

D 601 AHG
D 601 AP
D 601 APG
D 1001 APG



OPERATOR'S MANUAL

ENGLISH
Original Manual

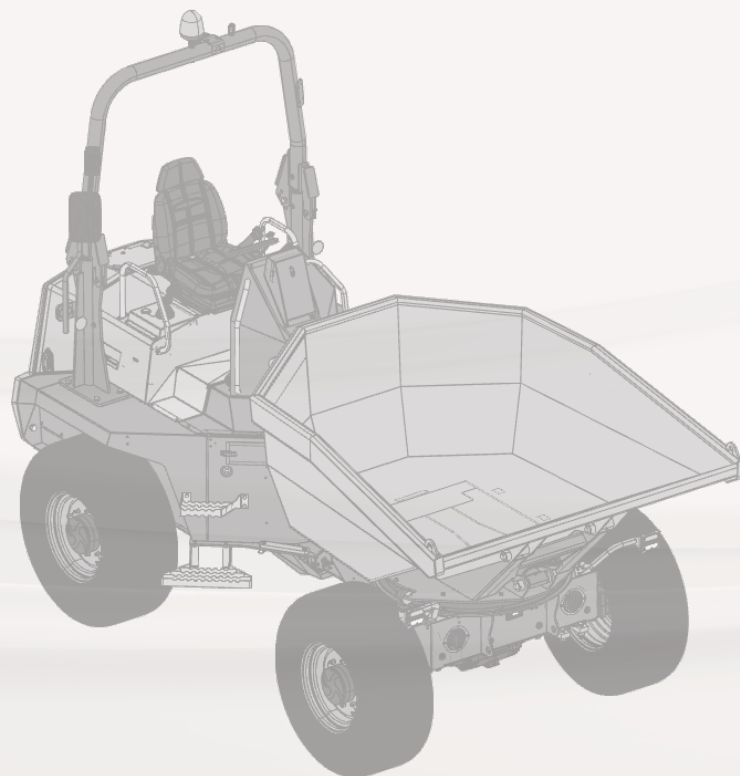


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D 601 AHG D 1001 APG

D 601 AP

D 601 APG



OPERATOR'S MANUAL

1	INTRODUCTION
2	SAFETY MEASURES
3	GETTING TO KNOW THE MACHINE
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5	EMERGENCY OR BREAKDOWN SITUATIONS
6	TRANSPORTATION, WAREHOUSE STORAGE AND END OF USEFUL LIFE
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8	MACHINE MAINTENANCE
9	ACCESSORIES

REVISIONS CHART



REVISIONS

Version	Revisions	
66.14440.00	31/01/2019	Initial version.
66.14440.01	10/10/2019	Add engine with particulate filter (DPF).
66.14440.02	16/06/2020	Pass maintenance from time to hours.
66.14440.03	22/10/2020	Insert: 'Machine orientation '..... 1-5 Add information in the launch of the first units of D1001 APG model.
66.14GB0.00	10/05/2021	Add cab. Complete hazard warnings.
66.14GB0.01	4/10/2021	Change the safety messages format.
66.14GB0.02	10/10/2022	Add requirements for machines being placed on the Great Britain market after Brexit.

AUSA Center, S.L.U.

Head office: C/ Castelladral, 1 - 08243 Manresa - Barcelona (Spain).

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INTRODUCTION

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FOREWORD

This operator's manual has been designed and compiled with the help of engineers and technical service specialists, to inform the operator of the different aspects of the machine.

The machine operator must take the necessary time to thoroughly read and understand this manual, so they can operate and maintain the machine safely and correctly.

HOW TO USE THIS MANUAL

The general index lists this manual's contents. In addition, each chapter has a detailed index, indicating the page where different contents can be located.

This manual contains information regarding safety, travel, use, transportation, storage and maintenance of the machine.

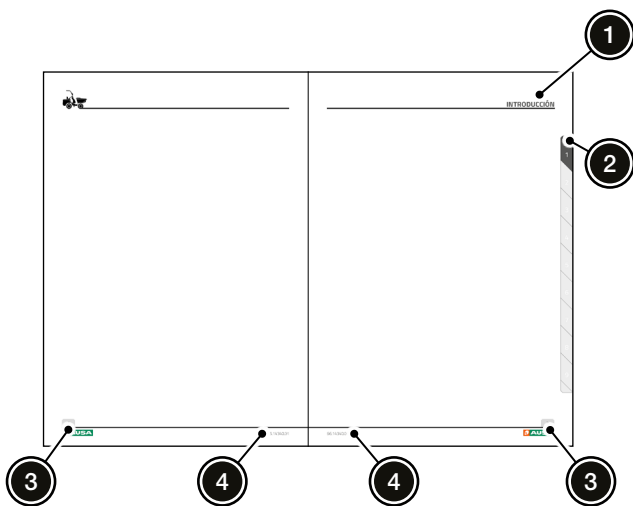
The pages of each chapter present the following information:

1. Chapter name.
1. Chapter number.
2. Page number.
3. Manual part number.

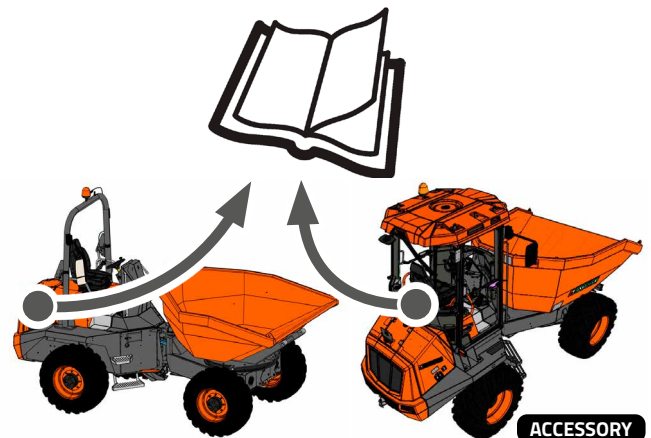
Information: This manual should be stored in the document case, in the engine compartment.

On machines equipped with a cab, this manual must be stored inside the cab, in the compartment located on the counterweight side. **ACCESSORY**

Information: The machine may be optionally equipped with a document holder fitted for manuals, protected by an anti-vandal system.



Page Format



Location of the Operator's Manual

HOW TO USE THIS MANUAL

Machine Identification

This operator's manual covers the following machine models:

- D 601 AHG
- D 601 AP
- D 601 APG
- D 1001 APG

Given that this operator's manual includes information about different machine models, it is very important that the operator correctly identifies the machine they are operating.

Information: Knowing the correct machine model affects issues such as safety, operation and maintenance.

Information: Throughout the manual, any information which refers exclusively to one machine model is identified with the appropriate label:

D 601

D 1001

SWIVEL SKIP

HYDROSTATIC TRANSMISSION

POWERSHUTTLE TRANSMISSION

ENGINE WITH PARTICULATE FILTER (DPF)

Information: This label refers to the engine with particulate filter (DPF).

ENGINE WITHOUT PARTICULATE FILTER (DPF)

Information: This label refers to the engine without particulate filter (DPF).

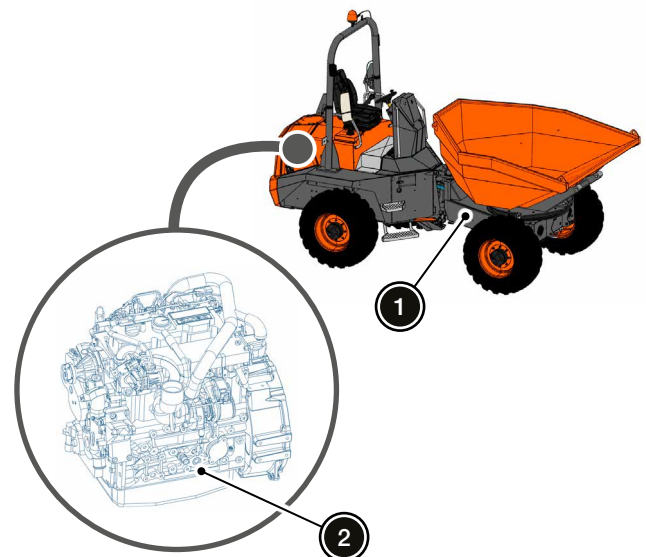
If the information does not have any of these labels, then it refers to all machine models covered in this manual.

Information: If the information has the following label, then it refers to elements and/or functionalities not included in the standard machine. **ACCESSORY**

To identify the machine, it is necessary to know the following information:

- Machine model:
- Date of purchase:
- Chassis number (1):
- Engine number (2):

Information: The machine model is indicated on the specifications plate. For additional information, please refer to 'Identification Plates and Decals' in Chapter 2.



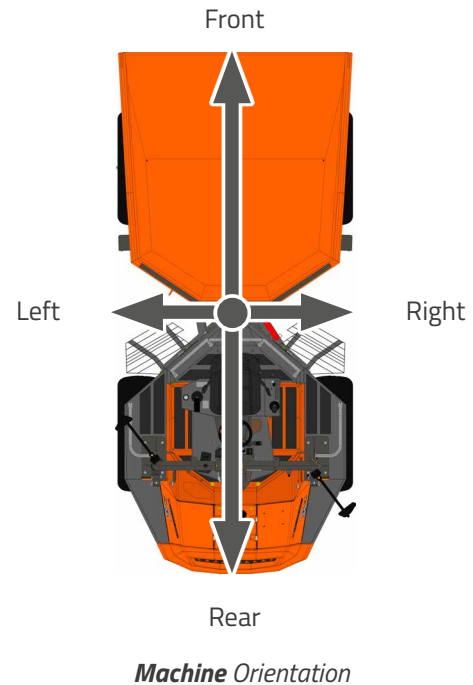
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HOW TO USE THIS MANUAL

Machine Orientation

Information: The terms *right, left, forward and back*, when used in this manual, refer to these positions from the operator's seat looking forward.



WARNINGS

⚠ DANGER Indicates a dangerous situation which, if not avoided, will result in death or permanent injury.

⚠ WARNING Indicates a dangerous situation which, if not avoided, may result in death or permanent injury.

⚠ CAUTION Indicates a dangerous situation which, if not avoided, may result in reversible injury.

NOTICE Used to indicate practices not related to physical injury.

Information: Convenient information to take into account.

🌿 Environment: Information related to conditions, practices or procedures which may pose a risk to the environment.

ACRONYMS

Term	Meaning
A/C	Air Conditioning.
DPF	Diesel Particulate Filter.
ECU	Electronic Control Unit.
EGR	Exhaust Gas Recirculation.
EN	European Standard.
PPE	Personal Protection Equipment.
FNR	Forward - Neutral - Reverse.

Term	Meaning
FVS	Full Visibility System: system of cameras and proximity sensors.
HMI	Human-Machine Interface.
ROPS	Roll Over Protective Structure.
N/A	Not Applicable.
W/N	Without Number.
SAE	Society of Automotive Engineers.

LIABILITY AND WARRANTY

This section provides indications regarding liability and warranties related to the machine and its use.

Information: AUSA is continually improving its products and reserves the right to make such improvements without incurring any obligation to make changes to machines previously sold. Therefore, claims cannot be made based on the data, illustrations or descriptions set forth in this operator's manual.

Screen

⚠ WARNING Risk of serious injury by electrical shock.

Electrically live parts are located inside the screen box.

⚠ WARNING Risk of accident by careless driving.

The FVS of the machine should be used with caution, complying with applicable driving regulations.

NOTICE Risk of damage by using high-pressure water.

Never use high-pressure water on the screen. Although it is waterproof, dampness may cause general interior damage.

NOTICE Risk of damage by disassembling the camera components.

Disassembling the camera components or the monitor will render the warranty void.

Disassembling the camera will damage the integrity of the camera's watertight seal.

Information: The specifications are subject to change without prior warning.

The FVS complements the rear-view mirrors, thus making it easier to carry out machine operations.





LIABILITY AND WARRANTY

Machines with Built-In Control Units

NOTICE Risk of damage by welding with active connections.

Disconnect all the connectors for the control units during welding operations.

NOTICE Risk of damage by defective components.

Replace The defective control units and sensors with new ones, never repair them.

NOTICE Risk of damage by disconnecting the battery too soon.

Do not disconnect the battery immediately after stopping the engine. Wait at least two minutes before disconnecting.

Spare Parts

To guarantee the machine maintains the same technical level as the date it was supplied, always use original AUSA spare parts.

Information: For additional information regarding spare parts, please contact the official AUSA dealer.

Fuel

NOTICE Risk of damage by using non conforming fuel.

The use of fuel that does not comply with standard EN 590/ASTM D975 does not guarantee the safe operation or the durability of the different components of the diesel engine.

The use of fuel that does not comply with standard EN 590/ASTM D975 will void the warranty.

Information: The specifications of the fuel used, as well its sulphur content, are necessary to meet the compliance requirements in relation to exhaust gas emission where the machine is used.

Transportation

AUSA is not responsible for the transportation of the machine; this is the distributor's responsibility.

Protection

▲ DANGER Risk of death or serious injury by not using the ROPS.

Whenever the machine is in use, the Roll Over Protective Structure (ROPS) should be in its operational position. Otherwise, in the event of an accident, the operator may suffer severe injury or death.

For machines equipped with a cab, the cab must be assembled and correctly attached to the chassis. See 'Transporting the Machine' in Chapter 6. **ACCESSORY**

Current legislation does not require the mounting, as standard, of a structure for protection from falling objects. However, if the machine is to be used in areas that pose this type of risk, the same legislation indicates that the machine must be equipped with said structure.

Lighting Equipment

The use of the machine without lighting equipment is allowed only during daylight hours or in well-lit areas.

EC DECLARATION

In countries where applicable, the machine will be accompanied with the following declaration of conformity:



DUPLICATE EU DECLARATION OF CONFORMITY

The manufacturer **AUSA Center, S.L.U.**, established on c/ Castelladral, 1, 08243 – Manresa – Barcelona – Spain, declares that the machine assigned below:

Generic denomination: **DUMPER**
 Model/Type: **model**
 Serial number: **chassis**
 Year of manufacture: **year_manufacture**

fulfils all the relevant provisions from the following harmonization legislation from the European Union:
 Machinery Directive, 2006/42/EC
 Electromagnetic Compatibility Directive 2014/30/EU
 Sound level Directives of machinery used outdoors, 2000/14/EC and Regulation (EC) No 219/2009
 Directive 2014/53/EU relating to the making available on the market of radio equipment, (when the machine if fitted with a radio equipment for fleet tracking)

based on the following European Standards:
 EN 474-1:2006+A5:2018 – Earth-moving machinery – Safety – Part 1: General requirements.
 EN 474-6:2006+A1:2009 – Earth-moving machinery – Safety – Part 6: Requirements for dumpers.
 EN 13309:2010 – Construction machinery – Electromagnetic compatibility of machines with internal power supply.

The assessment procedure has been carried out in accordance with the provisions relating to non-dangerous machinery in the above mentioned Directives.

Name and address of the person authorized to compile the technical file:

Mr. / Mrs.
AUSA Center, S.L.U.
 c/ Castelladral 1, 08243 – Manresa – Barcelona



Mr. / Mrs.
 Manresa, dd/mm/yyyy.

AUSA Center, S.L.U.
 c/ Castelladral 1 - P.O.B. 194
 08243 MANRESA (Barcelona) España

Tel. (+34) 93 874 73 11
 Fax. (+34) 93 874 12 11

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UKCA DECLARATION

Machines being placed on the Great Britain market after Brexit will be accompanied with the following declaration of conformity:



DUPLICATE UK DECLARATION OF CONFORMITY



The manufacturer **AUSA Center, S.L.U.**, established on c/ Castelladral, 1, 08243 – Manresa – Barcelona – Spain, declares, under the sole responsibility, that the machine assigned below:

Generic denomination: **DUMPER**
Model/Type: **model**
Serial number: **chassis**
Year of manufacture: **year_manufacture**

fulfils all the relevant provisions of the following UK Regulations, (and their amendments):

Supply of Machinery (Safety) Regulations 2008
Electromagnetic Compatibility Regulations 2016
Noise Emission in the Environment by Equipment for use Outdoors Regulations 2001
Radio Equipment Regulations 2017, (when the machine if fitted with a radio equipment for fleet tracking)

based on the following UK designated standards:

EN 474-1:2006+A6:2019 – Earth-moving machinery – Safety – Part 1: General requirements.
EN 474-6:2006+A1:2009 – Earth-moving machinery – Safety – Part 6: Requirements for dumpers.
EN ISO 13766-1:2018 – Construction machinery – Electromagnetic compatibility of machines with internal power supply.

The assessment procedure has been carried out in accordance with the provisions relating to non-dangerous machinery in the above mentioned Regulations.

Name and address of the person authorized to compile the technical file:

Mr./Mrs.
AUSA Center, S.L.U.
c/ Castelladral 1, 08243 – Manresa – Barcelona



Mr./Mrs.
Manresa, dd/mm/yyyy.

AUSA Center, S.L.U.
c/ Castelladral 1 - P.O.B. 194
08243 MANRESA (Barcelona) España

Tel. (+34) 93 874 73 11
Fax. (+34) 93 874 12 11

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2

SAFETY MEASURES

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Safety standards must be adhered to without exception.

- Health and safety at work and accident prevention standards should be adhered to during all transport, maintenance or repair operations.
- Follow all operation, maintenance and repair conditions specified in this manual.

AUSA manufactures their machines in accordance with demands for intrinsic protection as established in current regulations or standards for countries where the machine is sold, against dangers of any kind which may present a risk to health or life whenever the machine is used and maintained in accordance with these regulation or standards.

Any hazard resulting from improper use, not in compliance with these instructions or others specifically provided with the machine will be the responsibility of the user and not AUSA.

This chapter gives instructions on how the machine must be used as per the provisions in 2006/42/EC Machine Safety Directive, the Supply of Machinery (Safety) Regulations 2008 and EN 474 Part 1 and Part 6 safety requirements.

USING THE MACHINE

Intended Use

Information: Any use other than that intended will be considered improper.

The machine has been designed and manufactured for the transport, dumping and/or dispersion of bulk materials (mortar, concrete, sand, gravel, rubble, etc.). It may also be used in jobs related to gardening, forestry, etc.

The machine has not been designed for full-load long-distance transport. Long-distance trips are allowed if they are roundtrips, within a delimited area where one way the machine is full and the othe way the machine is empty.

When traveling on public roads, check first the laws that may be applicable where the machine is operated.

Improper Use

Information: Improper use is defined as any use of the machine that does not conform to the criteria and instructions detailed in this manual, or any other uses different than those described here.

Improper use of the machine may cause serious injury to persons, the machine or the environment.

Below, some of the most frequent and dangerous instances of improper use are listed:

- Transport objects that stand-out from the hopper or that may be projected during the machine operation.
- Transport materials that adhere to the hopper or that may get struck in it (clay mud, stone blocks).
- Transporting persons in the skip or on any part other than the operator seat.
- Failing to comply with the instructions for use and maintenance set forth in this manual.
- Working on excessively inclined terrains. See '*Safety Measures*' to know the machine stability limits.
- Overloading. See '*Specifications Chart*' to know the machine payload.
- Working on unstable, unconsolidated ground or on the edge of ditches and trenches.
- Using accessories and equipment for purposes other than those for which they are designed.
- Using accessories and equipment not manufactured or authorized by AUSA.

USER QUALIFICATION AND CONDITION

The operator of the machine must not operate it until they have read and fully understood this operator's manual, training is accomplished and operation of the machine has been completed under the supervision of an experienced and qualified operator.

It is important that the operator know and comply with all laws and rules applicable on the job site where the machine is operating, including those requiring operator training and certification. It is the user's responsibility to comply with these laws.

Operators of this machine must possess a valid, applicable driver's license, be in good physical and mental condition, have normal reflexes and reaction time, good vision and depth perception and normal hearing. Operator must not be using medication which could impair abilities or be under the influence of alcohol or any other intoxicant during the work shift.

GENERAL SAFETY INFORMATION

Context	Recommendation
MODIFICATIONS TO THE MACHINE	Any modification which affects the capacity and safety of the machine must be authorized by AUSA or by a responsible manufacturer, modifying, where necessary, the operator's manual and corresponding plates.
	AUSA will not be held responsible for any incidences or accidents resulting from the use of non-original spare parts or repairs carried out by unauthorized workshops.
	In the case of accessories and equipment being installed on the base frame of the machine by companies not connected to AUSA, all prescriptions and limitations of the machine in relation to mass and dimensions, efficiency of the lighting equipment and adjustments thereto, along with the need for protection or additional systems must be taken into account to guarantee the safety of the machine.
	Any modifications to the machine may alter the safety conditions and invalidate any declaration issued regarding the machine. Contact AUSA for additional information.
USE	The machine may only be used for the purposes for which it has been designed.

Context	Recommendation
MAINTENANCE	The operator should carry out periodic maintenance when using the machine to ensure it meets the functional safety requirements.
DAMAGE	If the Roll Over Protective Structure (ROPS) suffers permanent damage or deformation, it must be replaced with a new one.
	ACCESSORY For machines equipped with a cab, the cab must be replaced with a new one if it has suffered permanent damage or deformation to its structure.
OPTIONAL ACCESSORIES	The use of accessories may reduce the load capacity of the machine.
	If the machine is equipped with accessories, read carefully the instructions manual specific to that accessory prior to using it. The manuals of all accessories, supplied by their manufacturers, should be kept together with this operator's manual.





DURING REFUELING

Context	Recommendation
FIRES OR EXPLOSIONS	<p>Risk of fire and explosions by smoking or flames close to fuel vapors. Fuel vapors are explosive.</p> <ul style="list-style-type: none"> Do not smoke or cause flames or sparks in refueling areas.
	<p>Risk of fire and explosions by storing fuel in enclosed areas. Concentrated fuel vapors may cause fires or explosions.</p> <ul style="list-style-type: none"> Do not store fuel in enclosed areas.
TOXICITY	<p>Risk of intoxication by fuel contact. The fuel is toxic if ingested or if it comes into contact with the skin.</p> <ul style="list-style-type: none"> Avoid direct contact with hands or mouth with the fuel. Never transfer the fuel by sucking it through a hose using your mouth.
	<p>Risk of intoxication by vapor inhalation. In high concentrations, the fuel vapors may cause dizziness, lack of concentration and even death in the case of prolonged exposure.</p> <ul style="list-style-type: none"> Avoid inhalation of fuel's vapors. If symptoms of dizziness are experienced, seek medical assistance immediately.

Context	Recommendation
PPE	To handle fuel use adequate water-tight clothing, safety goggles and gloves.
TRANSFERRING	<p>Risk of exposure to explosive vapors by refueling in unsafe locations. When refueling by transferring fuel from a tank, barrel or drum, slowly open the tank's fuel outlet valve. If the tank or drum does not have an outlet valve, use an adequate vacuum pump.</p>
SPILLS	In the case of a fuel spill, clearly mark the area, spread absorbent material, and inform your supervisor. Take the necessary measures to avoid risks until the spilled fuel has been completely removed and the surface is sufficiently dry.

FOR THE OPERATOR

Context	Recommendation
TRAINING	Before using the machine, read this operator's manual thoroughly and pay attention to all the safety plates and decals installed on the machine. When in doubt, check with your supervisor.
	Operation, maintenance and repair of the machine must only be entrusted to duly trained personnel, who have the required tools and know the intervention and safety procedures relating to the machine.
MOBILE TELEPHONE	<p>Risk of accident by using mobile phones.</p> <p>The use of mobile phones is prohibited while operating the machine.</p> <ul style="list-style-type: none"> If necessary, a hands-free system should be employed.

Context	Recommendation
PPE	Request the necessary personal protection equipment to carry out the work in a safe and comfortable fashion, for example: <ul style="list-style-type: none"> Helmet. Ear protectors. Warm clothing. Reflective equipment. Safety goggles.
	To avoid allergic reactions and other hazards affecting the skin, replenishing fuel or other fluids should be carried out wearing protective gloves.
ENTRAPMENT	<p>Risk of entrapment with inappropriate clothing.</p> <ul style="list-style-type: none"> Do not operate the machine while wearing bracelets, chains, loose clothing, long hair which is not tied back, etc. as they might get caught in the controls, rotating parts, on edges, etc.





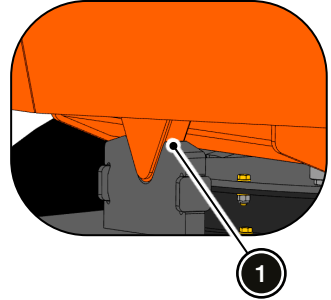
DURING OPERATION

Context	Recommendation
WORKING IN ENCLOSED ENVIRONMENTS	<p>Risk of fire and explosion in enclosed environments.</p> <ul style="list-style-type: none"> Do not operate the machine in areas where there is a risk of fire or explosion, unless it has been prepared for that purpose.
	<p>Risk of intoxication from excessive exhaust fumes in enclosed environments.</p> <p>If the work is to be carried out in closed spaces, make sure the area is well ventilated to prevent the excessive build-up of exhaust fumes.</p> <ul style="list-style-type: none"> Always stop the engine when it is not required.
	<p>Use ventilation systems to remove dust or flammable gases in the work area.</p>
FIRE	<p>Risk of fire with exhaust gas.</p> <p>The exhaust gas from the muffler is very hot.</p> <ul style="list-style-type: none"> To prevent a fire, do not expose dry grass, mowed grass, oil or any other combustible materials to the exhaust gas. Keep the engine and muffler clean at all times.

Context	Recommendation
BEFORE OPERATION	<p>Risk of death or serious injuries due to unadjusted seatbelt.</p> <ul style="list-style-type: none"> Correctly adjust and fasten the seatbelt before operating the machine.
	<p>Risk of death or serious injuries due to unadjusted seat.</p> <ul style="list-style-type: none"> Adjust the seat position to the operator's physical build.
	<p>Risk of accident by starting the machine without operator.</p> <ul style="list-style-type: none"> Do not start the machine or operate the controls if the operator is not on the seat.
	<p>Risk of death or serious injuries by not using a Roll Over Protective Structure (ROPS).</p> <ul style="list-style-type: none"> Whenever the machine is in use, the Roll Over Protective Structure (ROPS) should be in its operational position.
	<p>ACCESSORY</p> <p>For machines equipped with a cab, the cab must be assembled and correctly attached to the chassis. See '<i>Transporting the Machine</i>' in Chapter 6.</p>

DURING OPERATION

Context	Recommendation
DURING OPERATION	<p>Risk of accident due to obstruction of controls.</p> <ul style="list-style-type: none"> Keep the operator's position / cab clear of all objects or tools that could move about and might obstruct the controls or prevent the performance of a maneuver when required.
	<p>Risk of serious injuries due to body parts the Roll Over Protective Structure (ROPS).</p> <ul style="list-style-type: none"> Keep hands, feet and, in general, the entire body inside the protection area of the Roll Over Protective Structure (ROPS) or the cab. ACCESSORY
	<p>Risk of accident due to unclear visibility.</p> <ul style="list-style-type: none"> Ensure clear forward visibility. If the load impedes forward vision, drive in reverse while exercising caution.

Context	Recommendation
DURING OPERATION (continued)	<p>SWIVEL SKIP</p> <p>Risk of accident due to undesired movements of the skip.</p> <ul style="list-style-type: none"> During transport, the longitudinal axis of the skip should be positioned in the direction of travel. To guarantee this, the skip should be inserted in the central lock (1). 
	<p>Risk of fire through contact of flammable elements with the muffler.</p> <p>Make sure there are no flammable elements around the muffler.</p>
	<p>Any anomaly observed while using the machine should be reported immediately to a superior or to the maintenance service.</p>
	<p>Risk of severe burn injuries by touching the muffler.</p> <ul style="list-style-type: none"> Do not touch the muffler or become exposed directly to the gases.

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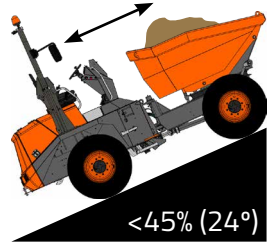
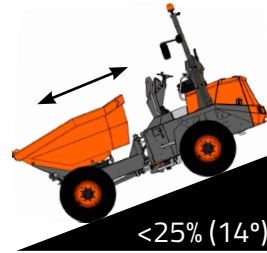

DURING OPERATION

Context	Recommendation
DURING OPERATION (continued)	<p>Risk of accident by driving regularly at maximum speed.</p> <p>Regularly driving the machine at maximum speed may represent a danger to the operator and to his or her surroundings.</p> <ul style="list-style-type: none"> Adjust the speed of the machine at all times to the work conditions, and to the area where it is being carried out. Drive at slow speed and in accordance with the ground conditions when transporting a load.
	<p>Risk of accident by reversing without checking the path of travel.</p> <ul style="list-style-type: none"> Before traveling in reverse, the operator should check that doing so will not put at risk either the machine itself or nearby people or objects.
	<p>Risk of accident by driving with the skip raised.</p> <ul style="list-style-type: none"> Do not drive with the skip raised.
	<p>SWIVEL SKIP</p> <p>Risk of accident by activating two skip movements simultaneously.</p> <ul style="list-style-type: none"> Do not activate two skip movements simultaneously.

