 7 Engine emission stage approval number |
| 3 Nominal Power | 8 Engine serial number |
| 4 Unladen Mass | |
| 5 Year of Manufacture | |

IDENTIFICATION DATA - FOPS/ROPS

The machine is equipped with a **ROPS (Roll-Over Protective Structure)** and **FOPS (Falling Objects Protective Structure)** (1) for the cab. The protective structure, the fitting supports and the fastening elements on the machine are an integral part of the structure.

The **ROPS** label of homologation (2) is localized in the cab near the cab interior lighting.

In the case of work where there is a risk of frontal impact where object could penetrate the cab, a front guard may be installed.

⚠ WARNING

Roll-over hazard!

Securely fasten the seat belt. Your machine is equipped with a Roll-Over Protective Structure (ROPS) cab, ROPS canopy, or ROPS frame for your protection. The seat belt can help ensure your safety if it is properly used and maintained. Never wear a seat belt loosely or with slack in the belt system.

Failure to comply could result in death or serious injury.

W0143A

Any damage, fire, corrosion or modification will weaken the structure and reduce your protection. If this occurs, the Protective Structure **MUST** be replaced. Contact your dealer for Protective Structure inspection and replacement.

After an accident or fire that involve the cab and/or machine tip or roll over, the following **MUST** be performed by a qualified technician before returning the machine to field or job site operation:

- the Protective Structure **MUST** be checked and replaced if necessary;
- the mounting for the Protective Structure, operator seat and seat belt, **MUST** be carefully inspected for damages and replaced if necessary;

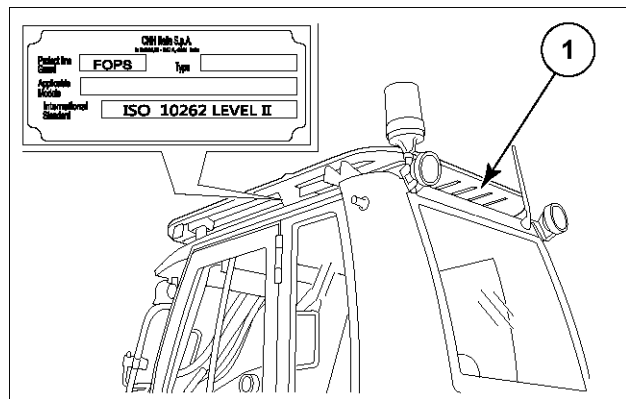
⚠ DANGER

Crushing hazard!

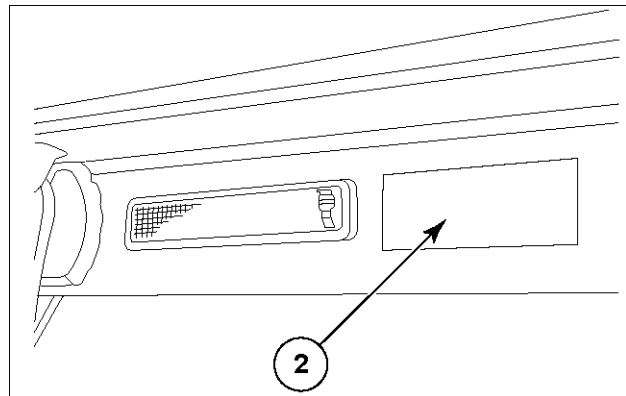
Do not change the Roll Over Protective Structure (ROPS) in any way. Unauthorized changes such as welding, drilling, or cutting will weaken the ROPS and decrease your protection. Have an authorized dealer replace the ROPS if damage of any kind occurs. DO NOT TRY TO REPAIR THE ROPS.

Failure to comply will result in death or serious injury.

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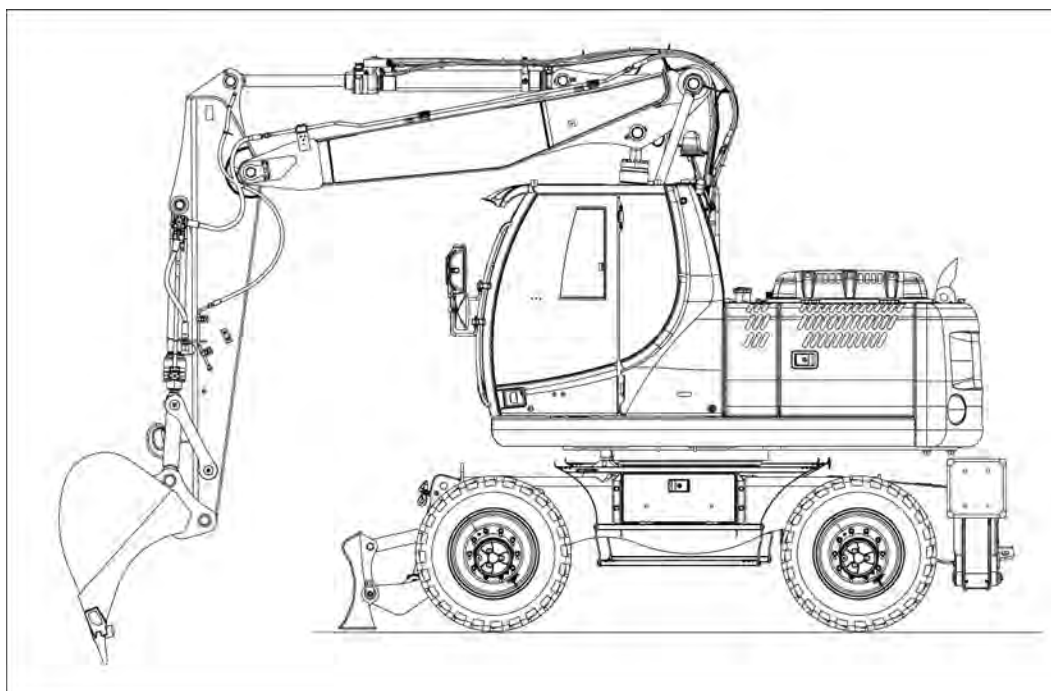


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SERVICE MANUAL

Engine



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