Context	Recommendation
DURING OPERATION (continued)	<p>Risk of accident by turning the steering wheel and activating skip movements simultaneously.</p> <ul style="list-style-type: none"> Do not turn the steering wheel and activate skip movements simultaneously.
	<p>Risk of accident due to insufficient resistant ground.</p> <ul style="list-style-type: none"> Check that the resistance of the ground on which you are driving is sufficient for the loaded machine, in particular on access to bridges, embankments, slabbed areas, loading areas, etc.
	<p>Depending on the work to be carried out, the operator must determine the existence of hazards that might require adopting special measures.</p>
	<p>Pay full attention to the work. The safety of both the operator and others depends on the operator's caution.</p>
	<p>Risk of accident by raising too much dust.</p> <ul style="list-style-type: none"> Depending on the ground, try to raise as little dust as possible while traveling.
	<p>Risk of accident by driving too close to persons.</p> <ul style="list-style-type: none"> The operator should ensure that there are no persons in the work area of the machine when it is in operation.

DURING OPERATION

Context	Recommendation
DURING OPERATION (continued)	<p>Risk of damage to devices with high electromagnetic sensitive.</p> <ul style="list-style-type: none"> If the machine is used in areas where there are devices that are very sensitive to electromagnetic emissions, make sure they will not be affected.
	<p>Risk of accident by loading the skip while operator is in driving position/in the cab.</p> <ul style="list-style-type: none"> The operator must leave the operator's position/cab when the skip is loaded by shovel, crane, or other similar external methods
	<p>Risk of accident by transporting objects that are too wide.</p> <ul style="list-style-type: none"> Do not transport objects wider than the machine's width, particularly if they are unstable.
	<p>Risk of accident by transporting objects that may be projected.</p> <ul style="list-style-type: none"> Do not transport objects that stand-out from the hopper or that may be projected during the machine operation.
	<p>The machine is not designed to tow other vehicles. In the inevitable event that this may be necessary, a load should be placed in the skip to ensure traction.</p>

Context	Recommendation
TRAVELING AND OPERATION ON SLOPES	<p>Risk of accident by operating on slopes that are too steep.</p> <ul style="list-style-type: none"> Do not operate on slopes which exceed the recommended gradient. Respect the machine's stability limits:
	 <p><45% (24°)</p>
	 <p><25% (14°)</p>
	 <p><20% (11.3°)</p>

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DURING OPERATION

Context	Recommendation
TRAVELING AND OPERATION ON SLOPES (continued)	<p>Risk of accident by traveling transversally on a slope.</p> <ul style="list-style-type: none"> When accessing a slope, always place the machine on a straight line. Avoid traveling transversally For transversal traveling, carry out a change in position on flat ground, and then enter the slope in a straight line.
	Pay special attention when working on slopes; move slowly and avoid diagonal orientation.
	A slope within the recommended gradient does not mean that this slope can be maneuvered on with absolute safety under any load, terrain or handling conditions.
	POWERSHUTTLE TRANSMISSION
	<p>Risk of accident by going down a slope in NEUTRAL.</p> <p>Never go down a slope with the gear lever in the NEUTRAL position.</p>
	Only access slopes where the ground is stable, as the machine may slide (even on low gradients) on grass, brush, damp metal surfaces, frozen ground, snow, etc.
	The machine may skid sideways on stony ground, and may lose stability on ground that is uneven.
	The presence of surface stones and humidity may impair the traction and stability of the machine.

Context	Recommendation
TRAVELING AND OPERATION ON SLOPES (continued)	On soft ground, the machine may sink and the wheels may become buried. This increases the machine's angle (maximum gradient and maximum lateral inclination), which may cause it to tip over.
	When operating on a slope it is not advisable to swivel or tip the skip.
	Tip the skip to unload it only on the upside of the slope.
	When traveling on slopes with the skip loaded, the skip should always face the upslope, regardless of the direction of travel.
	When traveling on slopes with the skip unloaded, the skip should always face the downslope, regardless of the direction of travel.
	If the engine stops during operation on a slope, put the travel selector (FNR) in NEUTRAL and restart the engine.
MACHINE LOADS	<p>Risk of accident by transporting people.</p> <ul style="list-style-type: none"> The machine must not be used to transport people, other than the operator. Transporting persons in the skip is prohibited.

DURING OPERATION

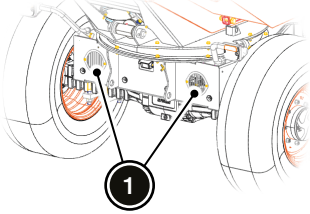
Context	Recommendation
MACHINE LOADS (continued)	<p>Risk of accident by overloading the machine.</p> <p>Overloading the machine makes it unstable, hard to handle, and may cause the machine to tip over or components to break.</p> <ul style="list-style-type: none"> Always ensure that the maximum authorized weight of the machine or the maximum axle load when collecting materials in the skip is not exceeded. See '<i>Specifications Chart</i>' in Chapter 7. Carry out maneuvers gently, especially when changing direction on slippery ground.
	<p>Risk of accident by transporting sticking materials.</p> <ul style="list-style-type: none"> Avoid transporting materials that stick to the skip (clayey mud, etc.) or that may become stuck inside (stone blocks, etc.), as they may make the machine unstable during unloading.
	<p>Risk of fire or intoxication accident by transporting prohibited materials.</p> <ul style="list-style-type: none"> Do not transport inflammable or explosive materials or substances that are detrimental to health.
	<p>Risk of accident by loading and distributing the material incorrectly.</p> <p>The handling, stability, and breaking distance are affected when loading the machine.</p> <ul style="list-style-type: none"> Always place the load as low as possible to reduce the effects of a high center of gravity.

Context	Recommendation
UNLOADING THE SKIP	<p>Risk of accident by unloading the skip near an unreinforced bank.</p> <ul style="list-style-type: none"> Do not unload the contents of the skip near a bank which is not reinforced unless there is a safety stop bar for the wheels at a safe distance from the edge.
	<p>Risk of accident by unloading with no caution.</p> <ul style="list-style-type: none"> Perform the unloading maneuver progressively, maintaining the stability of the machine. Exercise greater caution when unloading the skip, as the center of gravity of the machine may change.
	<p>Risk of accident by unloading close to persons.</p> <ul style="list-style-type: none"> No one should be near the machine when dumping the contents of the skip. Before raising or lowering the skip, the operator should ensure that all persons are out of its reach.
ON PUBLIC ROADS	<p>Risk of accident by driving on public roads without rotating beacon.</p> <ul style="list-style-type: none"> Activate the rotating beacon when the machine is operating on a public road.





DURING OPERATION

Context	Recommendation
<p>ON PUBLIC ROADS (continued)</p>	<p>Risk of accident by driving on public roads with headlights protective grills.</p> <p>If the machine is equipped with a lighting equipment, remove the headlights protective grills (1) while driving on public roads.</p> 
	<p>Risk of accident by driving on public roads without caution.</p> <ul style="list-style-type: none"> ▪ When driving on public roads, adherence to current applicable laws is mandatory. <p>In some countries, the transport of any kind of loads is not allowed while traveling on public roads. Consult the laws that may be applicable where the machine is operated.</p> <ul style="list-style-type: none"> ▪ When approaching a crossroads with poor visibility, slow down, sound your horn and move forward slowly, in accordance with the given visibility conditions. ▪ Give way to any pedestrians you might come across while driving.
	<p>To drive the machine on public roads, all necessary approvals and licenses must be obtained in accordance with current local laws where the machine is used, also incorporating legally mandated signaling and safety elements.</p>

DURING MAINTENANCE

Context	Recommendation
TRAINING	Only people who have familiarized themselves with the operator and safety manual may carry out maintenance, repair, adjustment, assembly or removal tasks of the machine elements. It is recommended that a list of these persons is made, in which they confirm they have familiarized themselves with the operator's manual.
	Respect the environment. When changing oil, fluids, tyres, batteries, etc., take the used materials to the corresponding recycling centers.
	Persons who carry out repairs, assembly, disassembly or adjustment tasks should follow the instructions contained herein or, where applicable, the instructions supplied separately by AUSA.
	Always keep the machine well maintained. Specialized personnel should be assigned to this task and equipped with the necessary tools and appropriate instructions. Only authorized personnel should carry out maintenance and repair work.
MACHINE STOPPED	Risk of death or serious injuries due to performing maintenance tasks in unsafe conditions. Unless unavoidable, all work on the machine must be done with the machine stationary, the engine stopped, the skip empty, and all the immobilizing and locking devices engaged.

Context	Recommendation
MACHINE STOPPED (continued)	Maintenance, servicing, repair and adjustment tasks on the hydraulic motors should only be carried out with the engine stopped.
	If the machine engine is running in an area with inadequate ventilation or in an enclosed area, there is a risk of fume poisoning.
ERGONOMICS	Risk of death or serious injuries due to performing maintenance tasks in unsafe conditions. Some operations are easier done with the skip raised, and in the unloading position. Before doing so, precautions must be taken to prevent any involuntary movement, using the devices on the machine specifically designed for this purpose. See ' <i>Immobilizing the Skip</i> ' in Chapter 4.
IDENTIFICATION PLATES AND DECALS	The plates and decals, instructions and warnings attached to the machine must be kept in a perfectly legible condition.
TOWING THE MACHINE DUE TO A MALFUNCTION	If the machine needs to be towed, use a tow bar whenever possible or, if none is available, a cable that is strong enough for the job. In all cases, attach it to the points indicated by AUSA. See ' <i>Towing</i> ' in Chapter 6. Perform the maneuver at a speed no greater than 2 km/h, for a distance no further than 1 km. When driving a towed machine, pay attention to the position of your hands on the steering wheel, so that wheel whiplash movements do not cause damage.





DURING MAINTENANCE

Context	Recommendation
TOWING THE MACHINE DUE TO A MALFUNCTION (continued)	Ensure that the towing vehicle has sufficient towing and braking capability to be able to perform this operation.
	HYDROSTATIC TRANSMISSION Before performing the towing operation, follow the instructions given in 'Towing', in Chapter 6.
TOWING A TRAILER	Drive carefully and at a reduced speed; and if the tow load is not equipped with an overrun brake, make sure the brakes are strong enough for both the machine mass and that of the tow load.
	Tow loads have restrictions when driving on public roads. When in doubt, check with the local authorities. See 'Towing' in Chapter 6.
HOISTING AND ANCHORING THE MACHINE	The process of hoisting the machine for manipulation or inspection must be performed at the points indicated in it for this purpose. Before performing the hoisting operation, follow the instructions provided in 'Loading Using a Crane', in Chapter 6.
	Before proceeding to hoist the machine, the articulation safety prop should be placed between the two chasses bodies, so that the articulation is immobilized. See 'Immobilizing the Chassis' in Chapter 4.

Context	Recommendation
ELECTRICITY	Risk of electrical short cut by contacting unprotected battery posts. Unprotected battery posts can accidentally be shorted out by a tool, part, etc. <ul style="list-style-type: none"> Protect the battery posts when carrying out any repair work.
	Risk of damage to electric and electronic units by electrical welding work on the machine. <ul style="list-style-type: none"> Before carrying out any welding work on the machine, disassemble all electrical and electronic units and disconnect the positive post of the battery.
WHEELS	For safety reasons, split wheels must not be used (those made of two rims bolted together).
	When changing a tyre, make sure it is fitted with the tread pattern facing the right way.
	When replacing tyres, in addition to ensuring that they are the correct replacements, follow the tyre manufacturer's safety instructions.

DURING MAINTENANCE

Context	Recommendation
BEFORE MAINTENANCE WORK	<p>Risk of serious burns caused from hot coolant spraying. If the coolant is hot, opening the coolant expansion tank can spray hot coolant out.</p> <ul style="list-style-type: none"> Before removing the coolant expansion tank cap or working on the engine cooling system, wait for 30 minutes for the coolant temperature to drop enough.
	<p>Before carrying out work on the machine, the articulation safety prop should be placed between the two chassis bodies so the articulation is immobilized. See <i>'Immobilizing the Chassis'</i> in Chapter 4.</p>
AFTER MAINTENANCE WORK	<p>Once the adjustment or maintenance tasks are completed, place all protection devices in their original position.</p>
HYDRAULICS	<p>Before disconnecting the hydraulic hoses, identify or mark them so they may be reconnected correctly later.</p>
	<p>Risk of fluids spraying.</p> <ul style="list-style-type: none"> Before disconnecting fluid systems, make sure there is no pressure in them and take steps to avoid unexpected spills. See <i>'Depressurizing the Hydraulic Circuit'</i> in Chapter 8.
	<p>Risk of fire and explosions by using naked flames for fluid inspections. Never use a naked flame to check fluid levels and leaks.</p>





DANGEROUS AREAS AROUND THE MACHINE

During operation and use, there are dangerous areas around the machine.

Dangerous areas are determined as follows:

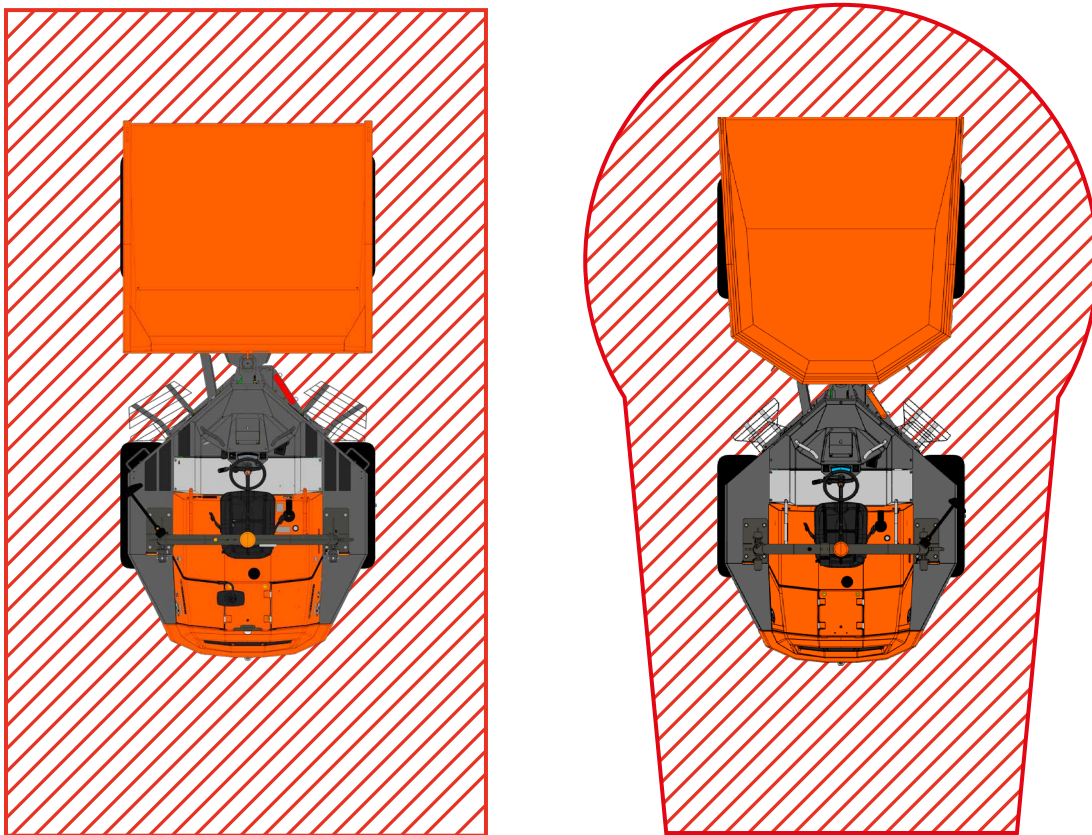
- Front and sides of the machine: 1 m.
- Rear of the machine: 2 m.

If there are people within these dangerous areas, or whenever someone could enter them imminently:

- Stop the machine and avoid using it.

⚠ WARNING Warn anyone located around the machine to keep away from dangerous areas during its use.

SWIVEL SKIP



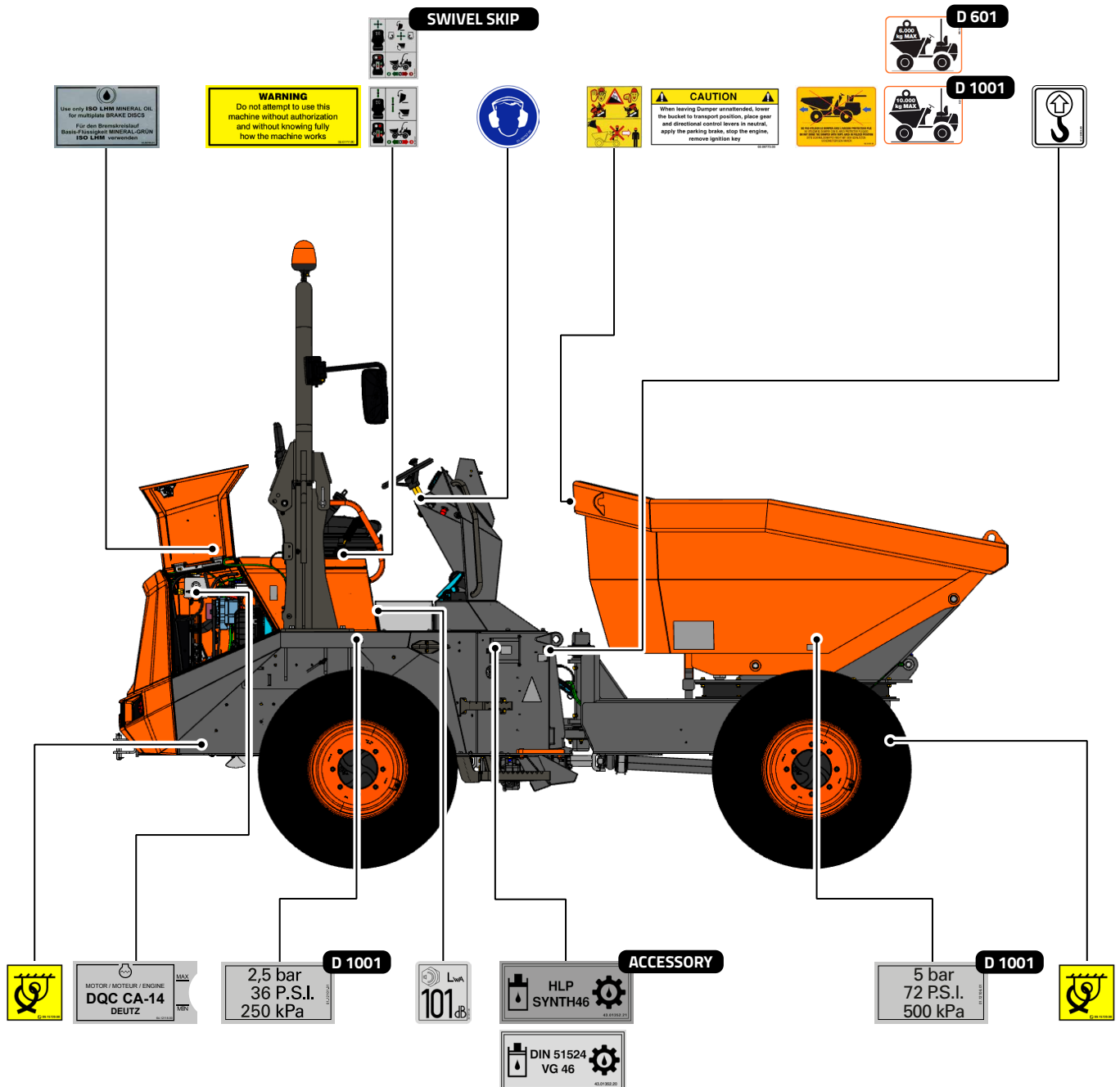
Dangerous Areas Around the Machine

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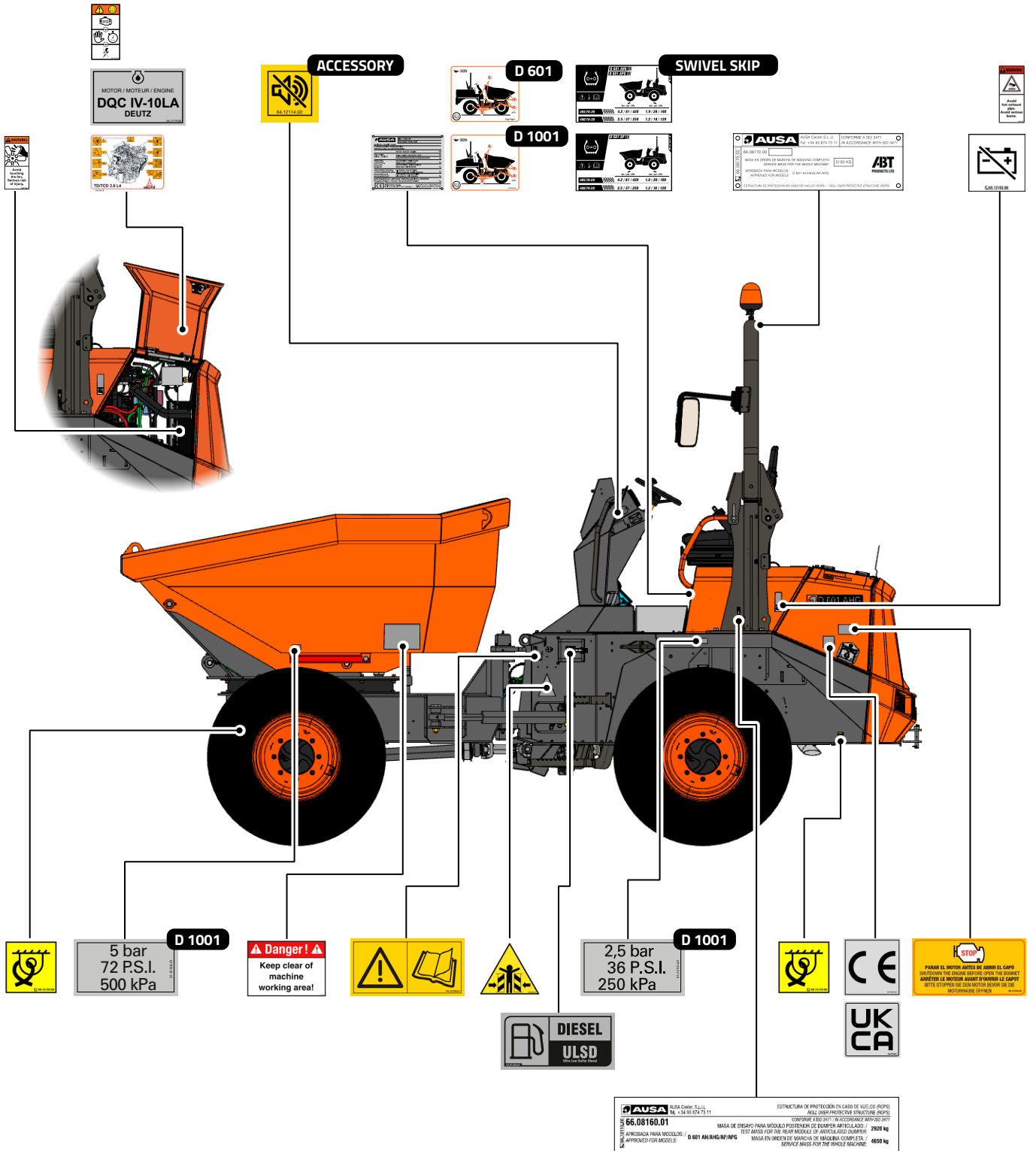




IDENTIFICATION PLATES AND DECALS

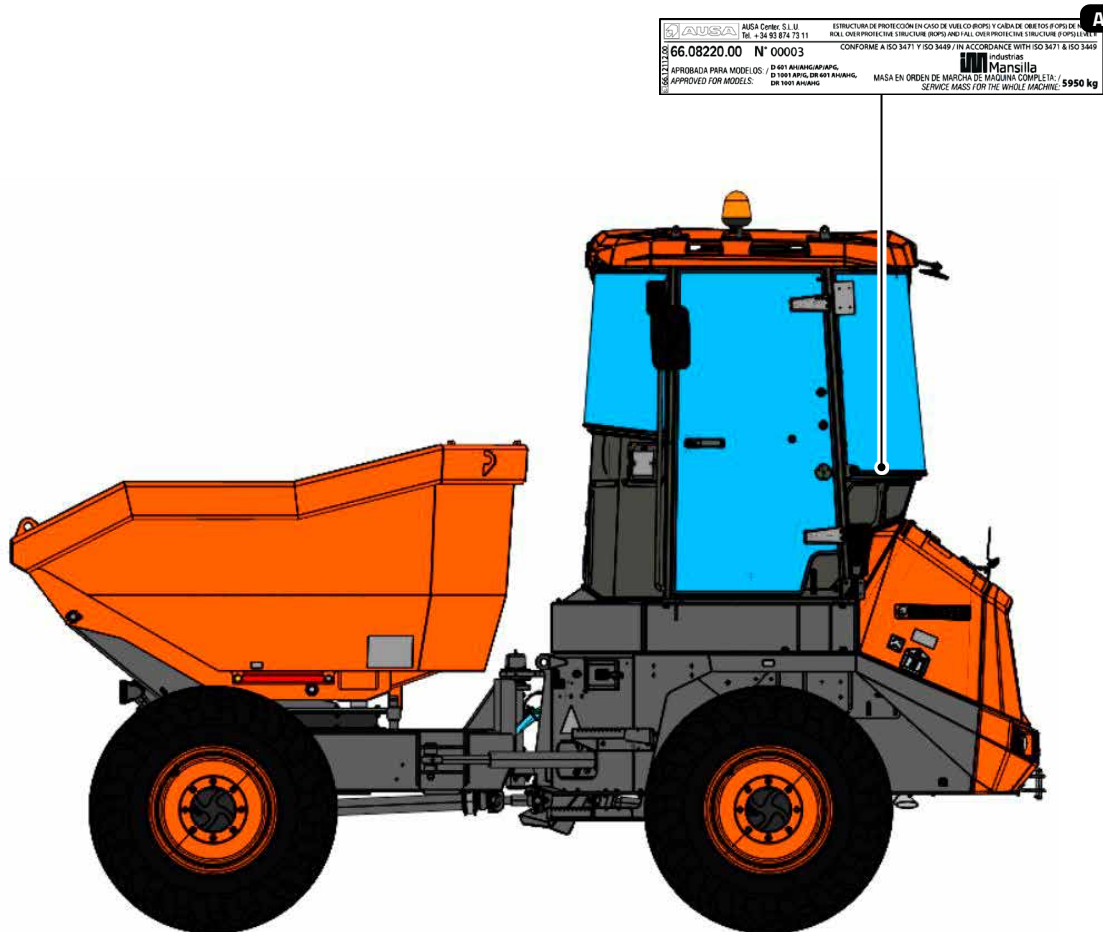


IDENTIFICATION PLATES AND DECALS

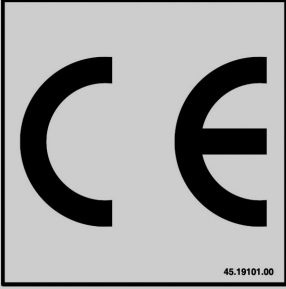
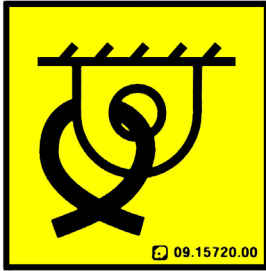

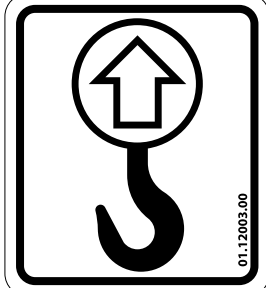

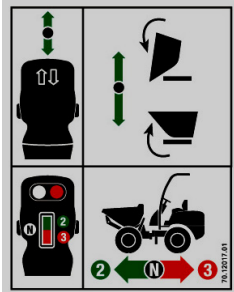

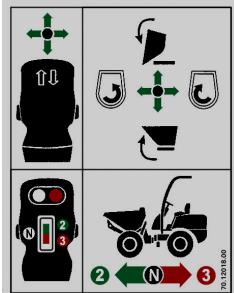




IDENTIFICATION PLATES AND DECALS



IDENTIFICATION PLATES AND DECALS

Plate	Description	Plate	Description
	EC marking indication (except machines being placed on non-EU market).		Provide information about the location of the tie-down points where the slings or chains are to be attached when anchoring the machine to a platform for transportation.
	UKCA marking indication (only machines being placed on the Great Britain market after Brexit).		Provide information about the location of the hoisting points where the slings or chains are to be attached when lifting the machine.
	Provide information about fuel specifications required.		Provide information about the operation of the joystick and the functionality of each component.
	Warn staff and provide information about the machine operation: <ul style="list-style-type: none"> Machine loaded direction of travel and max. gradient. Machine unloaded direction of travel and max. gradient. Avoid operation hazards in work area. Travel on smooth level ground. 		Provide information about the operation of the joystick and the functionality of each component. SWIVEL SKIP

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IDENTIFICATION PLATES AND DECALS

Plate	Description	Plate	Description
	<p>Provide information about:</p> <ul style="list-style-type: none"> Using ear protectors. 		<p>Provide information about inflation pressure of the front tyres (standard).</p> <p>D 1001</p>
	<p>Warn staff and provide information about chassis articulation crush zone.</p>		<p>Provide information about inflation pressure of the rear tyres (standard).</p> <p>D 1001</p>
	<p>Provide information about inflation pressure of the tyres. D 601 SWIVEL SKIP</p> <ul style="list-style-type: none"> All terrain Turf tire 		<p>Provide information about the guaranteed acoustic power in the workplace environment where the machine operates.</p>
	<p>Provide information about inflation pressure of the tyres. D 601</p> <ul style="list-style-type: none"> All terrain Turf tire Turf tire extra wide 		<p>Warn staff and provide information about persons other than the operator staying away from the machine while operating.</p>

IDENTIFICATION PLATES AND DECALS

Plate	Description	Plate	Description
<p>CAUTION When leaving Dumper unattended, lower the bucket to transport position, place gear and directional control levers in neutral, apply the parking brake, stop the engine, remove ignition key.</p>	Warn staff and provide information about machine shutdown procedure.	<p>WARNING Avoid hot exhaust pipe. Avoid serious burns.</p>	Warn staff and provide information regarding proximity to high temperature areas.
<p>WARNING Do not attempt to use this machine without authorization and without knowing fully how the machine works.</p>	Warn staff and provide information about before operating the machine.	<p>WARNING Avoid touching fan. Serious injury can result.</p>	Warn staff and provide information about proximity to rotating parts.
<p>DIN 51524 VG 46</p>	Provide information about the type of hydraulic oil required.	<p>AUSA S.A. S. L. U. - AUSA Canter S. L. U. Tel. +34 93 874 73 11</p> <p>ESTRUCTURA DE PROTECCIÓN EN CASO DE VUELCO (ROPS) / ROLL-OVER PROTECTIVE STRUCTURE (ROPS) CONFORME A ISO 3471 / IN ACCORDANCE WITH ISO 3471</p> <p>66.08166.01 - MASA EN ORDEN DE MARCHA DE MÁQUINA COMPLETA / SERVICE MASS FOR THE WHOLE MACHINE: 5150 KG</p> <p>APROBADA PARA MODELOS: D 801 AHKAS-AP-ARG / APPROVED FOR MODELS: D 801 AHKAS-AP-ARG</p> <p>ABT PRODUCTS LTD</p>	Roll Over Protective Structure (ROPS) information plate.
<p>HLP SYNTH46</p>	Provide information about the type of hydraulic oil required. ACCESSORY	<p>AUSA S.A. S. L. U. - AUSA Canter S. L. U. Tel. +34 93 874 73 11</p> <p>ESTRUCTURA DE PROTECCIÓN EN CASO DE VUELCO (ROPS) / ROLL-OVER PROTECTIVE STRUCTURE (ROPS) CONFORME A ISO 3471 / IN ACCORDANCE WITH ISO 3471</p> <p>66.08170.01 - MASA EN ORDEN DE MARCHA DE MÁQUINA COMPLETA / SERVICE MASS FOR THE WHOLE MACHINE: 5150 KG</p> <p>APROBADA PARA MODELOS: D 801 AHKAS-AP-ARG / APPROVED FOR MODELS: D 801 AHKAS-AP-ARG</p> <p>ABT PRODUCTS LTD</p>	Roll Over Protective Structure (ROPS) information plate.

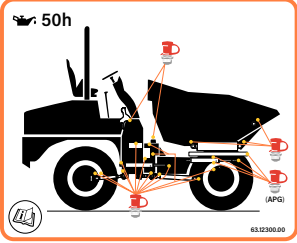



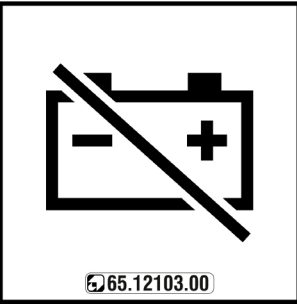

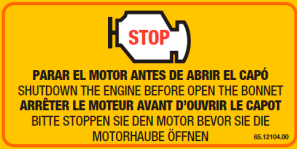

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IDENTIFICATION PLATES AND DECALS

Plate	Description	Plate	Description
	Provide information about the type of brake fluid and specifications and refers to the operator's manual.		Provide information about the type of engine coolant required and the expansion tank level.
	Machine identification plate.		Refers to the operator's manual.
	Deutz engine maintenance schedule.		Warn staff and provide information about the location of the battery master switch and disconnection delay.
	Provide information about the type of engine oil required.		Provide information about greasing points identification, schedule and refers to the operator's manual. D 601

IDENTIFICATION PLATES AND DECALS

Plate	Description	Plate	Description
	<p>Provide information about greasing points identification, schedule and refers to the operator's manual. D 1001</p>		<p>Provide information about the maximum payload of the machine. D 601</p>
	<p>Warn staff and provide information about not operating with the Roll Over Protective Structure (ROPS) folded down.</p>		<p>Provide information about the maximum payload of the machine. D 1001</p>
	<p>Provide information about the location of the battery master switch.</p>		<p>Provide information about the location of the FVS audible warning disable switch. ACCESSORY</p>
	<p>Warn staff and provide information about stopping the engine before opening engine compartment covers.</p>		<p>Cabin (ROPS/FOPS) information plate. ACCESSORY</p>

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GETTING TO KNOW THE MACHINE

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GETTING TO KNOW THE MACHINE

The machine is designed for moving earth using a skip. There are two types of skips:

- Front tipping skip.
- 180° swivel skip. **SWIVEL SKIP**

Depending on the payload that the machine is designed to withstand, there are two types:

- 6 tons. **D 601**
- 10 tons. **D 1001**

The machine can have two types of transmission:

- Hydrostatic. **HYDROSTATIC TRANSMISSION**
- Powershuttle. **POWERSHUTTLE TRANSMISSION**

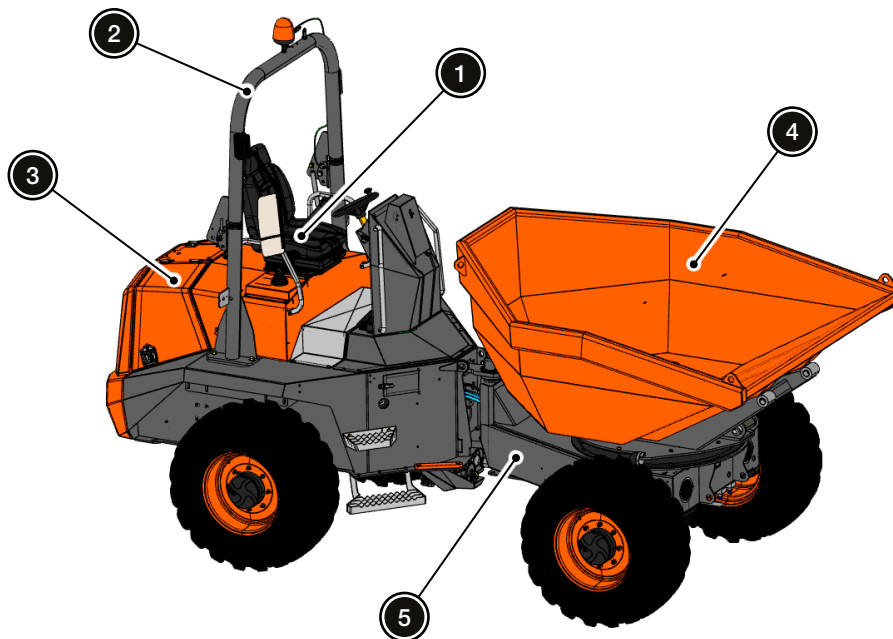
The engine can have a built-in particulate filter (DPF).

ENGINE WITH PARTICULATE FILTER (DPF)

In addition, the machine can be equipped with a ROPS/FOPS cab. **ACCESSORY**

Machine Parts

Item	Part
1	Seat
2	Roll Over Protective Structure (ROPS) Cab (ROPS/FOPS) ACCESSORY
3	Diesel engine
4	Skip
5	Chassis



Machine Parts

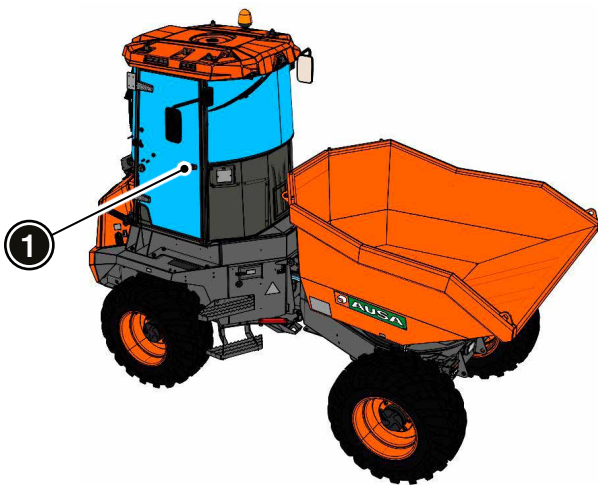
OPERATOR'S POSITION

Doors **ACCESSORY**

▲ CAUTION The doors have a gas strut to facilitate its opening. When opening the door, hold it with your hand to avoid a sudden opening as a result of the gas strut.

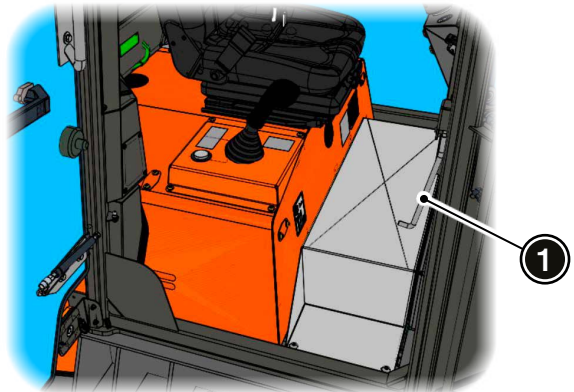
FROM THE OUTSIDE

Open the door using the lever (1).



PARTIAL OPENING OF THE DOOR

The doors have a rod (1), fixed into a clip on the cab frame, that allows it to be partially opened for ventilating the interior of the cab. To do so, release the rod from the clip.

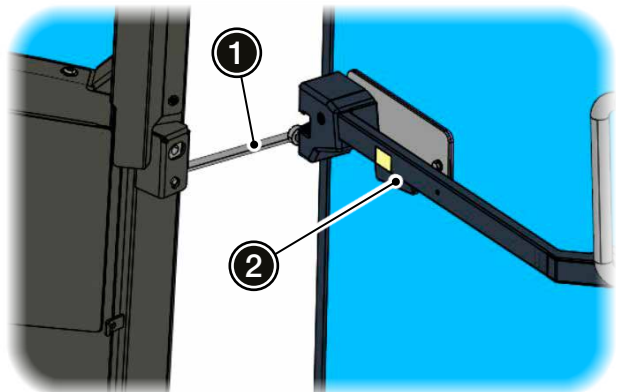
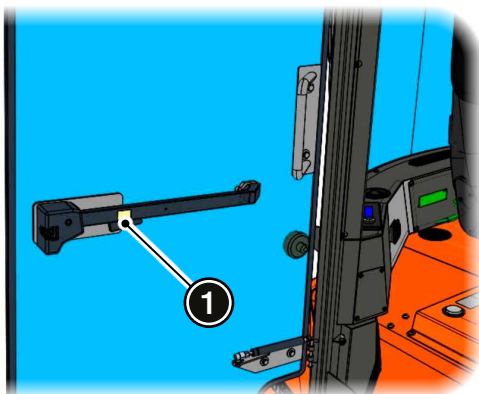


To lock the door, insert the rod (1) into the lock. To unlock it, use the handle (2).

Information: Reattach the rod in the clip in the frame of the cabin.

FROM THE INSIDE

Use the lever to unlock the door (1).

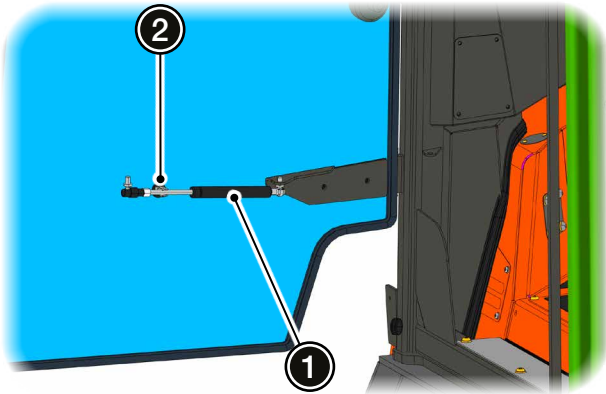




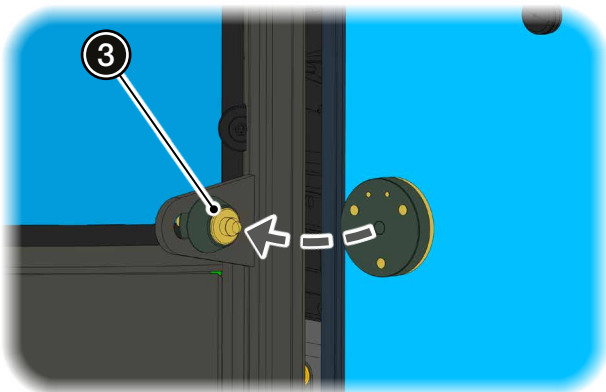
OPERATOR'S POSITION

COMPLETELY OPENING THE DOOR

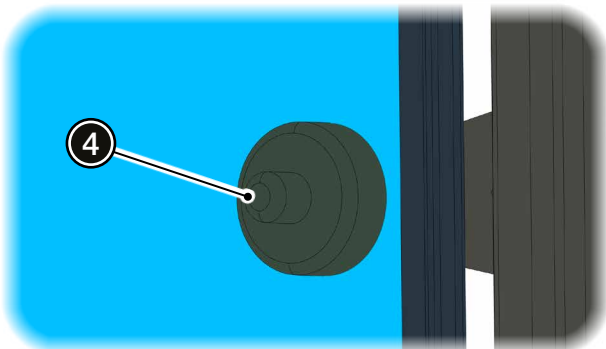
1. Release the gas strut (1), sliding the end that attaches it to the door. Later, attach the gas strut to the window clip (2).



2. Open the door completely to the stop (3).



3. To close the door, unlock it by pressing the button (4). Reattach the gas strut to the door by sliding the end.



Getting In and Out of the Machine

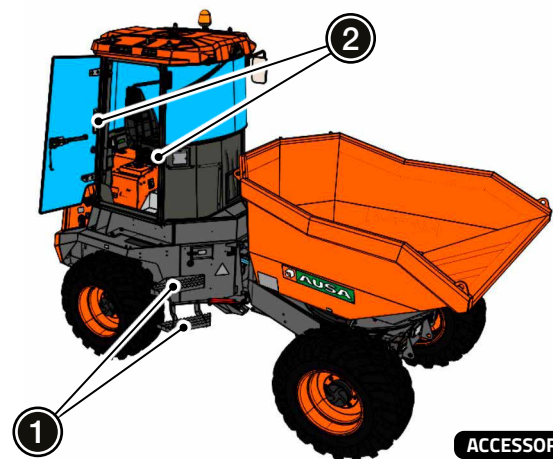
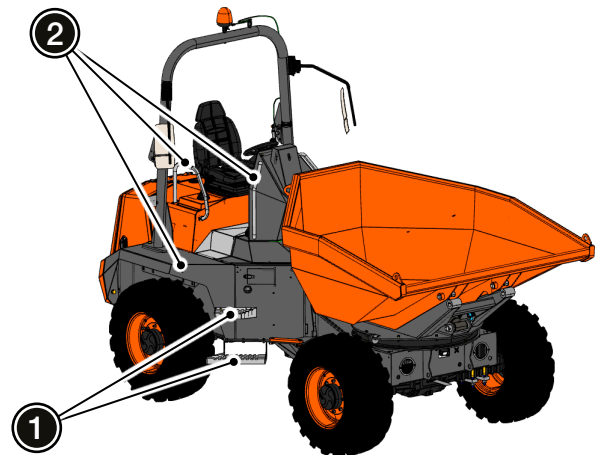
▲ WARNING Risk of serious injuries by grabbing or jerking the steering wheel get in and out of the machine.

- Get in and out of the operator's position without activating any part in the process.
- Never grab or jerk the steering wheel to get in and out of the machine.

▲ WARNING Risk of accident by using the machine with dirty or wet hands or shoes.

- Always check that your hands and the soles of your shoes are clean and dry before getting in/out of the machine.

The machine has steps (1) and handles (2) on both sides to facilitate operator access.



OPERATOR'S POSITION

Seatbelt

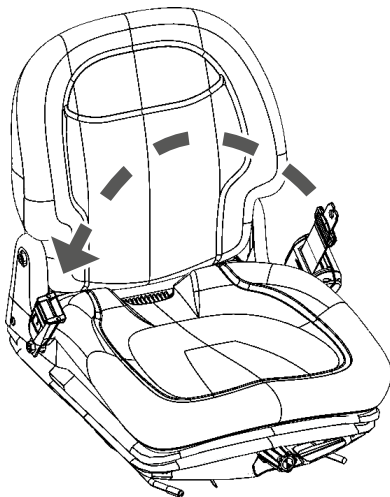
⚠ DANGER Risk of death or serious injuries by using the machine without seatbelt.

The seatbelt is an important part of the safety system. If the seatbelt is not fastened and the machine tips over, the driver may suffer serious injury or death as a result of being crushed.

- Always fasten the seatbelt before operating the machine.

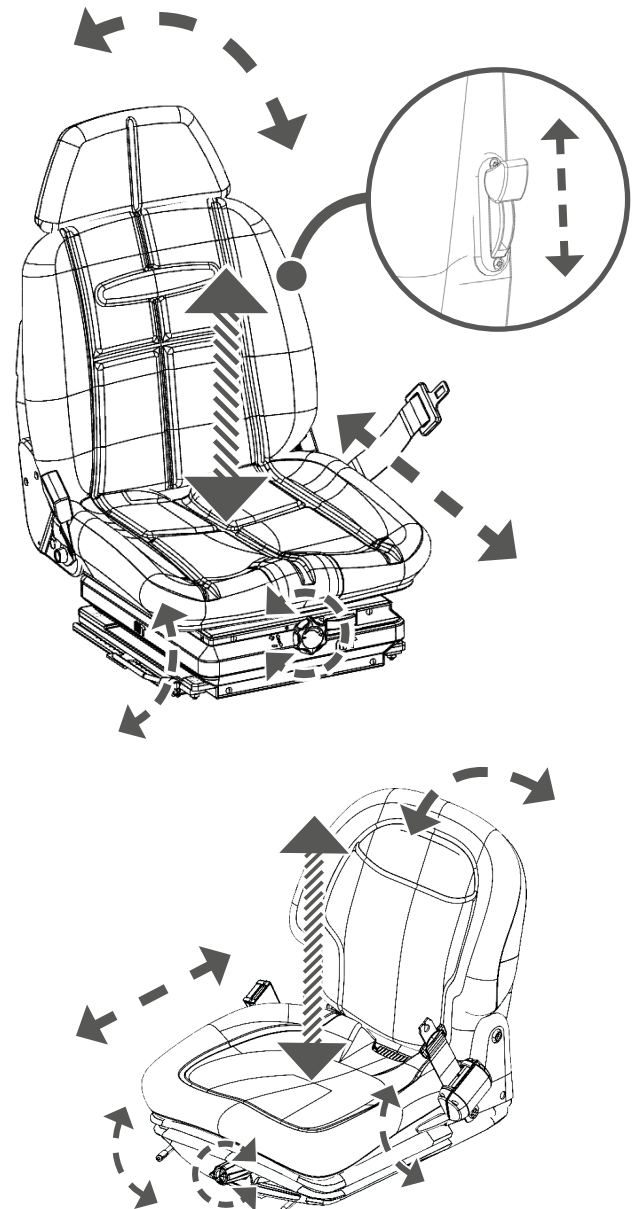
Information: If the machine is parked on a steep slope, the seatbelt roller may lock.

The machine's seatbelt is the roll-up type.



Seatbelt

Seat Adjustment



Adjust the Position and Suspension of the Seat

Information: The seat's suspension reduces impacts to the operator. For additional information on the vibration levels, see 'Specifications Chart' in Chapter 7.

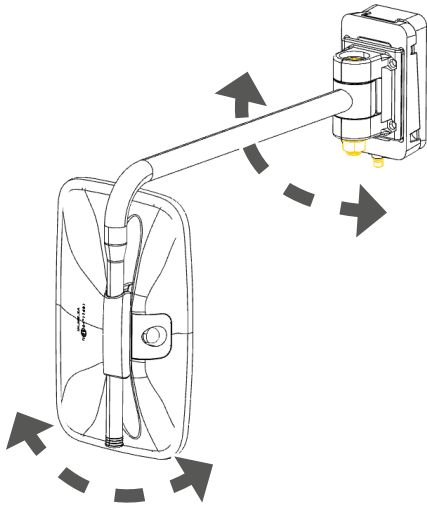
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OPERATOR'S POSITION

Adjust the Rear-View Mirrors

Information: Objects in rear-view mirrors are closer than they appear.



Adjust the Position of the Rear-View Mirrors

The machines equipped with a cab may have a mirror (1) that enables them to view the counterweight side.

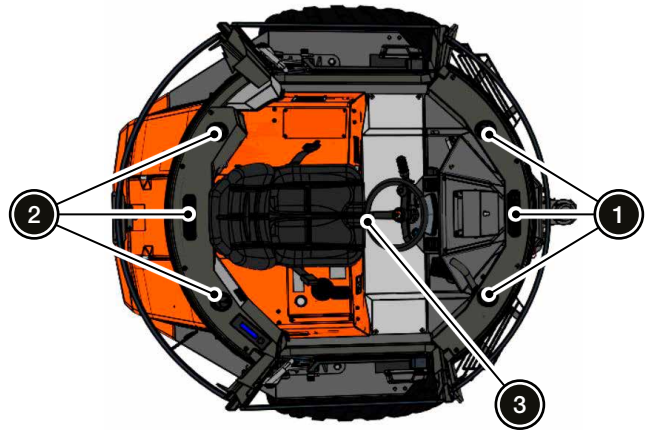
ACCESSORY



Adjustable Air Outlets

The cab features the following air outlets:

- 3 on the skip side (1).
- 3 on the counterweight side (2).
- 1 behind the legs (3).

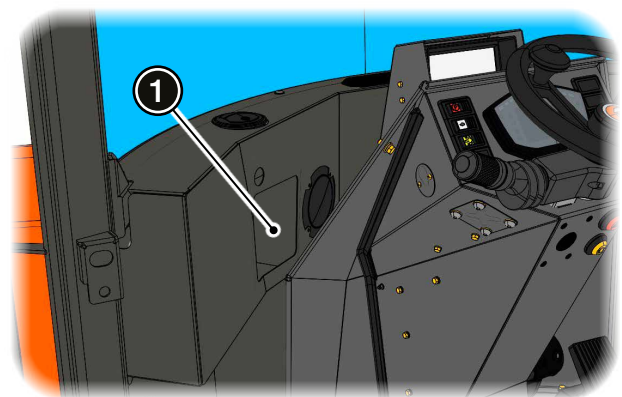


Using the adjustable fins, the air can be directed towards the corresponding window or towards the operator.

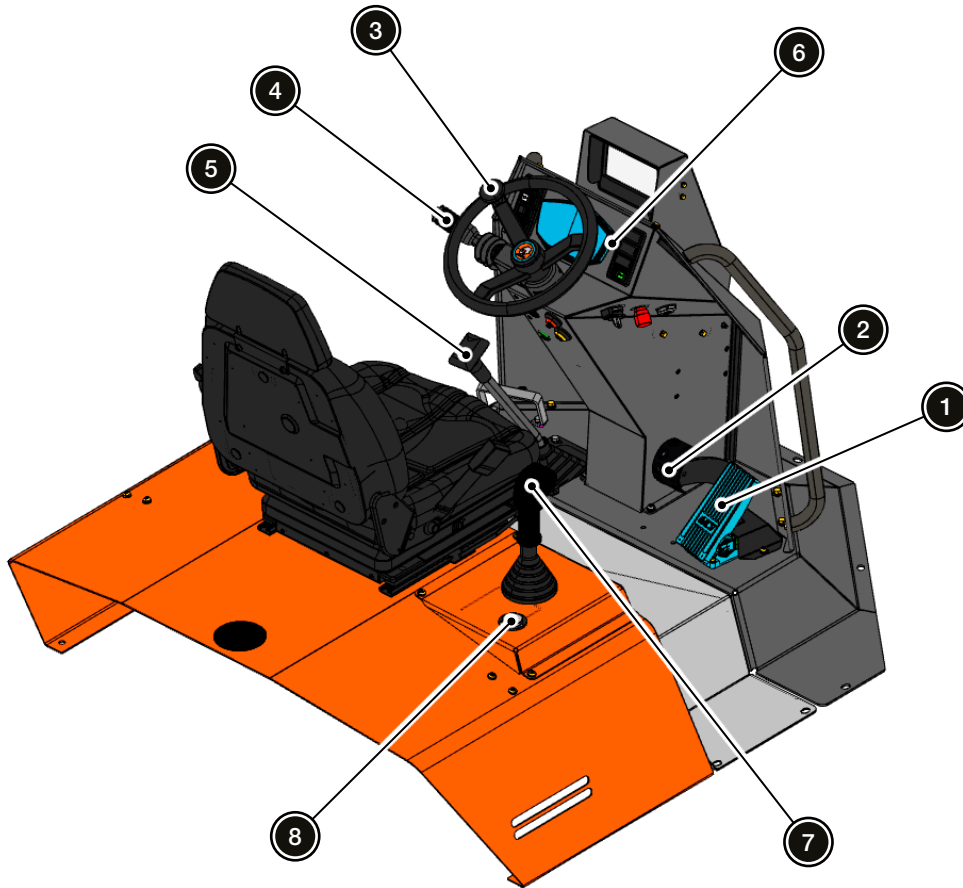
Information: At least one vent should be open when the interior cab fan is active.

Small Objects Compartment

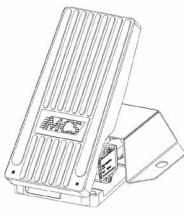
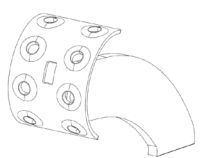
The machine has a compartment (1) to store small objects.



CONTROLS


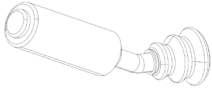
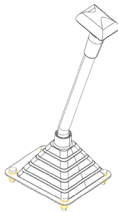
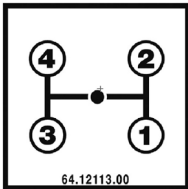



Control Panel

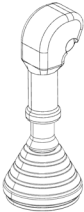
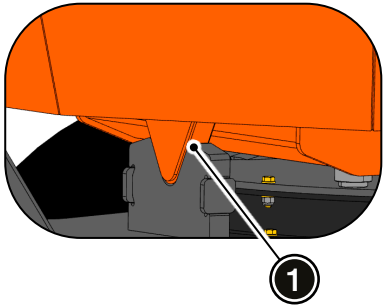
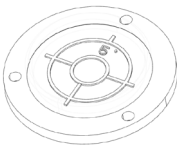
Item	Part	Figure	Description
1	Accelerator pedal		Used to increase the revolutions of the diesel engine. Releasing it reduces the revolutions to idle speed.
2	Brake pedal		Used to activate the brakes proportionally.



CONTROLS

Item	Part	Figure	Description
3	Steering wheel		Used to drive the steering of the machine, turning the articulation of the chassis towards the left or right.
4	Multifunction lever ACCESSORY		<p>Allows the following elements of the machine to be controlled:</p> <ul style="list-style-type: none"> ▪ Horn: Activated by pressing the switch on the end on the lever. ▪ Side direction lights: Push the lever forward or backwards to activate the right or left side direction. ▪ Lighting equipment operation: Twist the knob on the end of the lever. There are three positions: <ul style="list-style-type: none"> ▪ Lights off. ▪ Sidelights. ▪ Low beam. ▪ Pushing down the lever activates the high beam. ▪ Pulling up the lever activates the passing signal.
5	Gear lever POWERSHUTTLE TRANSMISSION	 	<p>The operator can select one of the four gears of the machine.</p> <p>The clutch is a push button located at the bottom of the handle.</p> <p>NOTICE Risk of transmission failure by using the gear lever without the clutch.</p> <ul style="list-style-type: none"> ➤ Do not use the gear lever without pushing the button located at the lower part of the handle.
6	Control panel		See 'Control Panel'.

CONTROLS

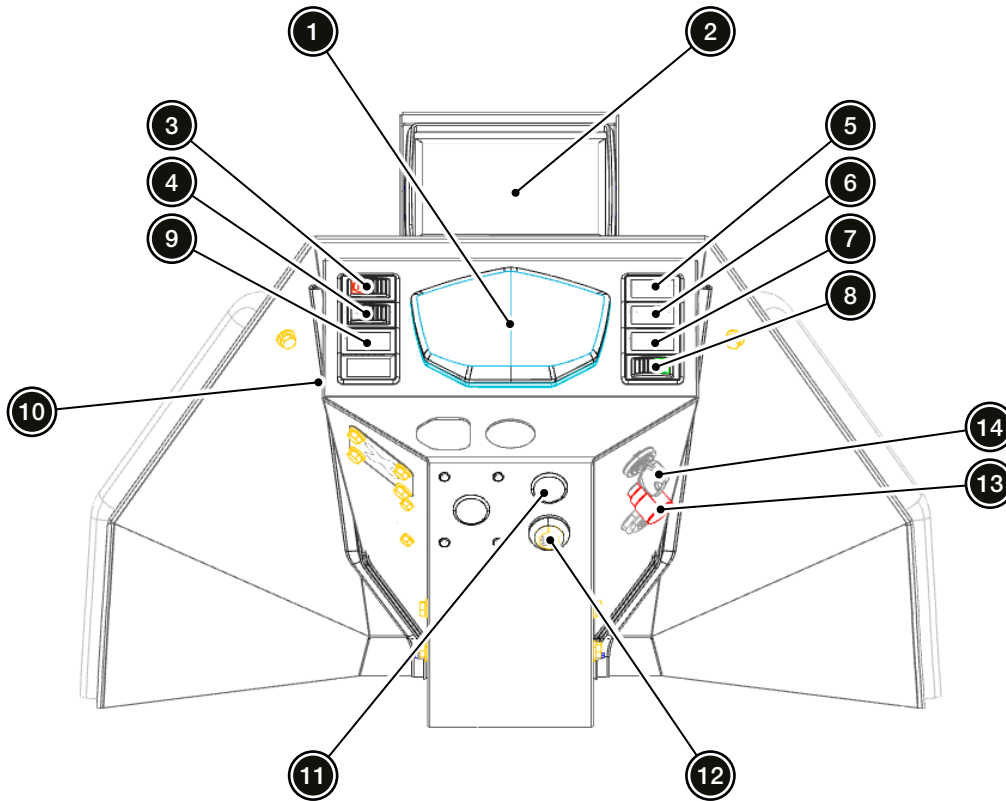
Item	Part	Figure	Description
7	Joystick		<p>Allows the following machine functions to be controlled:</p> <ul style="list-style-type: none"> Travel selector (FNR). The direction of travel is chosen by a switch located on the lower part of the joystick handle. The selected direction of travel is displayed on the top of the joystick and the HMI screen: <ul style="list-style-type: none"> FORWARD: Forward arrow. NEUTRAL: Arrows off. REVERSE: Reverse arrow. <p>Information: See 'Machine Orientation' in Chapter 1.</p> <ul style="list-style-type: none"> Skip movements. <ul style="list-style-type: none"> Forward/Backwards: Used to raise or lower the skip. Left/Right: Used to swivel the skip. SWIVEL SKIP <p>NOTICE Before swivelling the skip, raise it to take out the center lock (1). Also, when lowering the skip, try to center it as much as possible so that it inserts correctly in the central lock.</p>  <ul style="list-style-type: none"> Diagnostics on the HMI screen. Yellow button located on the lower part of the joystick handle. <p>Information: Only for technical assistance service. See 'Diagnostics Display' in Chapter 5.</p> <ul style="list-style-type: none"> Rotating green beacon disconnection. ACCESSORY Yellow button located on the lower part of the joystick handle. Allows the disconnection of the green rotating beacon when the seatbelt is fastened. To disconnect, press it down for 5 seconds.
8	Bubble level		<p>To control the inclination of the machine at all times and avoid exceeding the operation limits, as specified in 'During Operation', in Chapter 2.</p> <p>Information: There are two marks for 3° and 5° spaced apart.</p>

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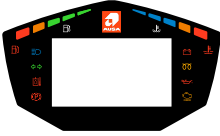
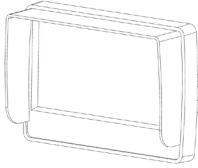
CONTROLS

Control Panel










Control Panel

Information: All switches are backlit, so they can be easily identified in low-light conditions.

Item	Part	Figure	Description
1	HMI screen		See 'HMI Screen'.
2	FVS screen		Activated when the following conditions are met: <ul style="list-style-type: none"> ▪ Ignition switch in IGNITION position. ▪ Forward or reverse travel activated. ▪ Parking brake is released. For more information, see 'FVS Screen'.

CONTROLS

Item	Part	Figure	Description
3	Parking brake		Used to apply the parking brake, it has two positions: <ul style="list-style-type: none"> Released. Applied. While it is applied, the switch remains on.
4	Engine malfunction push button		Comes on when it detects some engine failure. Contact AUSA authorized dealer.
5	Smart-Stop push button ACCESSORY		See 'Smart-Stop' in Chapter 9.
6	Work lights switch ACCESSORY		Used to apply the work lights, it has two positions: <ul style="list-style-type: none"> Off. On. While they are on, the light remains on. Information: The sidelights switch on automatically when the work lights are activated.
	Joystick lock switch ACCESSORY		Locks the movement of the joystick; it has two positions: <ul style="list-style-type: none"> Unlocked Locked While it is locked, the switch light remains on. Information: In machines with lighting equipment, this switch will be placed in position n° 8.
7	Reverse travel alarm switch ACCESSORY		Used to deactivate the reverse travel alarm, only if the lighting system is activated; it has two positions. <ul style="list-style-type: none"> On. Off. While the warning alarms is off, the switch light remains on.
8	Horn button		When pressed, the horn sounds.

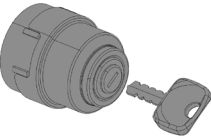




CONTROLS

Item	Part	Figure	Description
9	Particulate filter (DPF) regeneration with the machine is stationary push button. ENGINE WITH PARTICULATE FILTER (DPF)		Used to start the particulate filter (DPF) regeneration function with the machine stationary. See 'Regeneration with the Machine Stationary' in Chapter 5.
10	Acoustic warning for FVS proximity sensors switch ACCESSORY		Used to switch off the proximity sensors acoustic warning.
11	Hazard lights switch ACCESSORY		Used to switch on the hazard lights (the indicators lights activate simultaneously). While it is activated, the switch flashes.
12	Rotating beacon switch		Used to switch on the rotating beacon. While it is activated, the switch light remains on.
13	Emergency push button		Used to stop the diesel engine in case of emergency. <ul style="list-style-type: none"> Press to activate. To deactivate it, rearm the button turning it counterclockwise. <p>Information: Before starting the machine again, identify the cause of the emergency stop.</p> <p>▲ WARNING Risk of accident when using the emergency button with the machine traveling.</p> <p>The emergency button applies the parking brake regardless of the speed of travel of the machine.</p>

CONTROLS

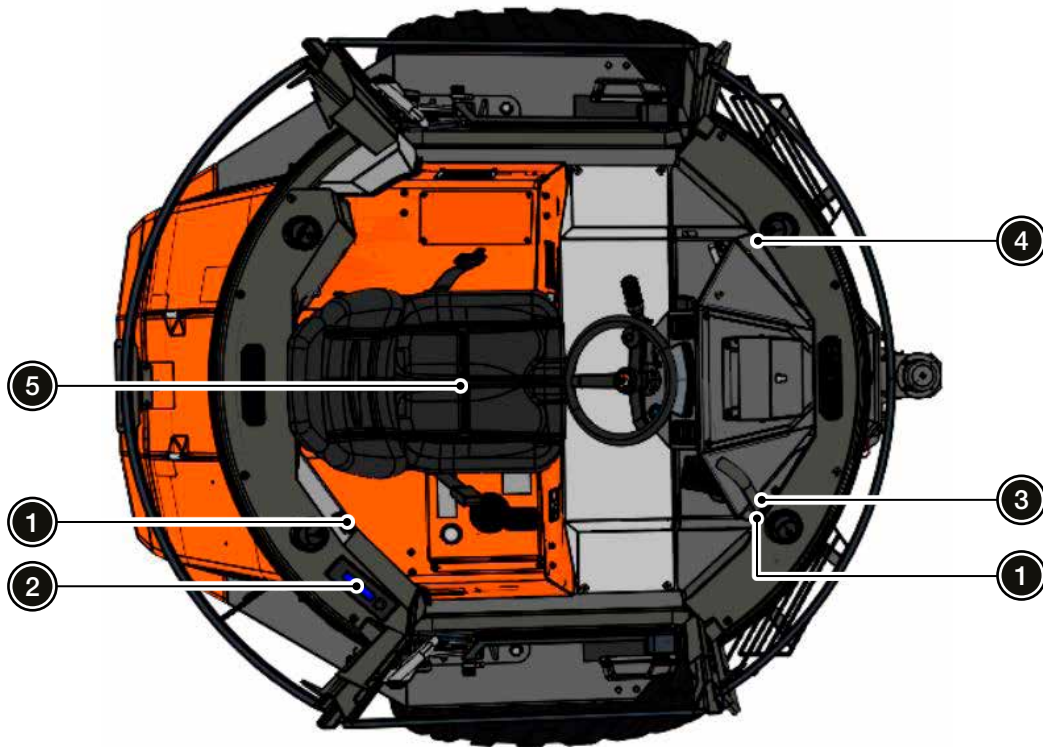
Item	Part	Figure	Description
14	Ignition switch		<p>It has four positions:</p> <ul style="list-style-type: none"> ▪ Parking (P). ▪ Stop (O). ▪ Ignition (I). ▪ Start (II). <p>Information: The PARKING (P) position has been designed so the machine can be parked, with the sidelights on and the key removed from the ignition. This is not possible in the STOP (O) position.</p> <p>When the PARKING (P) position is selected, the sidelights switch on automatically, regardless of the position of the multifunction lever ACCESSORY. An intermittent acoustic warning is also activated to remind the operator that the lights are activated and the battery might run out.</p>

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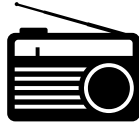
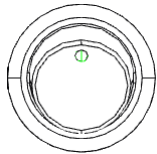
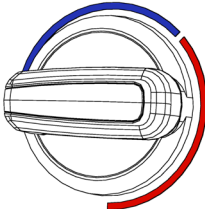
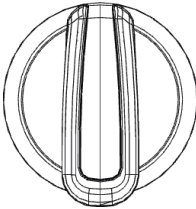

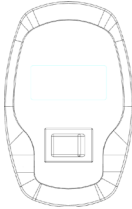
CONTROLS

Cab **ACCESSORY**



Item	Part	Figure	Description
1	Windscreen wipers switch ACCESSORY		Used to activate the corresponding windscreen wipers; it has three positions: <ul style="list-style-type: none"> Off and return to start. On at slow speed. On at fast speed <p>Information: There are two switches, each one activates the corresponding windscreen wipers (the wipers relating to the skip side or counterweight side).</p>
	Windscreen wipers button ACCESSORY		Activates the corresponding windscreen washer water pump. <p>Information: There are two switches, each one activates the corresponding windscreen washer (the washers relating to the skip side or counterweight side).</p>

CONTROLS

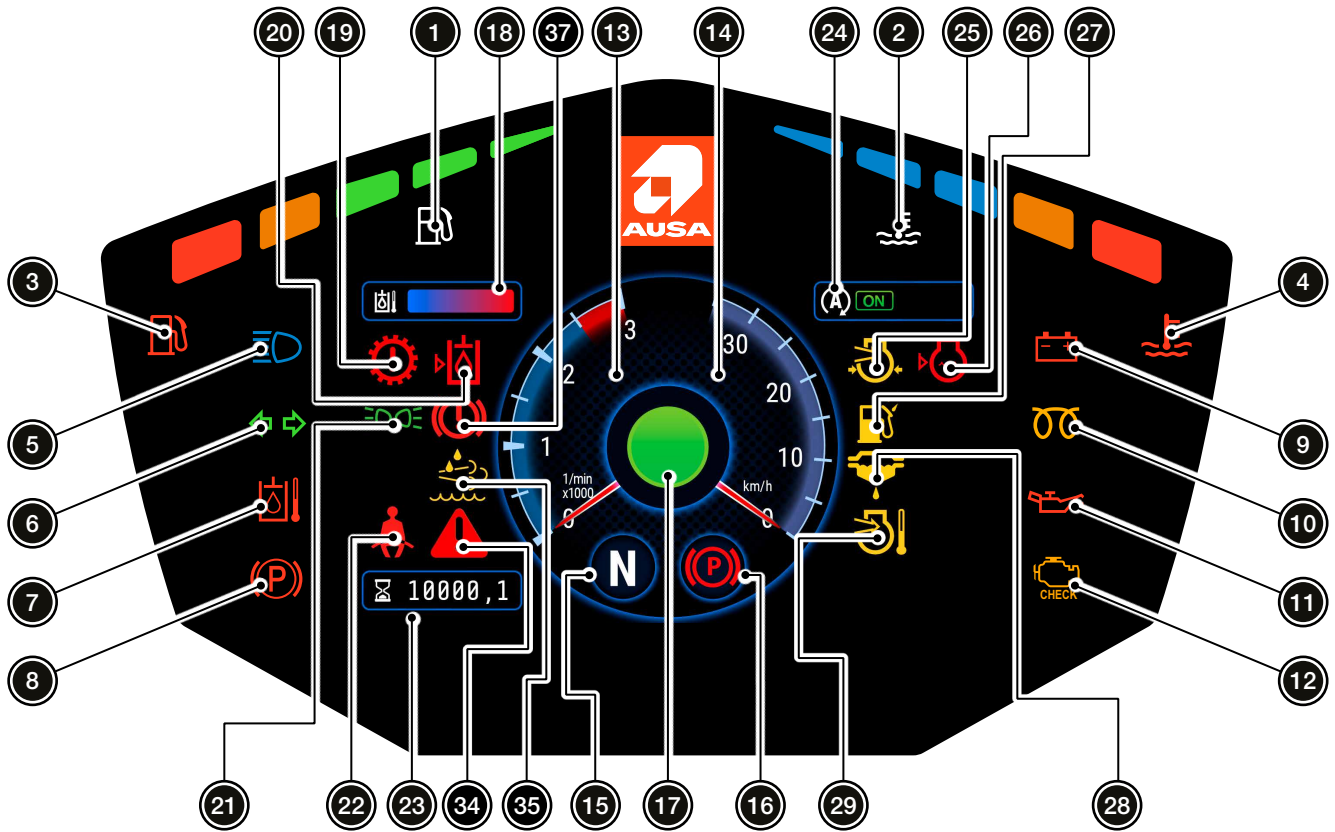
Item	Part	Figure	Description
2	Radio ACCESSORY		Information: For more information about operating this device, check the manufacturer's manual supplied with this operator's manual.
3	Air conditioning switch ACCESSORY		Used to activate the air-conditioning system; it has two positions: <ul style="list-style-type: none"> On. The switch light will remain on while it is active. <ul style="list-style-type: none"> Off. Information: The 'Fan Inside the Cab' (20) must be activated and the 'Heating Temperature Control' (19) must be in the 'Cold' position before the air-conditioning system is activated.
	Air temperature control ACCESSORY		Used to control the fan air temperature, allowing the temperature to be adjusted from cold to warm.
	Cab interior fan selector ACCESSORY		Used to control the cab interior fan; it has four positions: <ul style="list-style-type: none"> Fan off (0). First speed setting (1). Second speed setting (2). Third speed setting (3).
4	12 V Power socket ACCESSORY		12 V power socket. Information: Maximum power: 120 W.
5	Courtesy light switch ACCESSORY		Used to activate the courtesy light; it has three positions: <ul style="list-style-type: none"> Constantly on. Off. On when the doors are opened.





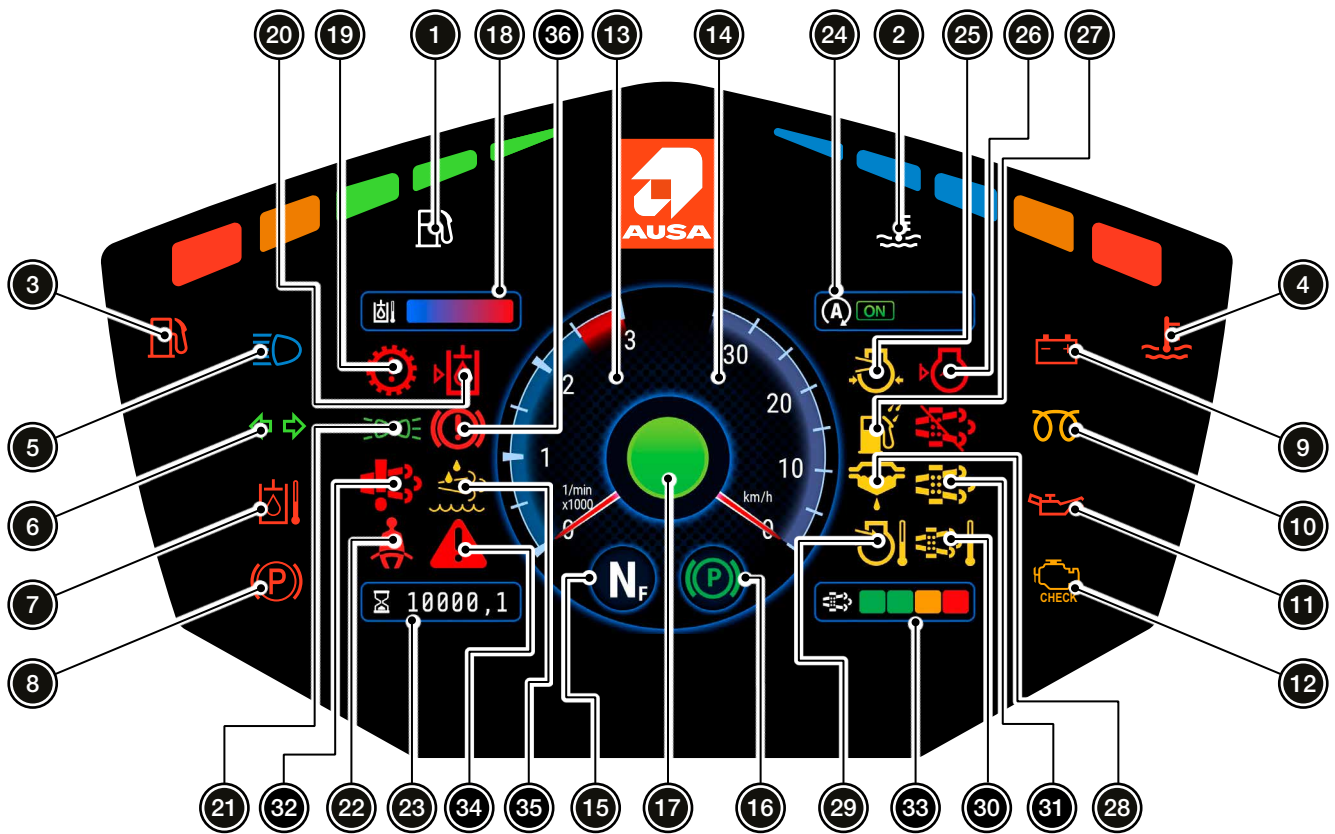
CONTROLS

HMI Screen



HMI Display ENGINE WITHOUT PARTICULATE FILTER (DPF)

CONTROLS












HMI Display ENGINE WITH PARTICULATE FILTER (DPF)










CONTROLS

Item	Part	Figure	Description
1	Fuel level		Shows the fuel level in the tank. If it is too low, the 'Low Fuel Level' indicator (3) switches on.
2	Coolant temperature		Shows the coolant temperature. If it is too high, the 'High Coolant Temperature' indicator (4) switches on.
3	Low fuel level		Switches on when the fuel level in the tank is too low, and it flashes when it reaches a critical level. Refuel following the indications in section 'Refueling' in Chapter 4.
4	High coolant temperature		Switches on when the coolant temperature is too high. When the engine is running, a flashing warning icon appears in the center of the screen, and a continuous acoustic warning sounds. If this happens, proceed as instructed in 'Engine Overheating' in Chapter 5.
5	High-beam headlights		Switches on when the high beam is on.
6	Indicators		Flashes when the side direction lights are activated. When the flashing is too fast, this indicates that a light is not operating correctly.
7	High hydraulic oil temperature		Switches on when the temperature of the hydraulic oil is too high. When the engine is running, a flashing warning icon appears in the center of the screen, and a continuous acoustic warning sounds. Clean the radiators following the indications in 'Basic Maintenance Every 50 Hours' in Chapter 8.
8	Parking brake		Switches on when activating the 'Parking brake' switch.
9	Battery charge		Switches on when the battery is not being charged. Contact AUSA authorized dealer.





CONTROLS

Item	Part	Figure	Description
10	Cold start system		Switches on when the cold start system is in operation. Start the engine when this indicator has switched off.
11	Diesel engine oil pressure		Switches on with low diesel-engine oil pressure. When the engine is running, a flashing warning icon appears in the center of the screen, and a continuous acoustic warning sounds. Stop the engine immediately and refill following the indications in 'Refilling Engine Oil' in Chapter 8. Information: This light does not come on when the ignition switch is in the IGNITION position and the engine is off.
12	Check engine malfunction		Switches on when it detects an engine failure, together with the 'Check Engine Malfunction Push Button' light. Contact AUSA authorized dealer.
13	Tachometer		Shows the engine revs in rpm and indicates the safe operational areas. See 'ECO Mode' to know the limitation of the engine revs.
14	Speedometer		Shows the speed of the machine in km/h or mph (depends on the market). See 'ECO Mode' to know the speed limit.



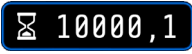










CONTROLS

Item	Part	Figure	Description
15	Forward NEUTRAL Reverse		<p>Shows the selected direction of travel:</p> <ul style="list-style-type: none"> FORWARD: Forward arrow. NEUTRAL: "N". REVERSE: Reverse arrow. <p>Information: The arrow indicators on the top part of the joystick handle only indicate the travel selector position.</p> <p>To see the FORWARD/REVERSE arrows on the HMI screen, the following conditions must be met:</p> <ul style="list-style-type: none"> Parking brake released. Operator seated on the seat. <p>Otherwise, the icon displayed on the HMI screen is the NEUTRAL one, regardless of the direction of travel selection.</p> <p>Information: After the engine starts, the parking brake is applied and released, or the operator leaves the machine while a direction of travel is selected, NEUTRAL must be selected to reengage forward or reverse travel.</p>
16	Parking brake		<p>Indicates that the parking brake is applied; it has two operating modes:</p> <ul style="list-style-type: none"> Red icon: The operator has applied the parking brake. Green icon: The machine has automatically applied the parking brake (hill-holder function).
17	ECO Mode		<p>Symbol indicating that the machine automatically activates the ECO Mode (below 17 km/h). The engine does not exceed 1,750 rpm.</p>
18	Hydraulic oil temperature		<p>Indicates the temperature of the hydraulic oil. If it is too high, the 'High Hydraulic Oil Temperature' indicator (7) switches on.</p>
19	Transmission failure HYDROSTATIC TRANSMISSION		<p>Indicates the need for a diagnosis of the transmission's ECU. Contact AUSA authorized dealer.</p>
20	Low hydraulic oil level		<p>Switches on when the oil level of the hydraulic oil tank is too low. When the engine is running, a flashing warning icon appears in the center of the screen, and a continuous acoustic warning sounds. Refill following the indications in 'Refilling Hydraulic Oil' in Chapter 8.</p>




CONTROLS

Item	Part	Figure	Description
21	Sidelights on ACCESSORY		Switches on when the sidelights are activated.
22	Seatbelt		Switches on when the presence of the operator is detected on the seat and the seatbelt is unfastened. When driving at more than 3 Km/h without the seatbelt fastened, a flashing warning icon appears in the center of the screen, and a continuous acoustic warning sounds. Below this speed, there is no flashing warning icon or acoustic warning.
23	Hours of service		Indicates the period of time the operator has been using the machine.
24	Smart-Stop ACCESSORY		Indicates the Smart-Stop state. Its operation is explained under 'Smart-Stop' in Chapter 9.
25	Air filter clogged		Switches on when the air filter has become clogged. Proceed following the indications in 'Replacing or Cleaning the Air Filter' in Chapter 8.
26	Coolant level		Switches on when the coolant level is too low. When the engine is running, a flashing warning icon appears in the center of the screen, and a continuous acoustic warning sounds. Refill following the indications in 'Refilling Coolant' in Chapter 8.
27	Water in the fuel		Switches on when water is present in the fuel. When the engine is running, a flashing warning icon appears in the center of the screen. Drain the water following the indications in 'Drain the Fuel Prefilter Water' Chapter 8.
28	Low fuel pressure		Switches on when the fuel pressure in the engine is too low. When the engine is running, a flashing warning icon appears in the center of the screen. Information: If the fuel pressure is too low, the starter motor may not turn over and the machine will not start. Contact AUSA authorized dealer.
29	Inlet air temperature		Switches on when the inlet air temperature is too high. Contact AUSA authorized dealer.


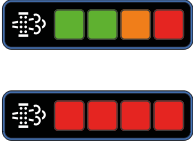













CONTROLS

Item	Part	Figure	Description
30	High exhaust gas temperature ENGINE WITH PARTICULATE FILTER (DPF)		Lights Up (Steady Light) When The Exhaust Gases Have Reached A Temperature That Allows The Regeneration Of The Particulate Filter (Dpf). See ' <i>Regeneration with the Machine Stationary</i> ' in Chapter 5.
31	Regeneration required with the machine stationary ENGINE WITH PARTICULATE FILTER (DPF)		Lights up (flashing light) when the regeneration of the particulate filter (DPF) needs to be performed with the machine stationary. See ' <i>Regeneration with the Machine Stationary</i> ' in Chapter 5.
32	Required maintenance ENGINE WITH PARTICULATE FILTER (DPF)		Lights up indicating the particulate filter (DPF) requires cleaning or replacing. When the engine is running, appears a flashing warning icon with the message "DPF ASH CLEANING REQUIRED" appears in the center of the screen, and a continuous acoustic warning sounds. Contact AUSA authorized dealer.

CONTROLS

Item	Part	Figure	Description
33	<p>Saturation indicator</p> 		<p>Indicates the saturation level of the particulate filter (DPF).</p> <ul style="list-style-type: none"> Green icon (1): Normal operation. Green icon (2): Automatic regeneration in progress. Orange icon: Particulate filter (DPF) regeneration required with the machine stationary. The indicator <i>'Regeneration Required with the Machine Stationary'</i> lights up  (flashing light). <p>If the <i>'Warning'</i> indicator also lights up  yellow (steady), an acoustic warning sounds and engine power is significantly limited, this means that the particulate filter (DPF) urgently requires regeneration while the machine stationary.</p> <p>See <i>'Regeneration with the Machine Stationary'</i> in Chapter 5.</p> <ul style="list-style-type: none"> Red icon: Particulate filter (DPF) regeneration required with service tool. The indicator <i>'Regeneration Required with the Machine Stationary'</i> lights up  (rapidly flashing light). <p>In addition, the <i>'Warning'</i> indicator lights up  red (flashing light) and an acoustic warning sounds. The engine power is restricted.</p> <p>Contact the official AUSA dealer.</p> <ul style="list-style-type: none"> All icons in red (flashing): The particulate filter (DPF) needs to be replaced. The indicator <i>'Regeneration Required with the Machine Stationary'</i> lights up  (steady). <p>In addition, the <i>'Warning'</i> indicator lights up  red (flashing light) and an acoustic warning sounds. The engine power is restricted.</p> <p>Contact the official AUSA dealer.</p>
34	Warning		Lights up red or yellow (depending on importance) to emphasize a system's warning condition.
35	EGR Malfunction		Switches on when it detects a malfunction in the EGR valve. Contact the official AUSA dealer.
36	Brake fluid level ACCESSORY		Switches on when the brake fluid level is too low. See <i>'Refill Brake Fluid'</i> in Chapter 8.

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CONTROLS

FVS Screen

The FVS comprises two systems:

- Visualization (cameras and screen).
- Proximity sensors. **ACCESSORY**

⚠ WARNING Risk of accident by careless driving.

It is possible that the proximity sensors system does not detect thin or low objects, materials that absorb sound (snow, cotton, foam rubber) or objects located below the counterweight.

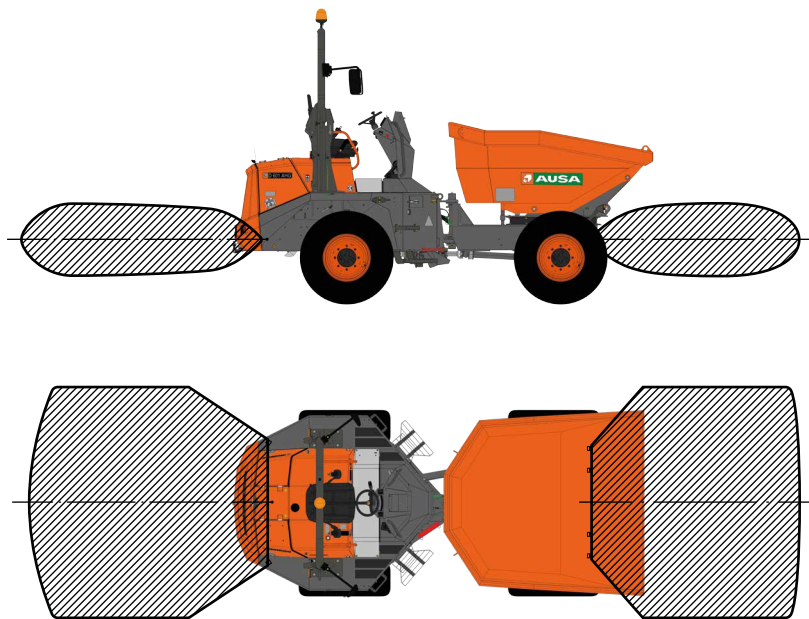
The proximity sensors system informs that an obstacle has been detected by flashing the appropriate asterisk and emitting an acoustic signal with a voice message. The flashing frequency increases the closer the obstacle becomes to the sensor.

The voice warnings are always in English.

Information: The guidance grid may not reflect the reality due to the position of the camera and its lens.

The objects within the camera's field of vision might be closer or further away than they appear.

The standard machine is equipped only with the camera on the skip side. The proximity sensors and the counterweight side camera may be installed as an accessory. **ACCESSORY**



FVS Range

CONTROLS







FVS Screen

Item	Part	Figure	Description
1	Distance to the obstacle		Indicates the distance to the obstacle as detected by the sensors and corresponding to the image displayed on the screen.
2	Active sensor		Flashes when the corresponding sensor detects an obstacle.
3	Activation/ deactivation		<p>Is used to activate and deactivate the screen.</p> <ul style="list-style-type: none"> When selecting a direction of travel, the appropriate camera is displayed on the screen, regardless of whether the screen is on or off: <ul style="list-style-type: none"> FORWARD: Skip side camera. REVERSE: Counterweight side camera. ACCESSORY With the travel selector (FNR) in NEUTRAL, the screen displays the latest selection made by the operator: <ul style="list-style-type: none"> Screen activated: Skip side camera. Screen deactivated.
4	Increase brightness Modify value		<ul style="list-style-type: none"> On the FVS screen: Used for increasing the screen brightness. In the FVS menu: It allows the operator to modify the value of the selected parameter.

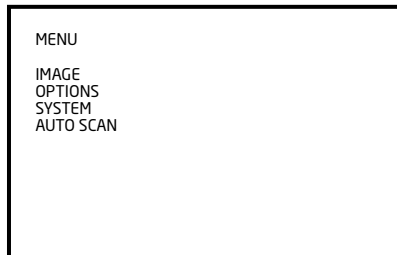


CONTROLS

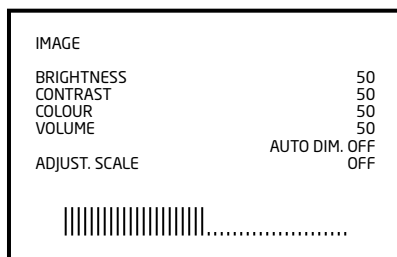
Item	Part	Figure	Description
5	Reduce brightness Modify value		<ul style="list-style-type: none"> On the FVS screen: Used for decreasing the screen brightness. In the FVS menu: It allows the operator to modify the value of the selected parameter.
6	Guidance grid Menu downwards		<ul style="list-style-type: none"> On the FVS screen: Used to toggle the display of the guidance grid. In the FVS menu: Used for going down, sequentially, through each of the parameters.
7	Menu		Allows the operator to access the FVS main menu. For additional information about the screens in this menu, see 'FVS Menu'.
8	Camera		With the travel selector (FNR) in NEUTRAL, it allows the operator to toggle the display between the skip side camera and counterweight side camera. ACCESSORY

FVS Menu

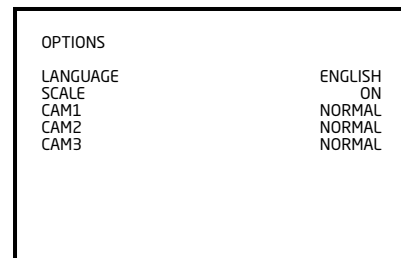
The following images show the different parameters that can be modified on each of the FVS menu screens.



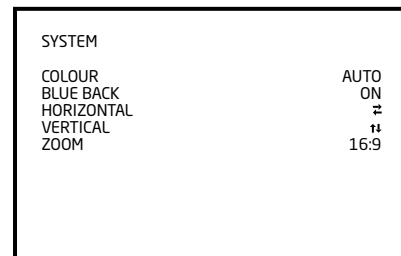
FVS Main Menu



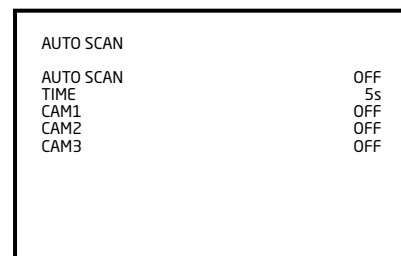
'Image' Menu



'Options' Menu



'System' Menu



'Auto Scan' Menu

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4

OPERATING THE MACHINE

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Information: The engine performance depends on the following factors:

- Fuel temperature.
- Air temperature.
- Relative humidity in the air.
- Altitude.

The higher these values, the lower the engine performance, as the power it can supply is reduced.

DAY-TO-DAY OPERATIONS

Start of the Shift

Before working with the machine, complete the corresponding maintenance tasks detailed in 'Basic Maintenance Every 8 Hours' in Chapter 8.

End of the Shift

At the end of a working shift with the machine, follow these steps:

1. Park the machine in areas specifically designated for this purpose, and not where it prevents people from passing or blocks exits or access to stairways or emergency equipment.
2. Put the skip in a straight, horizontal position (at rest).
3. Put all components and controls in their resting position.

⚠ CAUTION Risk of accident by undesired steering wheel turnings.

- Leave the chassis in the straight position.

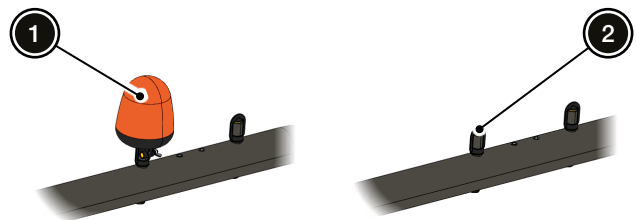
4. Apply the parking brake.

⚠ DANGER Risk of death or serious injuries by leaving the machine on a slope without brakes.

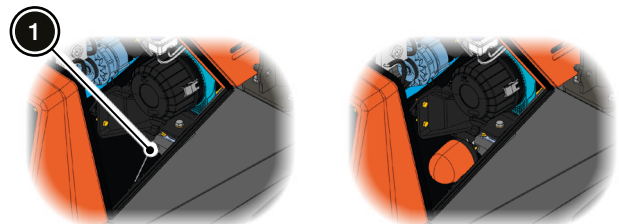
If the machine is left on a slope, apply the parking brake and place suitable chocks in the wheels.

5. Stop the engine, remove the key from the ignition switch and disconnect the battery following the indications in 'Disconnecting the Battery'.

6. Disassemble the rotating beacon (1) from the Roll Over Protective Structure (ROPS) or from the cab (ROPS/FOPS) **ACCESSORY** and cover the hole with the rubber protective plug (2).



7. Open the right maintenance cover and store the rotating beacon in the holder (1) inside the engine compartment. Then, close the right maintenance cover.



8. Lock all mechanisms which impede use of the machine by unauthorized personnel.

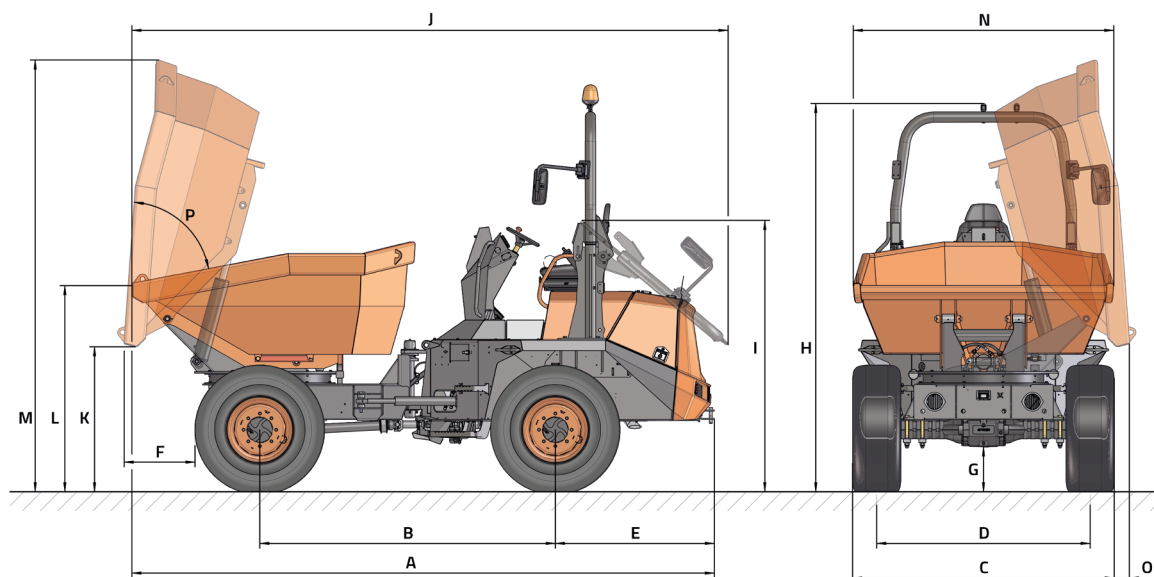
DAY-TO-DAY OPERATIONS

Dimensions and Operating Range of the Machine

The machine's dimensions and operating ranges must be taken into account when operating the machine to ensure that all operations are carried out safely.

Cota	D601AP	D 601 APG	D 601 AHG	D 1001 APG
Dimensions (mm)				
A	4670	4910	4910	5020
B	2490	2490	2490	2690
C	2210	2210	2210	2410
D	1800	1800	1800	1920
E	1340	1340	1340	1340
F	735	580	580	485
G	380	380	380	410
H	3280 (3110*)	3280 (3110*)	3280 (3110*)	3640 (3470*)
I	2240	2290	2290	2560
J	4950	5030	5030	5140
K	420	1220	1220	1260
L	1750	1740	1740	1820
M	2490	3640	3640	3830
N	2160	2200	2200	2330
O	-	110	110	155
Dimensions (°)				
P	78	75	75	75

* With cab



Dimensions and Operating Range of the Machine



DAY-TO-DAY OPERATIONS

Parking and Stopping the Engine

▲ WARNING Risk of accident by performing maintenance without parking on level ground.

- Park the machine on level ground, both at the end of the shift and when performing maintenance tasks.
- Block the wheels with suitable chocks.

1. Perform a smooth stop, releasing the accelerator and gradually stepping on the brake pedal.

NOTICE If the machine has been operating at full load, allow the engine to idle for at least one minute, to cool down.

2. Lower the skip and leave it in its centered resting position.
3. Put all controls in their at-rest position.
4. Put the travel selector (FNR) in the NEUTRAL position.
5. Apply the parking brake.

NOTICE When leaving the machine, ALWAYS apply the parking brake, regardless of whether or not the ignition is activated or whether the engine is running or stopped.

6. Stop the engine by turning the key to the STOP position.

NOTICE When leaving the machine, never leave the key in the ignition switch.

NOTICE When parking the machine and stopping the engine, do not activate the emergency push button.

Information: Protect the ignition switch using the incorporated plastic cover.

7. Lock all mechanisms which impede use of the machine by unauthorized personnel.
8. Disconnect the battery following the procedure described in 'Disconnecting the Battery'.

Starting the Engine

▲ WARNING Risk of death or serious injuries by starting the machine without safety measures.

Before starting the engine:

- Sit down in the operator's position/cab and fasten the seatbelt.
- Apply the parking brake.
- Set the travel selector (FNR) in NEUTRAL position.

▲ WARNING Risk of serious injuries by high pressure liquid blowout.

- Make sure the **ACCESSORY** air conditioning hoses are connected before starting the engine.
- See 'Disassembly and Assembly the Cab' **ACCESSORY** in Chapter 6.

Information: If the machine equips the GPS **ACCESSORY** with start disable, the GPS should be activated for starting the engine.

1. Battery cut-off switch in the ON position. See 'Disconnecting the Battery'.
2. Emergency push button activated.
3. Insert the key in the ignition switch and turn it to the IGNITION position.

NOTICE Wait until the cold start system indicator turns off.

4. Turn the key to the START position. The engine will start. Once started, release the key, which will return to the IGNITION position.

NOTICE Do not keep the key in the START position for longer than 15 seconds. If the engine does not start, repeat the previous steps, waiting 30 seconds between each attempt.

NOTICE At low temperatures, increase the revs gradually so the engine achieves a good level of lubrication.

DAY-TO-DAY OPERATIONS

Refueling

▲ WARNING Risk of fire or explosions by refueling in enclosed areas.

- Refuel the machine in a well-ventilated area and with the engine stopped.

▲ WARNING Risk of fire or explosions by smoking and refueling simultaneously.

- Never smoke during refueling.

NOTICE The fuel must meet the specifications set forth in 'Fuel' in Chapter 1 and 'Fuel specifications' in Chapter 8.

NOTICE Never mix petrol or alcohol with the fuel.

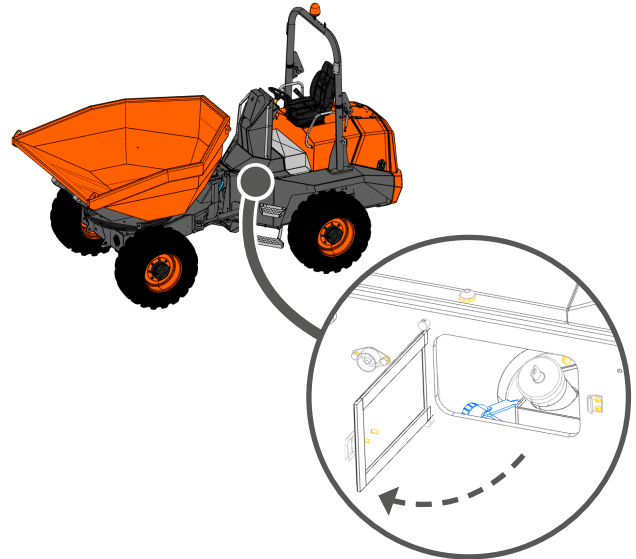
NOTICE Do not use fuel mixtures with oils, other fuels or unsuitable additives.

1. Bring the machine near the fuel pump so the hose reaches the tank intake easily.
2. Apply the parking brake.
3. Turn off the lighting equipment **ACCESSORY** and stop the engine.

Information: If the pump has an earth-connection point for vehicles, connect it to a non-insulated metallic point on the machine.

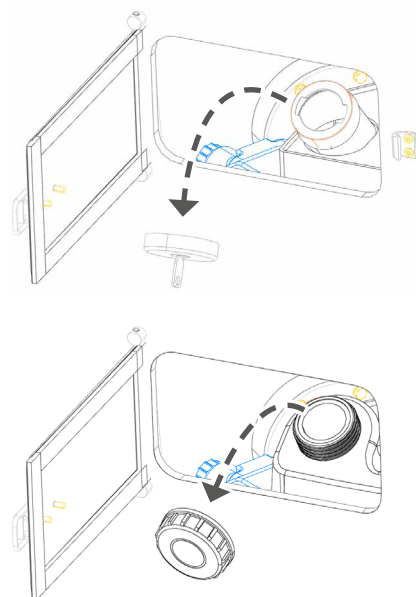
4. To access the fuel tank intake, open the cap located on the side of the machine.

Information: This cap might have a vandal-proof safety device.



5. Clean the area around the fuel tank cap to prevent accumulated dirt, water or other substances from entering the tank during refueling.
6. Turn the key or the fuel tank cap (depends on the model) counterclockwise to remove it, and insert the pump hose.

NOTICE If any internal pressure is perceived (whistling sound heard when removing the fuel tank cap), contact an authorized AUSA dealer before operating the machine.





DAY-TO-DAY OPERATIONS

7. Fill up the tank, ensuring that its maximum capacity is not exceeded.

▲ WARNING Risk of fire due to spilled fuel.

- Avoid spilling fuel outside the tank. Immediately clean any spillage, and dry the surface thoroughly.

NOTICE Never refuel before exposing the machine to high temperatures, since there might be fuel spillages through the vent.

8. Once the tank has been filled, remove the pump hose.

9. Place the cap and turn the key or the fuel tank cap (depends on the model) clockwise until it stops.

10. Close the cover located on the side of the machine.

Information: Secure the cap using the vandal-proof safety device.

SPECIAL OPERATIONS

Running-In the Engine

NOTICE Long accelerations at full throttle, maintaining a high cruising speed and overheating are detrimental to the engine during the running-in period.

The machine's engine requires a running-in period of 50 hours before it is able to operate at full load.

During the running in period, the accelerator pedal must not be pressed down more than $\frac{3}{4}$ during normal operation of the machine.

NOTICE Once the 50 hours or 30 days running-in period is over, it will be necessary to have the machine serviced at an authorized AUSA dealer.

Roll Over Protective Structure (ROPS)

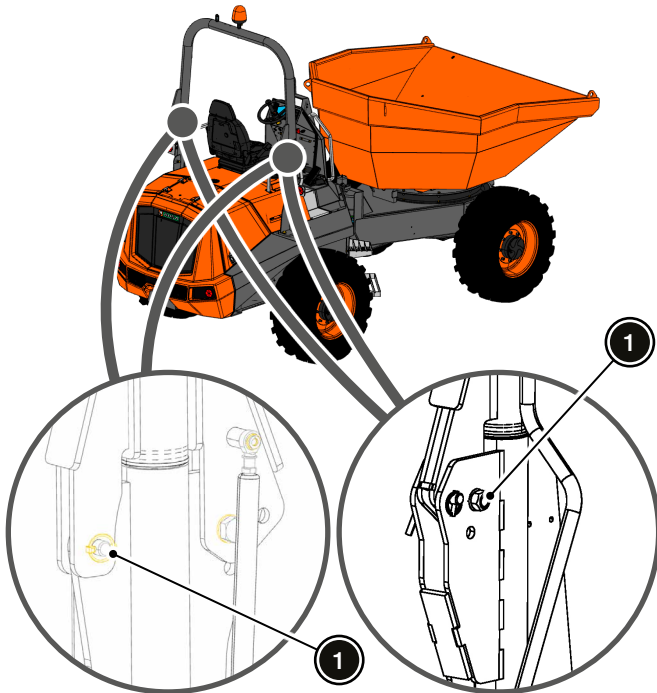
The procedure to put the Roll Over Protective Structure (ROPS) into transport position is explained below:

▲ WARNING Risk of accident by losing the balance.

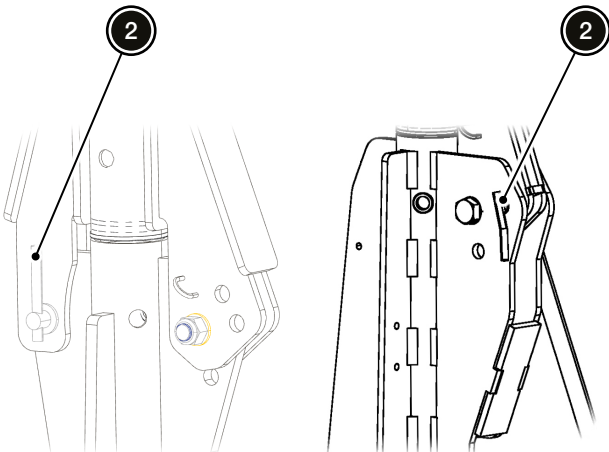
- When changing between the operational and travelling position of the Roll Over Protective Structure (ROPS), adopt a position that maintains good balance.
- Also, make sure you keep your hands out of the articulation area, as this may cause serious injury.

SPECIAL OPERATIONS

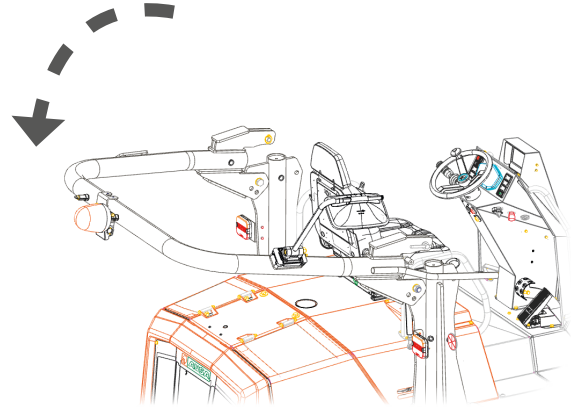
1. Remove the split pins (1) of the bolt pins located on both sides of the Roll Over Protective Structure (ROPS).



2. Remove the bolt pins (2).

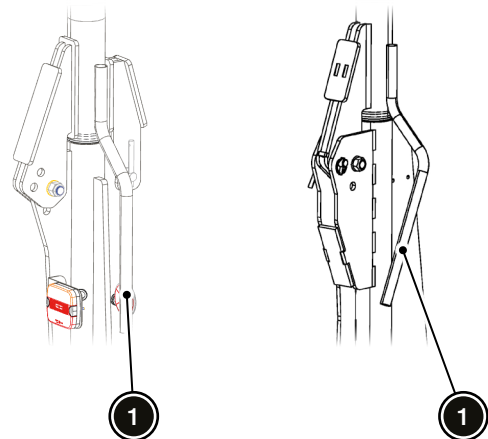


3. Carefully, fold the upper part of the Roll Over Protective Structure (ROPS) into transport position.



Information: The Roll Over Protective Structure (ROPS) has a handle (1) on the right side handling and reduce the risk of entrapment.

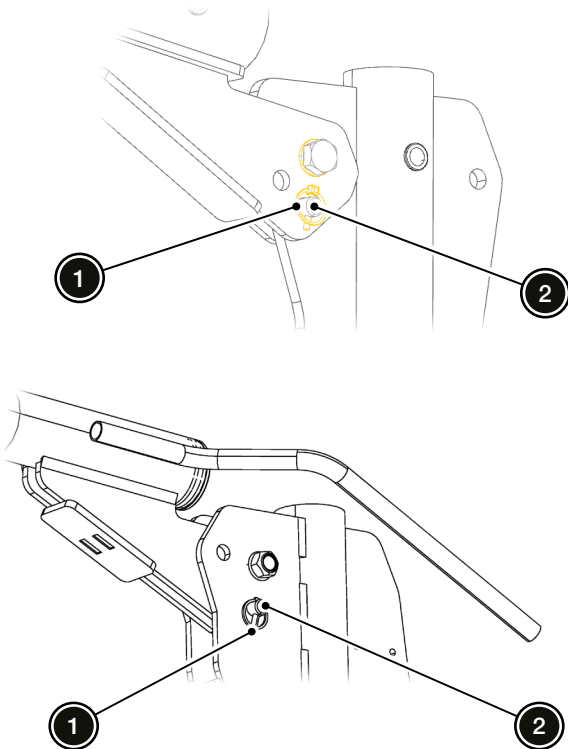
In addition, it has a gas strut to compensate for the weight of the upper part during handling.





SPECIAL OPERATIONS

- Once the Roll Over Protective Structure (ROPS) is in traveling position, replace the bolt pins (2) and its corresponding split pins (1).

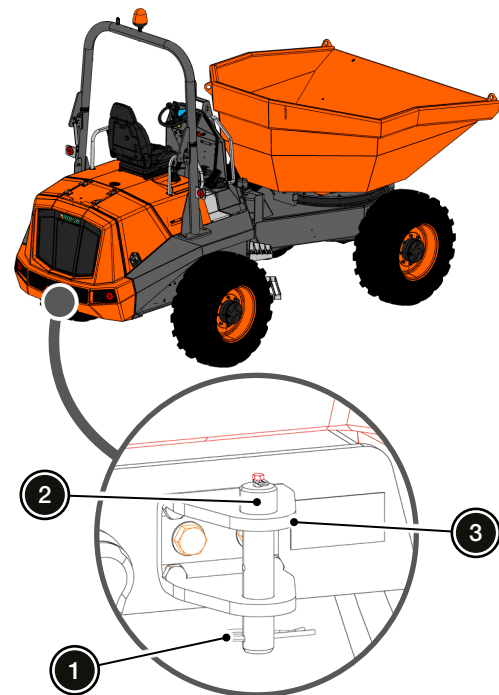


Information: To place the Roll Over Protective Structure (ROPS) in the operational position, follow the instructions in reverse order.

Towing Hitches

Information: The towing hitch fitted on this machine is intended for towing the machine in the event of a breakdown. Is not intended for towing a trailer. See 'Towing' in Chapter 6.

- Remove the split pin (1) and pull the bolt pin (2) from the support bolted to the counterweight (3).



- Insert the bolt pin through the support bolted to the counterweight and towing device. Lock the bolt pin with the split pin.

Information: Various types of towing hitches may be equipped as an accessory. See 'List of Accessories' in Chapter 9.

However, when towing a trailer on public roads, check and follow the applicable regulations of the country where the machine is being used.

SPECIAL OPERATIONS

Immobilizing the Chassis

Immobilizing the chassis prevents accidents caused as a result of undesired steering wheel turnings.

▲ WARNING Risk of accident by towing or hoisting the machine with a crane without locked chassis.

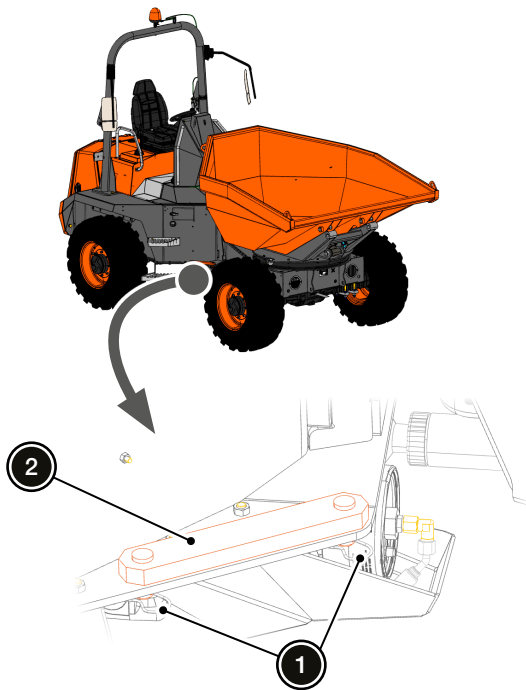
- Lock the machine's chassis before towing it or hoisting it with a crane.

▲ WARNING Risk of accident by performing maintenance operations without locked chassis.

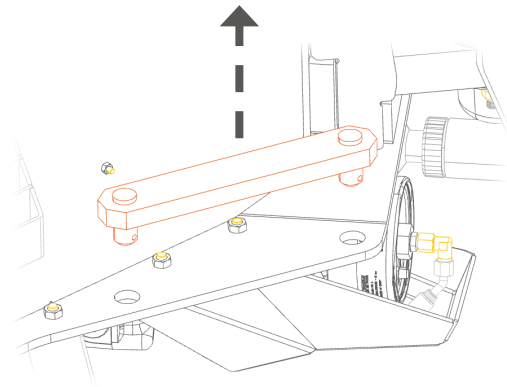
- Lock the machine's chassis before performing maintenance operations with the engine running.

Information: Before beginning this procedure, ensure that the chassis is in the straight position.

1. Remove the split pins (1) of the articulation safety prop (2).

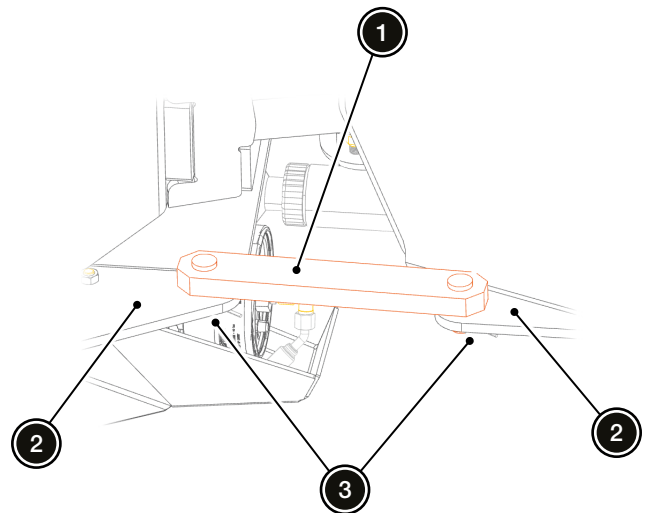


2. Remove the safety prop from the chassis.



3. Place the safety prop (1) so that it joins both chassis bodies (2) and place the split pins (3).

Information: If necessary, turn the steering wheel to adjust the position of the chassis so that the safety prop may be correctly fitted.



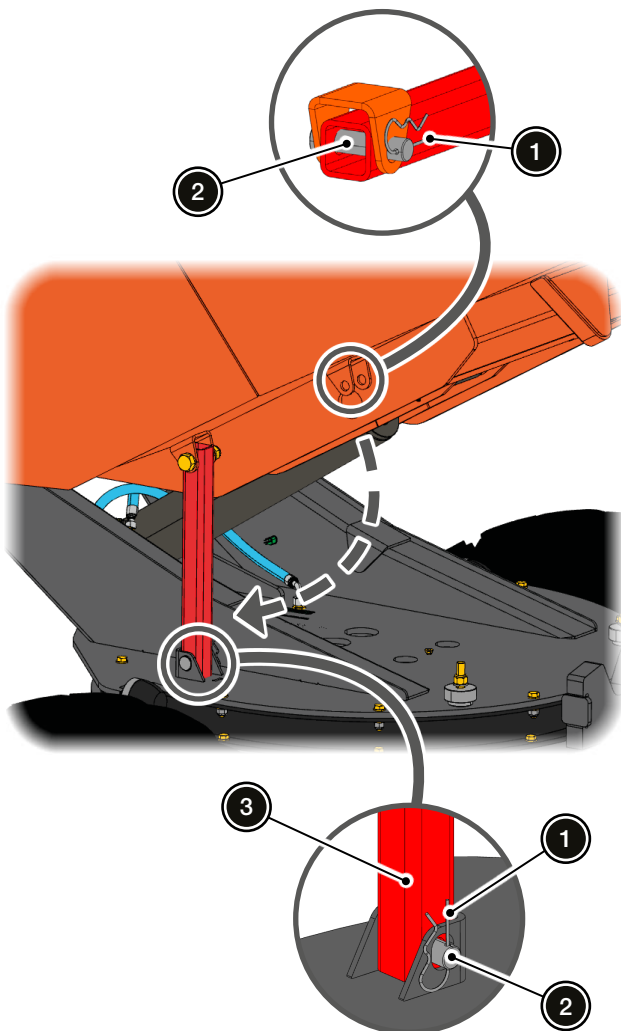


SPECIAL OPERATIONS

Immobilizing the Skip

⚠ DANGER Risk of death or serious injuries by carrying out maintenance tasks with raised skip.

- Lock the skip when carrying out maintenance tasks that require the skip to be in the raised position.
1. Raise the skip with the joystick following the instructions set forth in 'Controls' in Chapter 3.
 2. Remove the split pin (1) and the bolt pin (2) of the safety prop (3) and manually place it into position.



3. Install the bolt pin (2) and the split pin(1) to attach the safety prop (3) to the chassis.

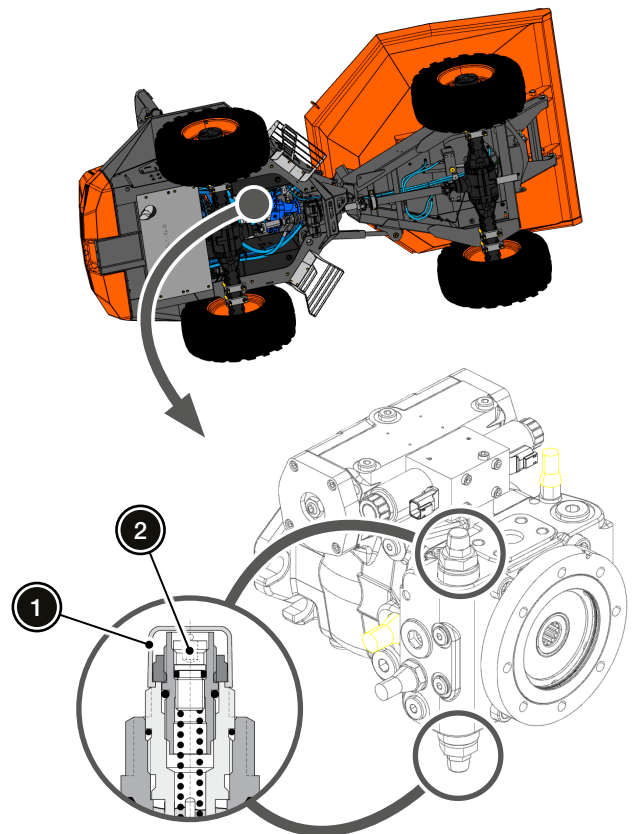
Transmission Bypass Function

HYDROSTATIC TRANSMISSION

The transmission bypass function is used to enable the machine to be towed, as described in 'Towing' in Chapter 6.

ACTIVATION

1. Stop the engine.
2. Access the hydrostatic system pump and remove the protective covers (1) on the two pressure relief valves.



Information: The protective covers are destroyed when removed, and must be replaced with new ones.

3. With a 5 mm hex key, loosen the screws inside (2) each of the two valves, turning them counterclockwise.

SPECIAL OPERATIONS

DEACTIVATION

NOTICE Risk of lack of traction caused by not deactivating the transmission bypass function.

- Deactivate the transmission bypass function immediately after towing.
1. Rearm the high-pressure relief valves, tightening the screws inside by (2) applying a torque of 10 ± 1 Nm.
 2. Place new protective covers to avoid unauthorized manipulation.

Transmission Bypass Function

POWERSHUTTLE TRANSMISSION

The transmission bypass function is used to enable the machine to be towed, as described in 'Towing' in Chapter 6.

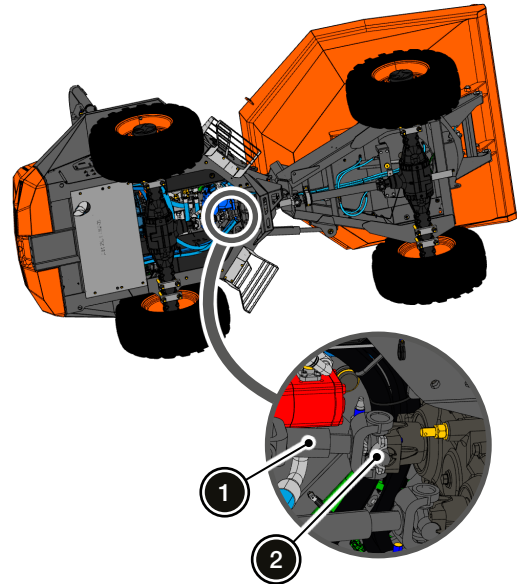
NOTICE When towing, the drive shaft between the gearbox and the transfer box must be disconnected.

ACTIVATION

1. Stop the engine.
2. Put the gear lever in NEUTRAL.
3. Access the drive shaft (1) between the gearbox and the transfer box.
4. Release the front joint (2) removing the screws with a 3/8" 12-point socket spanner.

Information: Once the drive shaft has been released, the bearing caps of the CV joint can be separated from the journal cross. Take the necessary precautions so they don't become misplaced.

Before stating to tow, it is recommended to attach the section of the drive shaft that was left loose with a plastic tie (or similar), so it does not interfere with any components.



DEACTIVATION

1. Assemble the drive shaft (1) between the gearbox and the transfer box.
2. Apply a few drops of thread sealant to the threaded area of the holes.

NOTICE The following thread sealants are recommended:

- Loctite 242
- Loctite 243
- And equivalent

3. Firmly tighten the screws of the joint (2).



SPECIAL OPERATIONS

Disconnecting the Battery

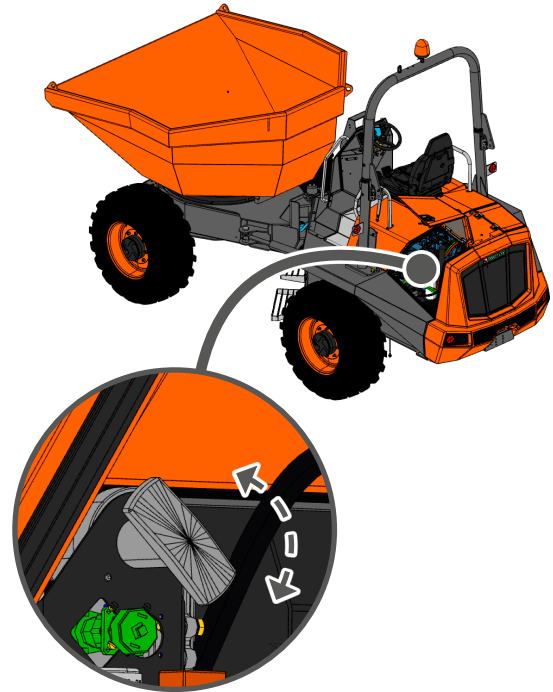
⚠ WARNING Risk of component damage by working on the electrical system with connected battery.

- Before performing any maintenance operation on the electrical system, disconnect the battery.

NOTICE Do not disconnect the battery immediately after stopping the machine engine. Wait at least two minutes before doing so.

Information: It is good practice to disconnect the battery if the machine will be at standstill for more than 4 days.

Open the maintenance cover and turn the battery master switch.



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5

EMERGENCY OR BREAKDOWN SITUATIONS

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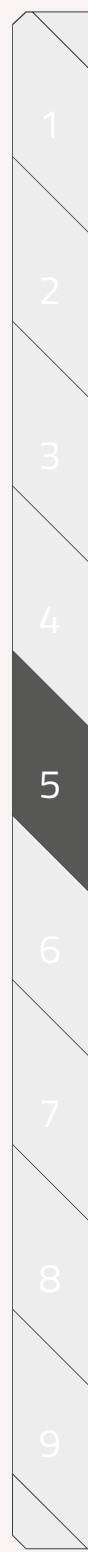
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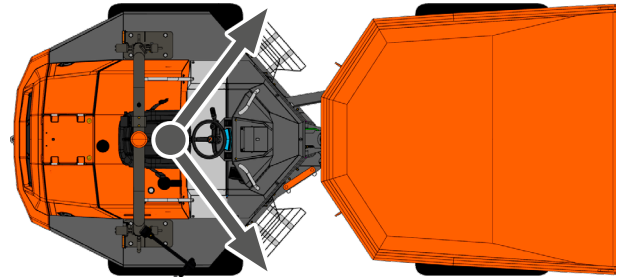
EMERGENCY EXIT

In case of emergency, the machine can be exited from either side.

▲ WARNING Risk of accident by falling during an emergency exit.

An emergency exit may cause injuries.

Information: The machine has steps and handles on both sides to facilitate the emergency exit.



Emergency Exit

EMERGENCY START

If the engine cannot start due to a dead battery, another 12V booster battery can be used together with the corresponding jump leads to connect the two batteries. Proceed as described below:

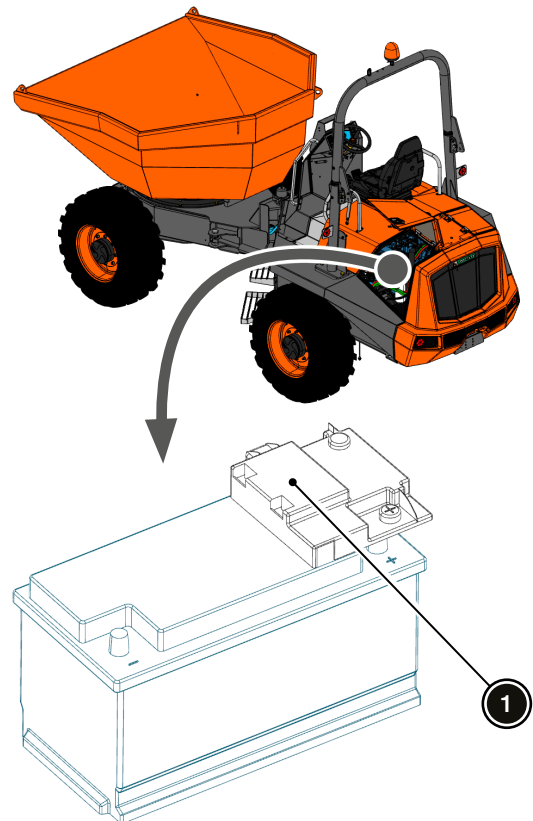
▲ WARNING Risk of explosion by charging without a 12 V battery.

Other charging devices than a 12 V battery (such as battery chargers, etc.) might cause explosions in the battery or damage to the electrical system.

➤ Use only 12 V batteries.

NOTICE When using a battery from another vehicle, try to prevent the vehicle from touching the machine.

1. Open the left maintenance cover to access the battery.
2. Disassemble the cover (1) of the positive post.

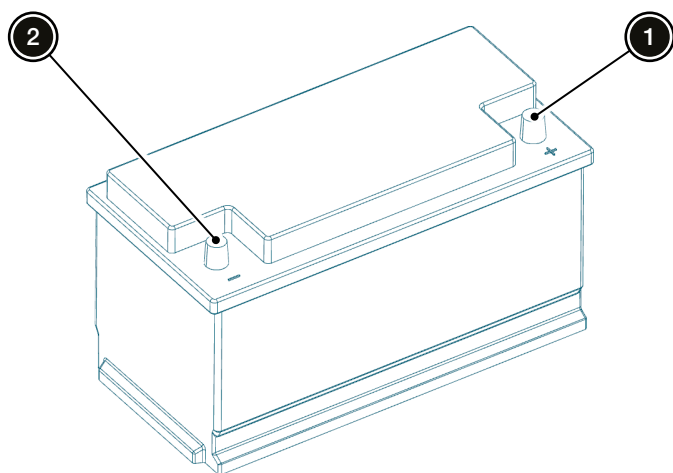


EMERGENCY START

3. Connect the posts from the auxiliary battery to the posts of the machine battery.

NOTICE Connect the positive post from the auxiliary battery to the positive post of the machine battery (1).

Connect the negative post from the auxiliary battery to the negative post of the machine battery (2).



4. Start the machine engine as usual, following the indications provided in 'Starting the Engine' in Chapter 4.

5. Disconnect the cables from the posts.

NOTICE First, disconnect the negative posts and then the positive posts.

ENGINE OVERHEATING

▲ WARNING Risk of hand burns by hot radiator.

The radiator might be very hot.

- Use gloves before handling it.

If the coolant temperature indicator switches on when the machine is in operation, proceed as follows:

1. Reduce the speed and keep the machine moving so that air circulates through the radiator.
2. If the indicator is still on after one minute, stop the machine. Put the travel selector (FNR) in NEUTRAL, apply the parking brake and stop the engine.

3. Wait for the engine to cool down, and perform the following checks:

- Inspect the radiator coolant fins and clean them following the procedure in 'Basic Maintenance Every 50 Hours' in Chapter 8.
- Check the coolant level and, if it is below the minimum, refill the expansion tank following the procedure in 'Refilling Coolant' in Chapter 8.



UNLOCKING THE BRAKES **HYDROSTATIC TRANSMISSION**

⚠ DANGER Risk of death or serious injuries by unlocking the brakes without chocks.

- Before unlocking the brakes, lock the wheels with appropriate chocks to prevent undesired movements of the machine.

⚠ WARNING Risk of accident by starting the machine without brakes.

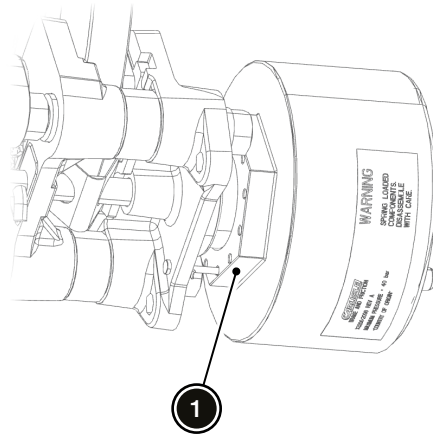
- Lock the brakes before starting the machine again.

To unlock the parking brake, proceed as follows:

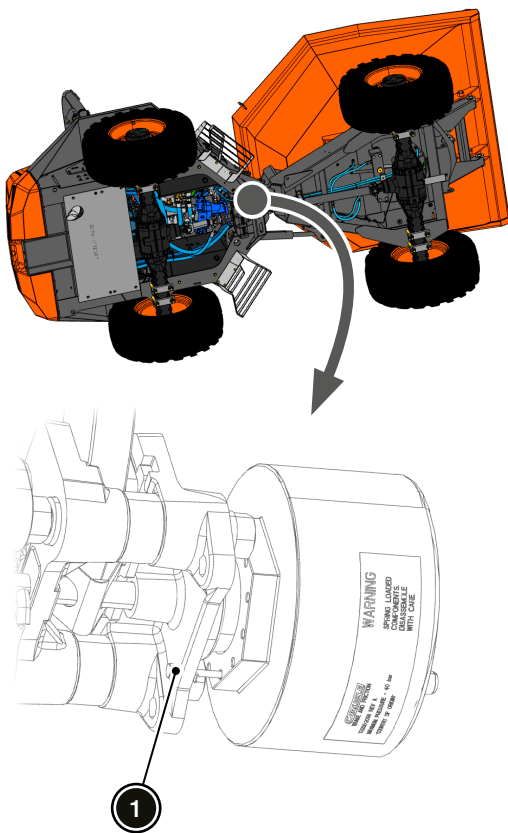
1. Stop the machine engine and remove the key from the ignition switch.
2. Access the parking brake under the machine and remove the lock (1).

Information: Make a small mark to identify the hole where the split pin was inserted, so it can be placed in the same location later.

3. Use a 70 mm wrench to rotate the brake (1) two turns clockwise to unlock it.



Information: To lock the brakes again, follow the instructions in reverse order.



UNLOCKING THE BRAKES **POWERSHUTTLE TRANSMISSION**

⚠ DANGER Risk of death or serious injuries by unlocking the brakes without chocks.

- Before unlocking the brakes, lock the wheels with appropriate chocks to prevent undesired movements of the machine

⚠ WARNING Risk of accident by starting the machine without brakes.

- Lock the brakes before starting the machine again.

To unlock the brakes, disassemble the universal joint between the gearbox and the transfer box; to do this, follow the procedure described in '*Transmission Bypass Function*' in Chapter 4.





PARTICULATE FILTER (DPF) REGENERATION **ENGINE WITH PARTICULATE FILTER (DPF)**

Depending on the saturation level of the particulate filter (DPF), the machine regenerates automatically during operation or requires the operator to intervene in the regeneration with the machine stationary.

Information: Under certain conditions, such as short operation times or low engine load, the system might require the operator to intervene to regenerate the particulate filter (DPF).

Regeneration During Operation

The saturation indicator of the particulate filter (DPF) is at the green level, which indicates that automatic regeneration is possible. This process is carried out under certain operating conditions.

Regeneration with the Machine Stationary

The saturation indicator of the particulate filter (DPF) is at the orange level. The 'Regeneration required with the machine stationary indicator' switches on (flashing light).

The particulate filter (DPF) requires the operator to intervene to perform the regeneration with the machine stationary.

If the 'Warning' indicator also switches on illuminated in yellow color (steady light), an acoustic warning sounds and engine power is significantly limited. This means the particulate filter (DPF) urgently requires regeneration with the machine stationary.

⚠ DANGER Risk of death by inhalation of carbon monoxide in an enclosed area .

Exhaust gases contain carbon monoxide, a colorless and odorless gas which is toxic. Inhaling it may prove fatal.

- To prevent poisoning caused by inhalation of the toxic engine exhaust gases, perform the regeneration process in a well-ventilated area.
- Carrying out the regeneration procedure outdoors with the machine at a standstill is recommended.

⚠ WARNING Risk of fire by regenerating with the machine close to flammable substances or materials .

During the regeneration process, exhaust gases reach extreme temperatures, which may cause fires if directed at flammable substances or materials.

- Do not park the machine on flammable surfaces that might catch fire when in contact with exhaust gases.
- It is advisable to place a metal plate to avoid damages to the surface where the gases are directed (cement, asphalt, painted surfaces, etc.).

To carry out the regeneration process with the machine stationary, proceed as described below:

1. Start the engine and keep at idle.

NOTICE Do not apply any load to the engine. Do not activate the hydraulics, press the accelerator, or turn the steering wheel.

NOTICE The coolant temperature must be over 60 °C.

2. Apply the parking brake.
3. Press the push button for regeneration with the machine stationary for 3 seconds, and then release to initiate the regeneration process.

NOTICE

- The engine increases revolutions automatically.
- The 'High Exhaust Gas Temperature Indicator' switches on.
- The 'Regeneration Required with the Machine Stationary' indicator light switches on (steady light).
- The regeneration process takes around 30-35 minutes, and finishes when the engine returns to idle.
- If any of these conditions change during the process, the regeneration procedure is interrupted.

ROLL OVER

If the machine rolls over, the operator must take into account the following recommendations to avoid being trapped between the machine and the ground:

- When the machine is in operation, stay inside the protective area of the Roll Over Protective Structure (ROPS) or the cab **ACCESSORY** at all times.
- Grasp the steering wheel firmly.

- Place your feet firmly on the floor of the operator's position/cab.
- Try to stay as far away from the point of impact as possible.

After securing the area and ensuring the well-being of the affected operator, proceed with placing the machine again on its four wheels.

NOTICE Once the normal position has been restored, do not attempt to start the machine without first contacting the AUSA authorized dealer.

IMMERSION

NOTICE Risk of serious damage to the machine.

- Do not attempt to start the machine's engine. Immersion can cause serious damage to the machine.
- Contact the AUSA authorized dealer.

1

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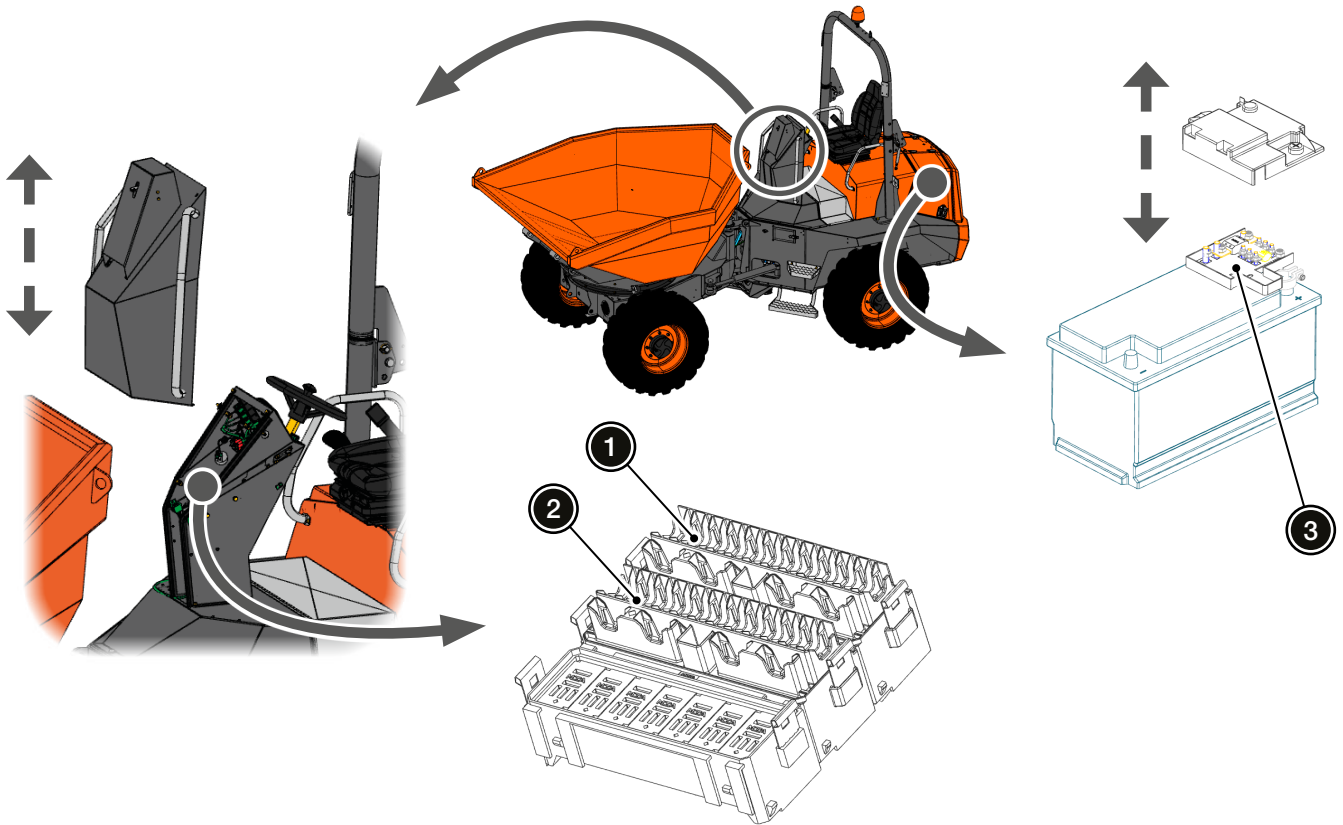


FIRE

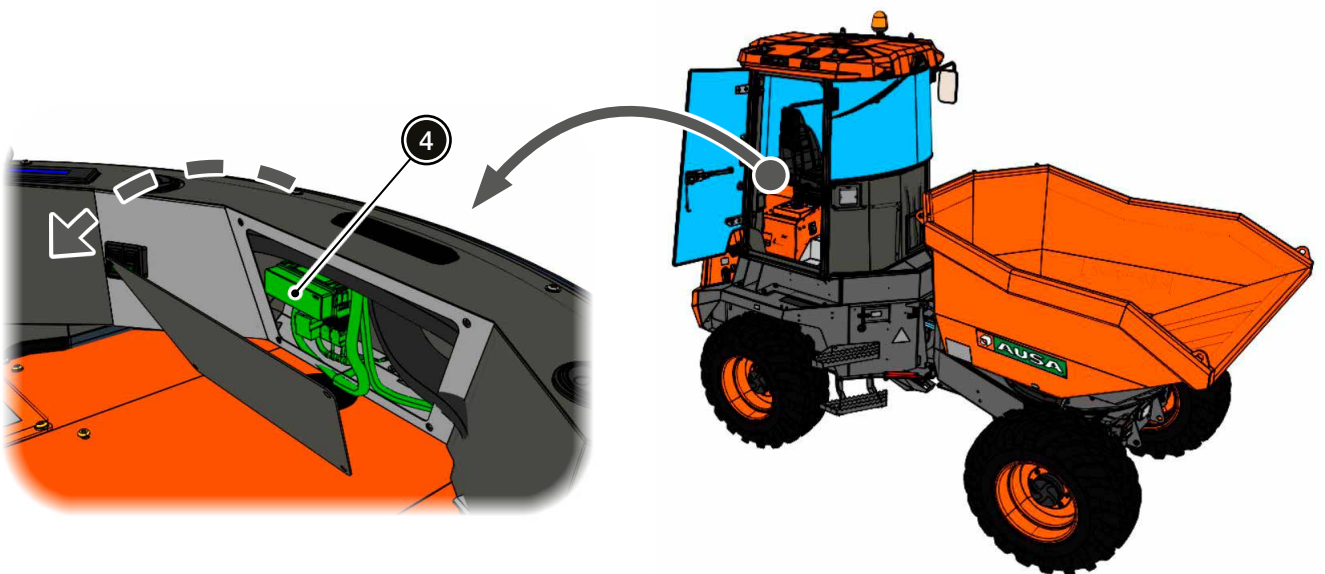
The following table indicates the effectiveness of each extinguishing agent depending on the fire source.

Extinguishing agent	Type of fire				
	A	B	C	D	E
	Solids that create embers	Liquids or liquefiable solids	Gases	Metals	Presence of electrical voltage above 25V
Water spray	Excellent	Acceptable for non-water-soluble liquid fuels (diesel, oil, etc.).	Null	Null	Dangerous
Water jet	Good	Null	Null	Null	Very dangerous
Carbon dioxide (CO ₂)	Acceptable Can be used for small fires Does not extinguish embers	Acceptable Can be used for small fires	Null	Null	Good
Foam	Good	Good Do not use water-soluble liquids	Null	Null	Dangerous
Normal dry powder (BC)	Acceptable Can be used for very small fires Does not extinguish embers	Good	Good	Null	Good
Multipurpose dry powder (anti-reignition) (ABC)	Good	Good	Good	Null	Good for voltages below 1,000 V; do not use with higher voltages
Special dry powder for metals	Null	Null	Null	Good	Null
Halon substitutes (FM200, NAF SIII, INERGEN, etc.)	Acceptable Can be used for small fires	Acceptable Can be used for small fires	Null	Null	Good

FUSES



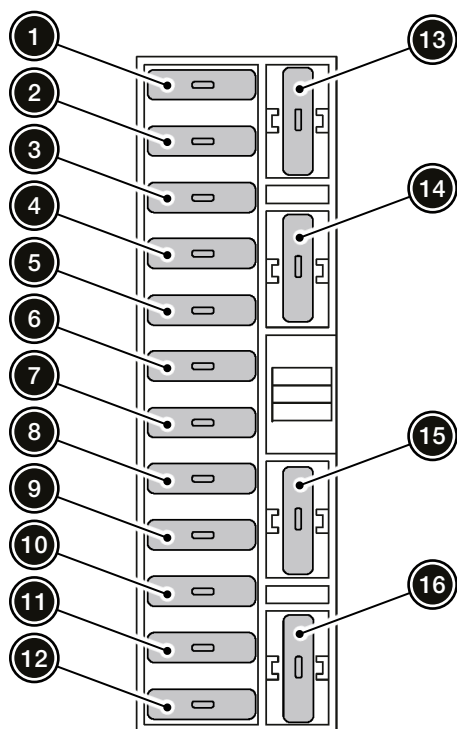
Location of the Fuse Boxes



Location of the Cab Fuse Box **ACCESSORY**



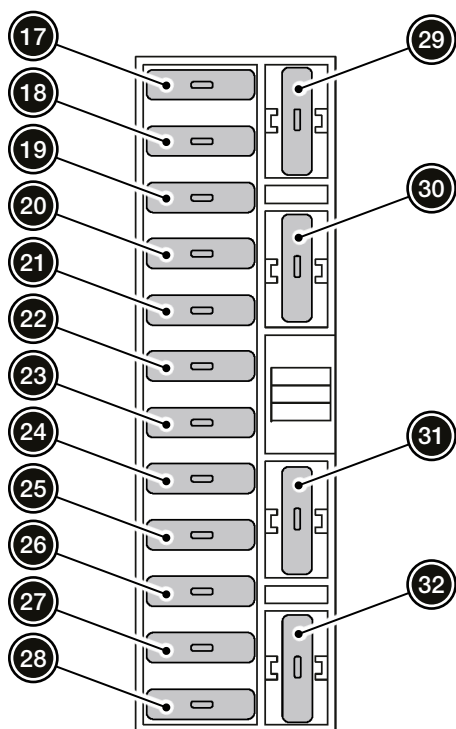
FUSES



Fuse Box 1

Item	Range (A)	Description
1	5	▪ Diesel engine ECU
2	5	▪ Travel direction control signals (FNR) ▪ Parking brake
3	7,5	▪ HMI screen ▪ Diagnosis connector ▪ Alternator ▪ FVS supply
4	10	▪ Rotating beacon ▪ Horn
5	5	▪ Smart-Stop ACCESSORY ▪ Joystick yellow button
6	1	▪ GPS
7	20	▪ Cab ACCESSORY
8	15	▪ Work lights ▪ Sidelights
9	15	▪ Indicators ▪ Brake light
10	1	▪ Transmission ECU HYDROSTATIC TRANSMISSION ▪ Speed sensor POWERSHUTTLE TRANSMISSION
11	5	▪ Seat sensor ▪ Seatbelt sensor
12	20	▪ Machine functions ECU
13	-	Not used
14	5	▪ DPF Switches ENGINE WITH PARTICULATE FILTER (DPF)
15	15	Not used
16	5	▪ Start signal (+50)

FUSES

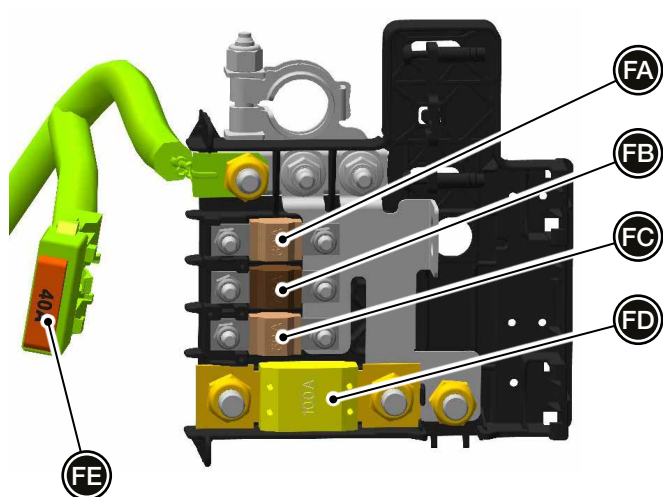


Fuse Box 2

Item	Range (A)	Description
17	15	<ul style="list-style-type: none"> Transmission ECU HYDROSTATIC TRANSMISSION
18	15	<ul style="list-style-type: none"> Hazard lights
19	1	<ul style="list-style-type: none"> GPS Digicode
20	5	<ul style="list-style-type: none"> Transmission ECU HYDROSTATIC TRANSMISSION
21	-	Not used
22	10	<ul style="list-style-type: none"> Optional connector
23	5	<ul style="list-style-type: none"> HMI screen
24	5	<ul style="list-style-type: none"> Transmission ECU HYDROSTATIC TRANSMISSION
25	-	Not used
26	-	Not used
27	-	Not used
28	-	Not used
29	20	<ul style="list-style-type: none"> Lighting equipment ACCESSORY
30	-	Not used
31	5	<ul style="list-style-type: none"> Sidelights Lighting equipment indicators
32	5	<ul style="list-style-type: none"> Sidelights Plate number light



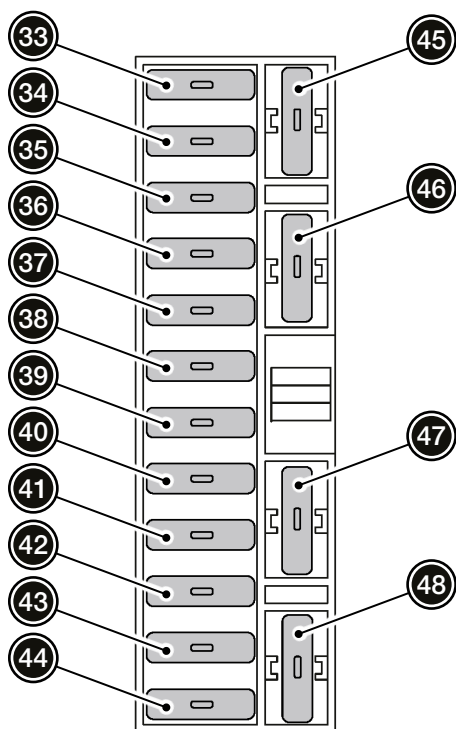
FUSES



Fuse Box 3

Item	Range (A)	Description
FA	30	▪ Diesel engine ECU power supply
FB	70	▪ General +15 and +30
FC	30	▪ Fuel pump
FD	100	▪ Cold start system
FE	40	▪ Cab fuse ACCESSORY

FUSES



Fuse Box 4 **ACCESSORY**

Item	Range (A)	Description
33	15	▪ Cab interior fan speed selector
34	1	▪ Cab interior air temperature control
35	5	▪ A/C compressor relay
36	-	Not used
37	20	▪ A/C condenser fan
38	-	Not used
39	15	▪ Windscreen wipers counterweight side
40	15	▪ Windscreen wipers skip side
41	10	▪ Radio
42	15	▪ 12 V power socket
43	-	Not used
44	-	Not used
45	5	▪ A/C switch
46	-	Not used
47	10	▪ +30 Radio
48	5	▪ Courtesy light



DIAGNOSTICS MENU

To access the machine's diagnostics menu, proceed as described below in less than 10 seconds:

1. Insert the key into the ignition and turn to the IGNITION position.
2. Parking brake switch activated.
3. Fully depress the accelerator pedal.
4. Press the yellow button located on the lower part of the joystick for one second.

Once the diagnostic menu has been accessed, browse the different displays using the yellow button located on the lower part of the joystick.

Information: *It is possible to start the engine and drive the machine while the system is on the diagnostics menu, provided the usual conditions of use are met.*

To exit the diagnostics menu, move the ignition switch to the STOP position.

ENGINE FAULTS

When the engine's electronic management system detects a malfunction, it turns on the 'Engine Malfunction Indicator' (see 'Hmi Display' in Chapter 3) and the 'Engine Malfunction Push Button' light switches on (see 'Control Panel' in Chapter 3).

Information: *Depending on the seriousness of the malfunction detected, the engine may continue to operate with certain limitations. In these cases, the 'Engine Malfunction Indicator' remains steady or flashes, to indicate a serious system error.*

Contact the AUSA authorized dealer for a system diagnosis.

EMERGENCY OR BREAKDOWN SITUATIONS

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6

TRANSPORTATION, WAREHOUSE STORING AND END OF USEFUL LIFE

CONTENTS INDEX

TRANSPORTING THE MACHINE 6-3
 Hoisting on the Bed of a Vehicle..... 6-3
 Loading Using a Crane 6-3
 Disassembling and Assembling the Cab **ACCESSORY** 6-4
 Towing 6-8
STORAGE 6-9
END OF USEFUL LIFE..... 6-9
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TRANSPORTING THE MACHINE

Information: Use only ISO 15818 standard-rated and approved fastening and lifting equipment capable of tie-down and hoisting the machine and its accessories and accumulated material.

Use edge protectors to avoid damaging the machine and the fixing and lifting systems.

Hoisting on the Bed of a Vehicle

▲ WARNING Risk of accident due to unsuitable fastening equipment.

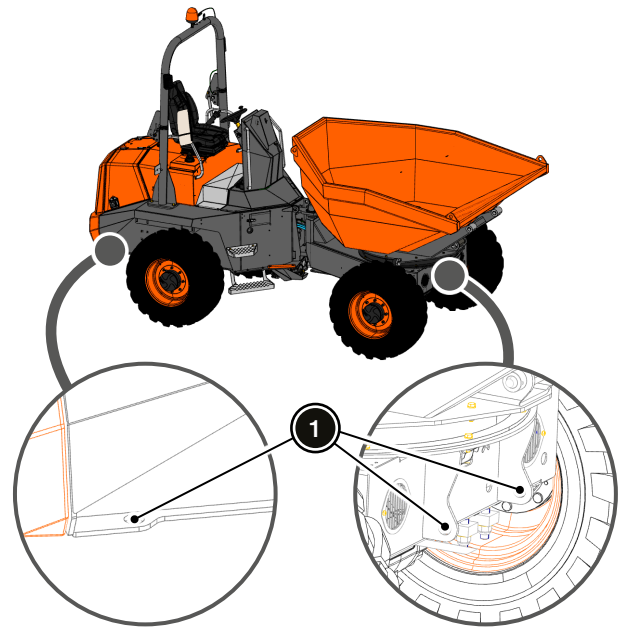
- When fixing the machine to the transportation vehicle platform, use a suitable system which is sufficiently robust.

Information: Take into account the ADR Regulation requirements that may be applicable, according to UN No. 3528, and any other safety instructions from the country where the machine is being used.

Adhere to the following instructions when the machine has to be transported on the bed of another vehicle:

- Immobilize the chassis articulation following the procedure described in 'Immobilizing the Chassis' in Chapter 4.
- Fold the Roll Over Protective Structure (ROPS) following the procedure outlined in 'Roll Over Protective Structure (ROPS)' in Chapter 4.
- When operating the machine, correctly fasten the seatbelt.
- Have the minimum level of fuel in the tank. Empty the fuel tank following the procedure described in SAC.R.03 Emptying the Fuel Tank in the Advanced Maintenance Manual.
- Raise and lower the machine carefully using the loading ramps.
- Stop the engine and remove the key from the ignition switch.
- Apply the parking brake.
- Apply chocks to the wheels and fix them to the vehicle bed.

- Tie down the machine firmly to the bed using slings or another fastening system at the points (1) set for that purpose, to prevent any kind of movement.



Loading Using a Crane

▲ DANGER Risk of death or serious injuries by hoisting the machine with the cab assembled.

Before hoisting the machine, disassemble the cab.

ACCESSORY

See 'Disassembling and Assembling the Cab'.

▲ DANGER Risk of death or serious injuries from crushing.

- When hoisting the machine, no one may be on top or within a 5 m radius around it.

▲ DANGER Risk of death or serious injuries by hoisting the machine without horizontal guides.

- Lift the machine in the most horizontal position possible, using guide ropes or other systems to keep the machine from turning or pivoting.

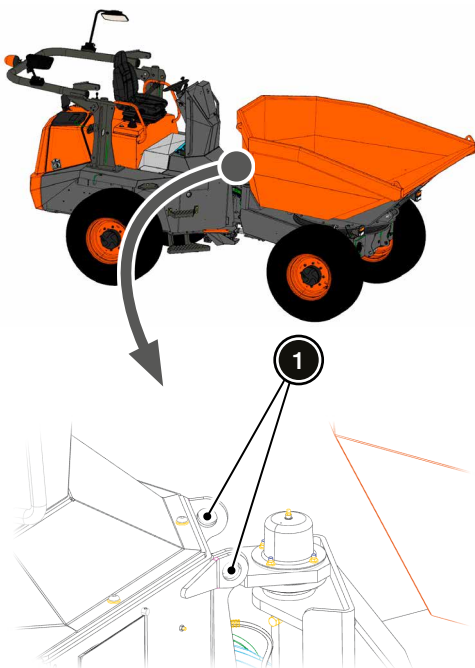
TRANSPORTING THE MACHINE

When the machine is loaded using a crane, follow the indications below:

- Immobilize the chassis articulation following the procedure described in 'Immobilizing the Chassis' in Chapter 4.
- Fold the Roll Over Protective Structure (ROPS) following the procedure outlined in 'Roll Over Protective Structure (ROPS)' in Chapter 4.
- Attach the cable or the sling at the points (1) on the machine set for that purpose.

⚠ DANGER Risk of death or serious injury by hoisting the machine with unsuitable means.

- Both the crane and the cables or slings have sufficient capacity to lift the machine.
Check the machine weight in the 'Specifications Chart' in Chapter 7.



- Before hoisting the machine, check that the cable or sling is firmly hooked.
- Undertake this operation with the machine unloaded, and on flat and horizontal ground.

Disassembling and Assembling the Cab

ACCESSORY

⚠ DANGER Risk of death or serious injuries by hoisting the cab without using each and every one of the anchor points.

To hoist the cab, use the four cable or sling anchor points at the same time.

⚠ DANGER Risk of death or serious injury from crushing.

When hoisting the cab, there must be no one on top of the machine or within the area nearby.

⚠ DANGER Risk of death or serious injuries by hoisting the cab with unsuitable fixing devices.

Both the crane and the cables or slings have sufficient capacity to lift the cab.

Information: Cab weight: 450/500 kg.

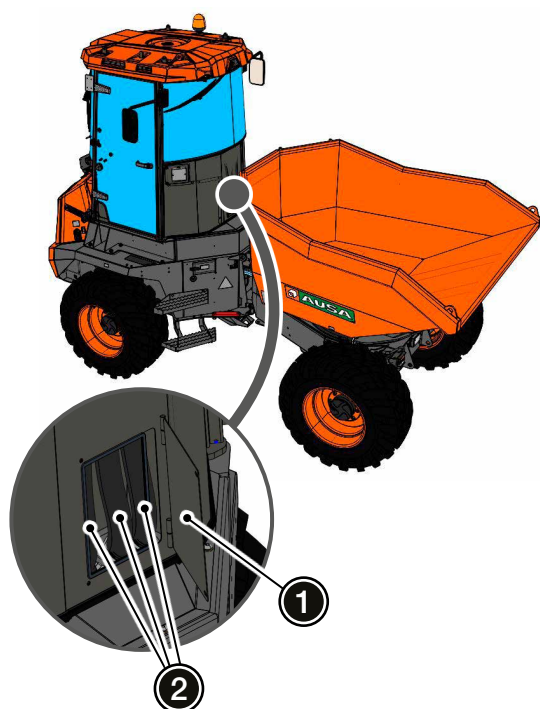




TRANSPORTING THE MACHINE

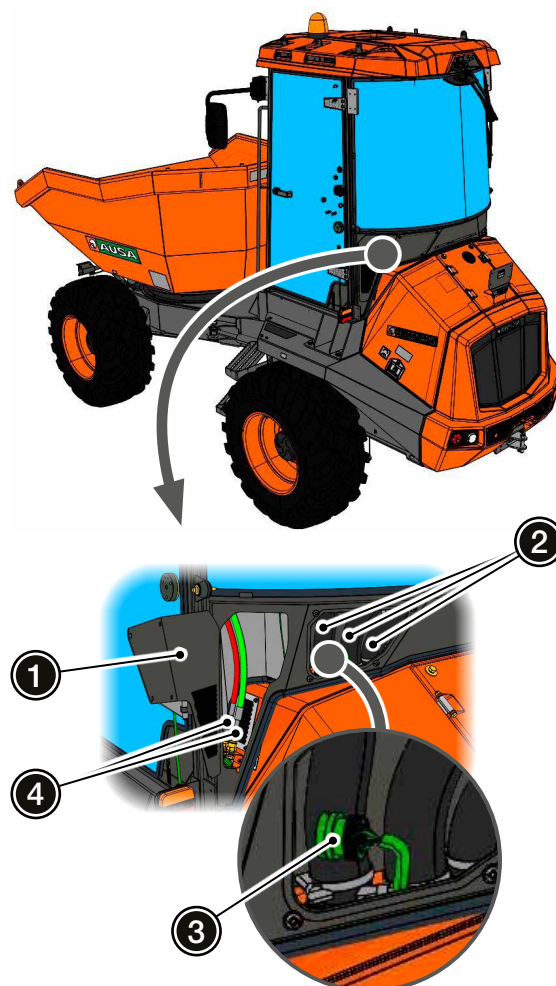
DISASSEMBLY

1. Loosen the knobs and open the access cover (1) on the skip side.
2. Pull the three tubes (2) to disconnect them from the vent sockets.
3. Close the access cover (1) on the skip side and secure it with the knobs.



4. Loosen the knobs and open the access cover (1) on the counterweight side.
5. Pull the three tubes (2) to disconnect them from the vent sockets.
6. Unscrew the electrical ring connector (3) and separate both parts to disconnect them.
7. In A/C versions, disconnect the tubes (4) with a 19 mm spanner and a 24 mm spanner. **ACCESSORY**

8. Close the access cover (1) in the counterweight side and secure it with the knobs.

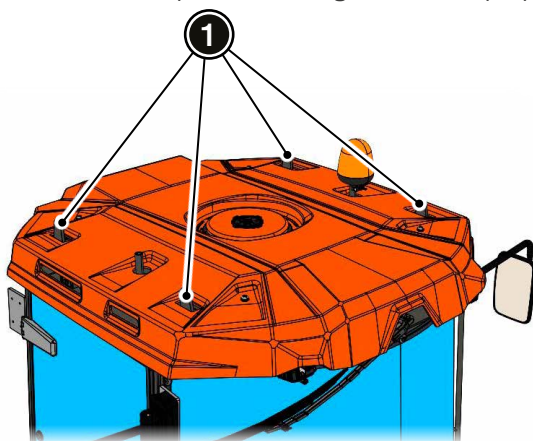


TRANSPORTING THE MACHINE

9. Loosen the four screws (1) that secure the cab to the chassis (two on each side) with a ratchet wrench and a 24 mm socket.

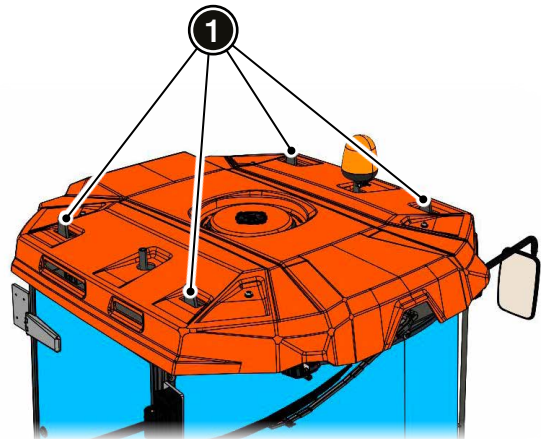


10. Remove the cab using a suitable lifting method and secure it on the four points (1) designed for that purpose.



ASSEMBLY

1. Put the cab in place using a suitable lifting method and secure it on the four points (1) designed for that purpose.



2. Tighten the four screws (1) that secure the cab to the chassis (two on each side) with a ratchet wrench and a 24 mm socket, applying a tightening torque of **100 Nm**.



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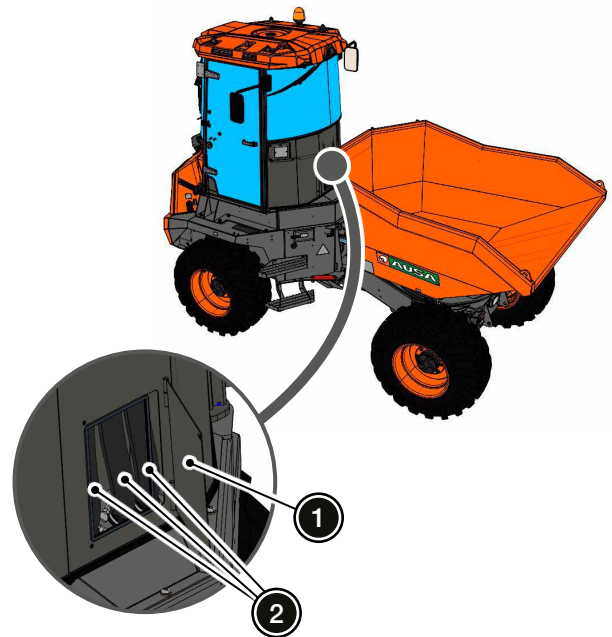
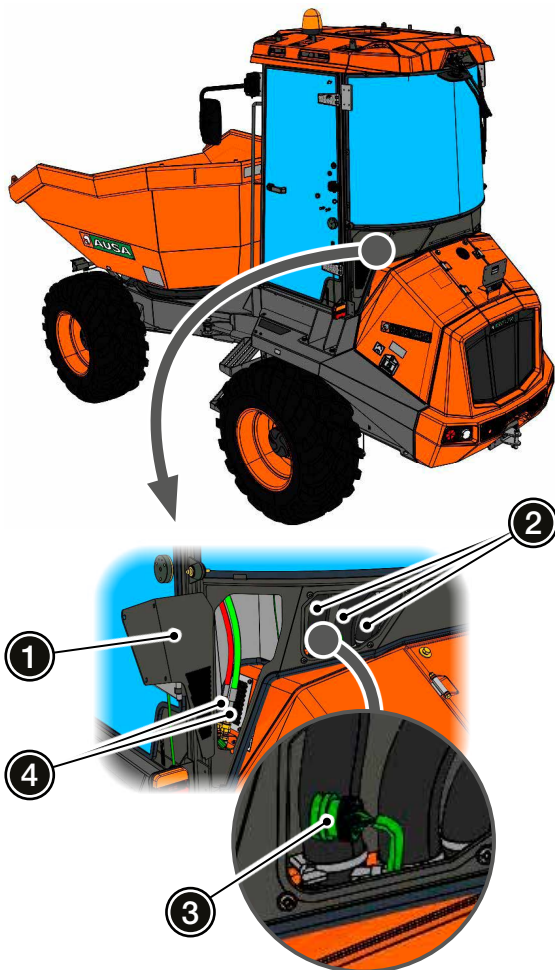
TRANSPORTING THE MACHINE

- Loosen the knobs and open the access cover (1) on the counterweight side.
- Connect the three tubes (2), inserting them into the corresponding vent sockets.
- Connect the electrical connector (3) and tighten the ring to secure the connection.
- In A/C versions, connect the tubes (4) with a 19 mm spanner and a 24 mm spanner. **ACCESSORY**
- Close the access cover (1) in the counterweight side and secure it with the knobs.
- Loosen the knobs and open the access cover (1) on the skip side.
- Connect the three tubes (2), inserting them into the corresponding vent sockets.
- Close the access cover (1) on the skip side and secure it with the knobs.

⚠ WARNING Risk of serious injury caused by high pressure liquid blowout.

Make sure the **ACCESSORY** air conditioning hoses are connected before starting the engine.

- Close the access cover (1) in the counterweight side and secure it with the knobs.



TRANSPORTING THE MACHINE

Towing

▲ CAUTION **HYDROSTATIC TRANSMISSION** Risk of burns by the hydrostatic group components.

- During and after the towing process, the hydrostatic group components might be hot; use suitable protective equipment.

NOTICE Risk of serious damage to transmission components.

- Towing the machine is only advisable if there is a fault, and when there is no other alternative, as this process might seriously damage the hydrostatic transmission.
- Repairing the fault on site is recommended whenever possible.

NOTICE Risk of damage through collisions.

- Use a solid towbar to avoid collisions.
- Make sure the parking brake is unlocked.

NOTICE Risk of damage to transmission components.

High-speed and long-distance towing might trigger heat generation and poor lubrication, which may damage the transmission components.

- Tow slowly and over short distances.
- Recommended towing speed: below 2 km/h.
- Recommended towing distance: less than 1 km.

1. Lock the chassis articulation following the procedure described in '*Immobilizing the Chassis*' in Chapter 4.
2. Proceed with the transmission bypass function following the steps set forth in '*Transmission Bypass function*' in Chapter 4.
3. Unlock the brakes following the procedure detailed in '*Unlocking the Brakes*' in Chapter 5.

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STORAGE

NOTICE Risk of damage by lack of maintenance during the storage.


- Perform the maintenance tasks on the machine also during the storage period.
- Pay special attention to the level of the fluids and the elements that might age (tyres, weather strips, rubber gaskets, etc.).
- Before using the machine after the storage period, contact the AUSA authorized dealer to proceed with the necessary specific preparations.

If the machine will not going to be used for a long time, it should be stored following the recommendations below:


- Carefully clean the machine. Carefully, dry all its parts with compressed air.
- Proceed with a complete lubrication and polish of the machine.
- Perform a general inspection and replace all worn or damaged parts.
- Paint all worn or damaged parts.
- Dismantle the battery, grease the posts with Vaseline and store it in a dry place. If it is going to be used temporarily, for other purposes, check its charge level periodically.
- Store the machine in a covered, well-ventilated area.
- Start the engine once a month and let it run until it reaches the operating temperature (70-80 °C).
- Drain the coolant circuit in temperatures below -20 °C. See *REF.R.01* in the *Advanced Maintenance Manual*.


END OF USEFUL LIFE


Machine

 **Environment:** When the machine reaches the end of its useful life, it must be decommissioned and scrapped by specialized companies, in accordance with applicable regulations in the country where the machine is being disposed.

Batteries

 **Environment:** As there is lead and sulphuric acid in the batteries, they must be disposed of in accordance with applicable environmental regulations in the country where the machine is being used. They must be disposed of as soon as possible.

 **Environment:** The batteries to be disposed of must be stored in a dry, isolated place. Do not leave them on the floor, on wooden pallets, or covered.

 **Environment:** Make sure the battery is dry and that all its caps are closed. If it is necessary to leave a battery to dry in an open area, apply Vaseline to the terminals.

 **Environment:** Label the battery to be disposed of, indicating that its use is prohibited.

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7

TECHNICAL INFORMATION

CONTENTS INDEX

SPECIFICATIONS CHART **ENGINE WITHOUT PARTICULATE FILTER (DPF)** 7-3
SPECIFICATIONS CHART **ENGINE WITH PARTICULATE FILTER (DPF)** 7-7





SPECIFICATIONS CHART **ENGINE WITHOUT PARTICULATE FILTER (DPF)**

Features	Unit	D 601 AP	D 601 AHG	D 601 APG	D 1001 APG
Specifications and weights					
Discharge type	-	Front	Swivel		
Payload	kg	6,000			10,000
Skip discharge angle	°	78	75		
Maximum towing mass	-				
▪ Trailer without brakes	kg	750			
▪ Trailer with brakes	kg	3,500			
Chassis	-	Articulated and oscillating			
▪ Steering angle	°	30			
▪ Maximum oscillating angle	°	10.7			
Water skip capacity	l	1,888	1,665		1,850
Struck skip capacity	l	2,643	2,455		3,300
Heaped skip capacity	l	3,178	3,154		3,900
Weights	-				
▪ Maximum technical allowed mass	kg	-			15,255
▪ Maximum allowed mass ^(*)	kg	11,000	10,800	11,000	15,255
▪ Unladen weight (tare)	kg	4,645	4,465	4,645	5,153
▪ Front axle maximum weight	kg	7,000			10,507
▪ Rear axle maximum weight	kg	4,300			4,748
Service Temperature	° C	-15 a +40			
Fuel tank capacity	l	69			
Roll Over Protective Structure (ROPS) frame	-	Folding to the counterweight side. According to ISO 3471:2008.			
Maximum puntual ground pressure (Front/Rear)	kg/cm ²	4.2 / 1.9			-
Uniformly distributed ground pressure (unloaded/loaded)	kg/m ²	- / -	451 / 1,016	- / -	- / -

SPECIFICATIONS CHART **ENGINE WITHOUT PARTICULATE FILTER (DPF)**

Features	Unit	D 601 AP	D 601 AHG	D 601 APG	D 1001 APG
Transmission					
Type	-	Torque converter and gearbox (Powershuttle) with 4 gears.	Hydrostatic with electronic control.	Torque converter and gearbox (Powershuttle) with 4 gears.	
Drive pump	-	-	Variable displacement axial piston pump and automatic adjustment.	-	
Drive motor	-	-	Variable displacement axial piston motor.	-	
▪ Max. service pressure	bar	-	420	-	
Travel selector (FNR)	-	Electro-hydraulic by a switch under the joystick.			
Front axle	-	Straight with self-locking differential and wheel epicyclic gearing.			
Rear axle	-	Straight with self-locking differential and wheel epicyclic gearing.			
Engine					
Brand	-	DEUTZ			
Model	-	TD3.6 L4			TCD 3.6 L4 HT
Power (SAE J1995)	hp	74			
	kW	55.4			
Maximum engine speed	Min ⁻¹	2,200			
Torque max. (SAE J1995)	N·m@rpm	330@1,600			390@1,300
N° of cylinders	-	4			
Exhaust values according to	-	StageIIIB - EPA Tier4F			
Injection	-	Common Rail			
Exhaust gas threatment	-	DOC (Diesel oxidation catalyst)			
Fuel consumption	l/h	13			-
CO ₂ emissions	kg/h	34			-
Cooling system	-	Water - torque converter- oil radiator	Water - oil radiator	Water - torque converter- oil radiator	Water-oil-air exchanger mixed radiator





SPECIFICATIONS CHART **ENGINE WITHOUT PARTICULATE FILTER (DPF)**

Features	Unit	D 601 AP	D 601 AHG	D 601 APG	D 1001 APG
Drive					
Maximum travel speed	km/h	25			
Maximum speed in slow gear	%	45			
Gradeability	%	<20			
Outside turning radius	mm	5,840	5,900		6,287
Front tyres (std)	-	405/70-20 (16.0/70-20)			500 / 60-22.5
▪ Inflation pressures	bar	4,2			5
Rear tyres (std)	-	405/70-20 (16.0/70-20)			500 / 60-22.5
▪ Inflation pressures	bar	1.9			2.5
Combinations of load and speed ratings, minimum acceptable. ⁽⁶⁾	-	152 A6 / 142 A6 / 142 A8 / 138-D			166 A7
Corresponding weight and speed	kg@km/h	3,550@30 / 2,650@40			-
Steering					
Type	-	Hydraulic power steering - Two ways acting ram.			
Max. service pressure	bar	180			
Hydraulic system					
Hydraulic tank capacity	l	60			
Hydraulic pump	-	Two gears pump taking power from engine PTO.	Double gear pump taking power from the hydrostatic pump.	Two gears pump taking power from engine PTO.	
▪ Capacity	cc/rev	23 - 23	25 - 22.5	23 - 23	
▪ Flow rate (max. rpm)	l/min	46	50	46	
▪ Max. service pressure	bar	180			
Control valve	-	Monoblock 1 spool control valve.	Monoblock 2 spool control valve.		
Electrical equipment					
Starter motor	Kw	3.2			
Alternator & regulator	A	95			
Battery	V	12			
	A	100			
	Ah	900			

SPECIFICATIONS CHART **ENGINE WITHOUT PARTICULATE FILTER (DPF)**

Features	Unit	D 601 AP	D 601 AHG	D 601 APG	D 1001 APG
Brakes					
Service	-	In all 4 wheels. Totally enclosed multiplate oil immersed discs. Hydraulically operated.			
Parking	-	Spring applied (negative) and electro-hydraulic release.			
Slope-assist system	-	-	Automatic brake activation / deactivation	-	
Sound levels					
Sound power level A-weighted measured in the environment LwA ⁽¹⁾	dB(A)	98			
Sound power level A-weighted warranted in the environment LwA ⁽¹⁾	dB(A)	101			
Measured uncertainty KpA ⁽²⁾	dB(A)	2			
A-weighted sound power level in the operator's position LpA (without cab) ⁽³⁾	dB(A)	81			
Sound pressure level A-weighted at operator's position LpA (with cab) ⁽³⁾	dB(A)	n/a			
Vibration levels					
Average acceleration value to whole body ⁽⁴⁾	m/s ²	<0.25			
Average acceleration value to hand-arm ⁽⁵⁾	m/s ²	<0.5			

Table legend

- ^(*) These data may vary depending on the accessories installed on the machine.
- ⁽¹⁾ According to ISO 6395 (Directive 2000/14/EC) and Noise Emission in the Environment by Equipment for use Outdoors Regulations 2001.
- ⁽²⁾ According to ISO 6396
- ⁽³⁾ According to ISO 6394 (EC Directives 84/532/EC, 89/EC y 95/27/EC)
- ⁽⁴⁾ According to ISO ISO 2631 (Directive 2000/44/EC)
- ⁽⁵⁾ According to ISO ISO 5349-2 (Directive 2000/44/EC)
- ⁽⁶⁾ Tires with a combination of different speed and load rating than those indicated, can give equivalent results in terms of speed and load conditions required for each vehicle according to the specifications of load variation with speed reduction established by the E.T.R.T.O. technical manual.



SPECIFICATIONS CHART **ENGINE WITH PARTICULATE FILTER (DPF)**

Features	Unit	D 601 AHG	D 601 APG	D 1001 APG
Specifications and weights				
Discharge type	-	Swivel		
Payload	kg	6,000		10,000
Skip discharge angle	°	75		
Maximum towing mass	-			
▪ Trailer without brakes	kg	750		
▪ Trailer with brakes	kg	3,500		
Chassis	-	Articulated and oscillating.		
▪ Steering angle	°	30		
▪ Maximum oscillating angle	°	10.7		
Water skip capacity	l	1,665		1,850
Struck skip capacity	l	2,455		3,300
Heaped skip capacity	l	3,154		3,900
Weights	-			
▪ Maximum technical allowed mass	kg	11,000	11,026	15,255
▪ Maximum allowed mass (*)	kg	11,000	11,200	15,255
▪ Unladen weight (tare)	kg	4,851	4,687	5,153
▪ Front axle maximum weight	kg	7,000	7,400	10,507
▪ Rear axle maximum weight	kg	4,300		4,748
Service Temperature	° C	-15 a +40		
Fuel tank capacity	l	69		
Roll Over Protective Structure (ROPS) frame	-	Folding to the counterweight side. According to ISO 3471:2008.		
Maximum puntual ground pressure (Front/Rear)	kg/cm ²	4.2 / 1.9		- / -
Uniformly distributed ground pressure (unloaded/loaded)	kg/m ²	- / -		- / -

SPECIFICATIONS CHART **ENGINE WITH PARTICULATE FILTER (DPF)**

Features	Unit	D 601 AHG	D 601 APG	D 1001 APG
Transmission				
Type	-	Hydrostatic with electronic control.	Torque converter and gearbox (Powershuttle) with 4 gears.	
Drive pump	-	Variable displacement axial piston pump and automatic adjustment.	-	
Drive motor	-	Variable displacement axial piston motor.	-	
▪ Max. service pressure	bar	420	-	
Travel selector (FNR)	-	Electro-hydraulic by a switch under the joystick.		
Front axle	-	Straight with self-locking differential and wheel epicyclic gearing.		
Rear axle	-	Straight with self-locking differential and wheel epicyclic gearing.		
Engine				
Brand	-	DEUTZ		
Model	-	TD3.6 L4 STAGE V - EPA/CARB TIER 4	TCD 3.6 L4 HT STAGE V - EPA/CARB TIER 4	
Power (SAE J1995)	hp	74.3		
	kW	55.4		
Maximum operating speed	Min ⁻¹	2,200		
Torque max. (SAE J1995)	N·m@rpm	340@1,500		405@1,300
N° of cylinders	-	4		
Exhaust values according to	-	STAGE V - EPA/CARB TIER 4		
Injection	-	Common Rail		
Exhaust gas threatment	-	DPF (Diesel Particulate Filter)		
Fuel consumption	l/h	-	-	
CO ₂ emissions	kg/h	-	-	
Cooling system	-	Water - oil radiator		Water-oil-air exchanger mixed radiator





SPECIFICATIONS CHART **ENGINE WITH PARTICULATE FILTER (DPF)**

Features	Unit	D 601 AHG	D 601 APG	D 1001 APG
Drive				
Maximum travel speed	km/h	25		
Maximum speed in slow gear	%	45		
Gradeability	%	<20		
Outside turning radius	mm	5,900		6,287
Front tyres (std)	-	405/70-20 (16.0/70-20)		500 / 60-22.5
▪ Inflation pressures	bar	4,2		5
Rear tyres (std)	-	405/70-20 (16.0/70-20)		500 / 60-22.5
▪ Inflation pressures	bar	1.9		2.5
Combinations of load and speed ratings, minimum acceptable. ⁽⁶⁾	-	152 A6 / 142 A6 / 142 A8 / 138-D		166 A7
Corresponding weight and speed	kg@km/h	3,550@30 / 2,650@40		-
Steering				
Type	-	Hydraulic power steering - Two ways acting ram.		
Max. service pressure	bar	180		
Hydraulic system				
Hydraulic tank capacity	l	60		
Hydraulic pump	-	Double gear pump taking power from the hydrostatic pump.	Two gears pump taking power from engine PTO.	
▪ Capacity	cc/rev	25 - 22.5	23 - 23	
▪ Flow rate (max. rpm)	l/min	50	46	
▪ Max. service pressure	bar	180		
Control valve	-	Monoblock 2 spool control valve.		
Electrical equipment				
Starter motor	Kw	3.2		
Alternator & regulator	A	95		
Battery	V	12		
	A	100		
	Ah	900		

SPECIFICATIONS CHART **ENGINE WITH PARTICULATE FILTER (DPF)**

Features	Unit	D 601 AHG	D 601 APG	D 1001 APG
Brakes				
Service	-	In all 4 wheels. Totally enclosed multiplate oil immersed discs. Hydraulically operated.		
Parking	-	Spring applied (negative) and electro-hydraulic release.		
Slope-assist system	-	Automatic brake activation / deactivation	-	
Sound levels				
Sound power level A-weighted measured in the environment LwA ⁽¹⁾	dB(A)	98		
Sound power level A-weighted warranted in the environment LwA ⁽¹⁾	dB(A)	101		
Measured uncertainty KpA ⁽²⁾	dB(A)	2		
A-weighted sound power level in the operator's position LpA (without cab) ⁽³⁾	dB(A)	81		
Sound pressure level A-weighted at operator's position LpA (with cab) ⁽³⁾	dB(A)	n/a		
Vibration levels				
Average acceleration value to whole body ⁽⁴⁾	m/s ²	<0.25		
Average acceleration value to hand-arm ⁽⁵⁾	m/s ²	<0.5		

Table legend

- ^(*) These data may vary depending on the accessories installed on the machine.
- ⁽¹⁾ According to ISO 6395 (Directive 2000/14/EC) and Noise Emission in the Environment by Equipment for use Outdoors Regulations 2001.
- ⁽²⁾ According to ISO 6396.
- ⁽³⁾ According to ISO 6394 (EC Directives 84/532/EC, 89/EC y 95/27/EC).
- ⁽⁴⁾ According to ISO ISO 2631 (Directive 2000/44/EC).
- ⁽⁵⁾ According to ISO ISO 5349-2 (Directive 2000/44/EC).
- ⁽⁶⁾ Tires with a combination of different speed and load rating than those indicated, can give equivalent results in terms of speed and load conditions required for each vehicle according to the specifications of load variation with speed reduction established by the E.T.R.T.O. technical manual.

8

MACHINE MAINTENANCE

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Information: Inspections of the main systems of the machine must be carried out, and their results should be recorded in case they are required by the Work Authorities.

The aim of maintenance operations is to achieve an optimum performance and extend the useful life of the machine.

To achieve these objectives, the machine must be kept in good condition, and safe, harmless working routines must be performed.

There are two types of maintenance tasks:

- **BASIC MAINTENANCE**

These are the procedures that AUSA considers that may be carried out by the operator of the machine.

See '*Basic Maintenance Plan*'.

- **ADVANCED MAINTENANCE**

It is recommended that these procedures are carried out by the AUSA authorized dealer.

See '*Advanced Maintenance Plan*'.

PRELIMINARY CONSIDERATIONS

⚠ DANGER Risk of death or serious injuries by operating maintenance tasks without safety measures.

Carry out all repair and maintenance operations with the following measures:

- Machine unloaded.
- The travel selector (FNR) in NEUTRAL position.
- Wheels blocked with suitable chocks.
- Unless otherwise specified, do not start the engine during maintenance operations.

- **Preparation before chassis alignment:**

Lock the chassis when carrying out maintenance tasks that require the chassis to be aligned, following the procedure described in '*Immobilizing the Chassis*' in Chapter 4.

- **Preparation before raising the skip:**

Lock the skip when carrying out maintenance tasks that require the skip to be in the raised position, following the procedure described in '*Immobilizing the Skip*' in Chapter 4.

- **Preparation before electrical system tasks:**

Before performing any tasks on the electrical system, disconnect the battery following the indications specified in '*Disconnecting the Battery*' in Chapter 4.

NOTICE Risk of damage by unplugged lines or hoses.

Any open line or hose must be plugged immediately to avoid oil spillage and prevent foreign bodies from entering the circuit.

NOTICE Risk of damage by cleaning with unsuitable fabrics.

- Clean using only lint-free fabrics.
- Keep the work area clean during maintenance operations.

PRELIMINARY CONSIDERATIONS

Manipulating Fluids

▲ WARNING Risk of electric shock by extinguishing a fire with water.

- In the event of a fire, use fire extinguishers with dry carbon dioxide or foam. Do not use water.

See 'Fire' in Chapter 5.

▲ CAUTION Risk of skin irritation through exposure to fluids.

Prolonged skin exposure to the fluids may cause irritation.

- Use rubber gloves and protective goggles.
- After handling fluids, wash your hands thoroughly with water and soap.

NOTICE Fluids must be stored in a locked place, with suitable label identification.

Consider applicable local laws in relation to the storage of chemical products and/or flammable liquids.

Information: In the event of accidental spillage, use sand or an approved absorbing powder. Then, scrape the compound and dispose of it as a chemical substance.

Environment: In the event of leaks, take all the necessary precautions to contain them and reduce their impact.

Keep used fluids in special containers for their subsequent disposal through specialized collection points.

- **CONTACT WITH THE EYES**

Rinse thoroughly with running water. If eye irritation persists, visit the nearest health center.

- **INGESTION**

Do not induce vomiting, and visit the nearest health center.

- **EXCESSIVE AND/OR PROLONGED SKIN CONTACT**

Wash with water and soap.





ACCESS FOR MAINTENANCE

Side Covers

The machine has two side covers (1) for accessing engine components and performing maintenance tasks.

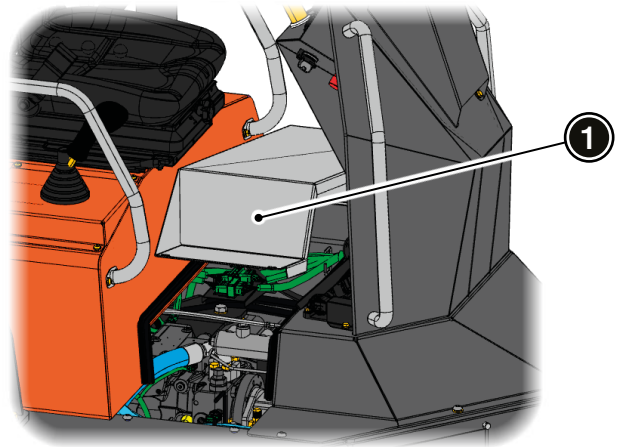
Information: Rotate the handle to unlock the cover.

Maintenance covers have a vandal-proof safety device (lock).



Floor Plate

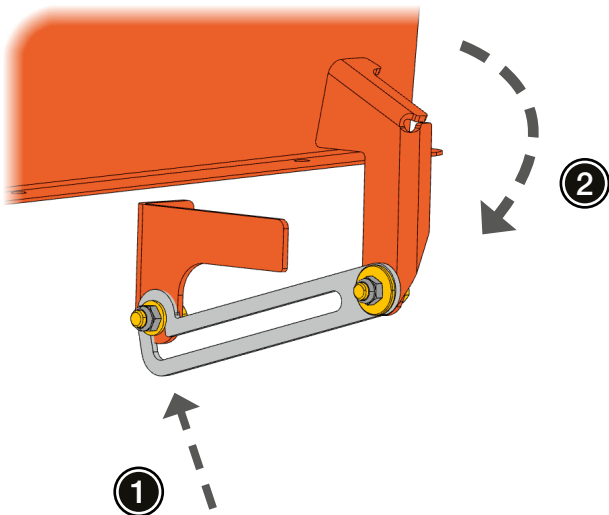
The machine has a removable plate (1) on the floor for performing maintenance tasks on several components.



Information: To remove the floor plate, remove the four screws (two on each side) with an 8 mm hex key.

UNLOCKING MAINTENANCE COVERS

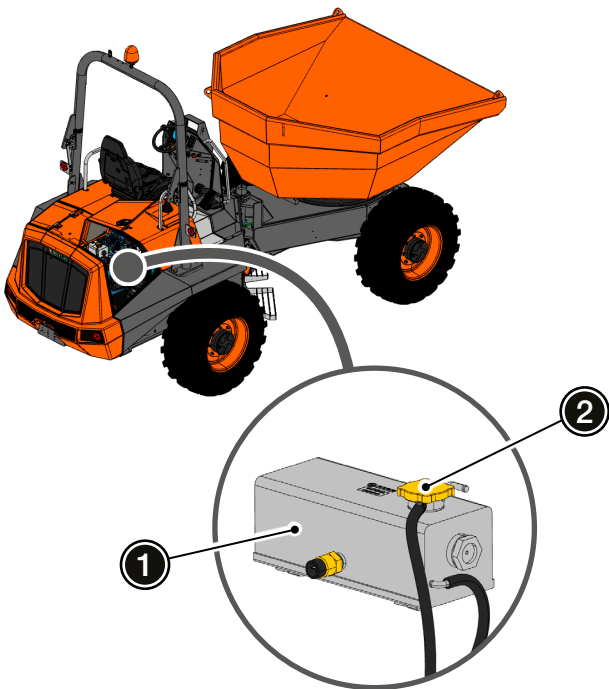
Push the handle upwards (1) to unlock the cover and close it (2).



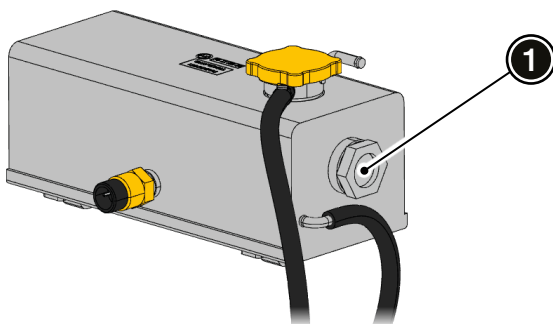
CORRECTIONS, ADJUSTMENTS OR REPLACEMENTS

Refilling Coolant

1. Open the maintenance cover to access the expansion tank (1).
2. Remove the expansion tank cap (2).



3. Fill the expansion tank with coolant until it is between the minimum and maximum level mark (1).



4. Replace the cap and close the maintenance cover.

Refilling Engine Oil

NOTICE **ENGINE WITH PARTICULATE FILTER (DPF)** Part of the fuel might get mixed with the engine oil during the particulate filter (DPF) regeneration process. This may cause the oil to dilute and increase quantity.

If the oil level increases over the maximum mark on the dipstick, this means that the oil has diluted excessively, and may cause malfunction. If this happens, change the oil immediately following the procedure described in the advanced maintenance manual.

A system diagnosis is required if the DPF regeneration interval is too high.

Contact an AUSA authorized AUSA dealer.

1. Open the maintenance cover to access the engine compartment.

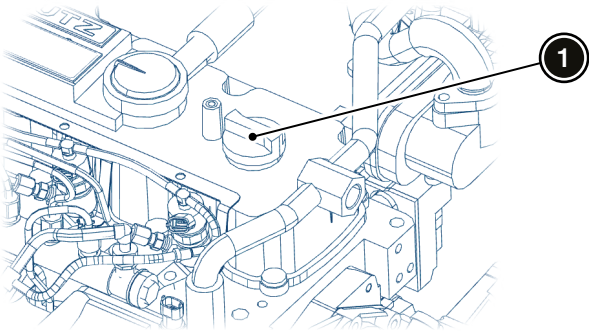


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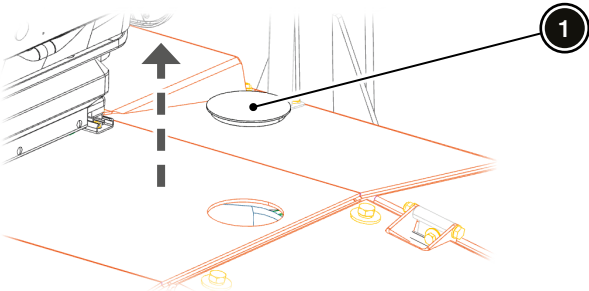


CORRECTIONS, ADJUSTMENTS OR REPLACEMENTS

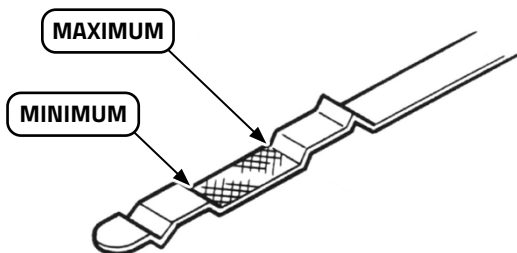
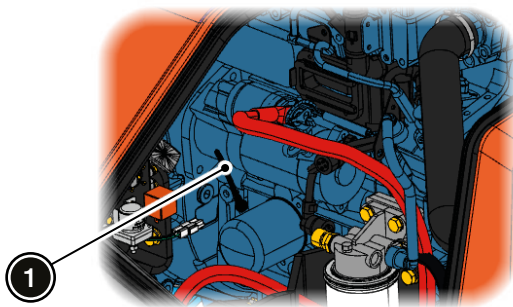
2. Remove the engine oil filling cap (1).



3. Remove the plastic cap (1) to pour engine oil.



4. Fill with oil until it is between the minimum and maximum level on the dipstick (1).



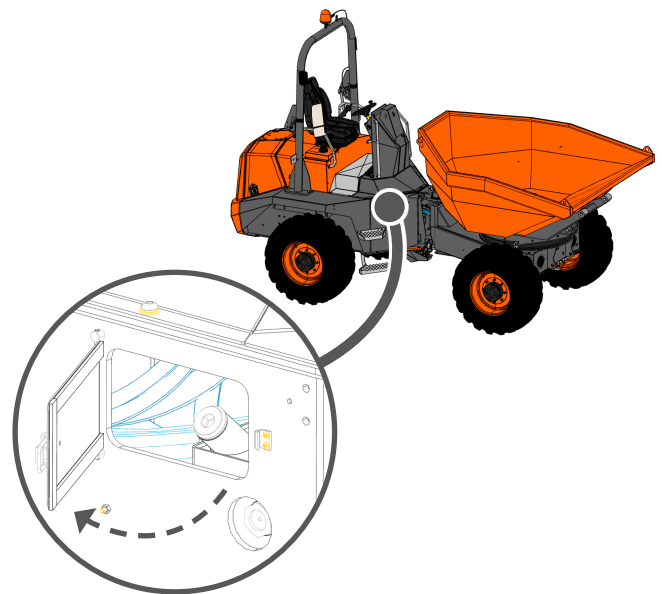
Information: Use a funnel to avoid oil spills.

5. Replace the engine oil filling cap.
6. Replace the plastic cap and close the maintenance cover.

Refilling Hydraulic Oil

1. Place the machine on a horizontal surface.
2. Apply the parking brake.
3. Turn off the lights **ACCESSORY** and stop the engine.
4. To access the hydraulic oil filling neck, open the cap located on the right side of the machine.

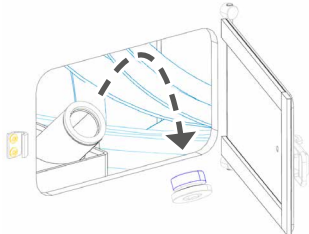
Information: This cap might have a vandal-proof safety device.



5. Clean the area around the hydraulic oil cap to prevent accumulated dirt, water or other substances from entering the tank during refilling.

CORRECTIONS, ADJUSTMENTS OR REPLACEMENTS

- Unscrew and remove the hydraulic oil tank cap with a 17 mm hex key.

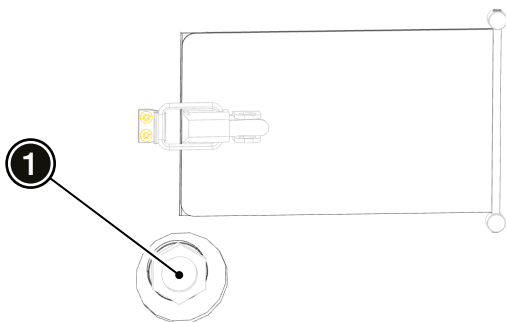


- Fill up the tank, ensuring that its maximum capacity is not exceeded. To do so, check that the level is at the center of the mark (1).

NOTICE When checking the oil level, the skip must be in a straight, horizontal position.

Information: Avoid spilling oil outside the tank. Immediately clean any spillage, and dry the surface thoroughly.

Use a funnel to avoid oil spills.

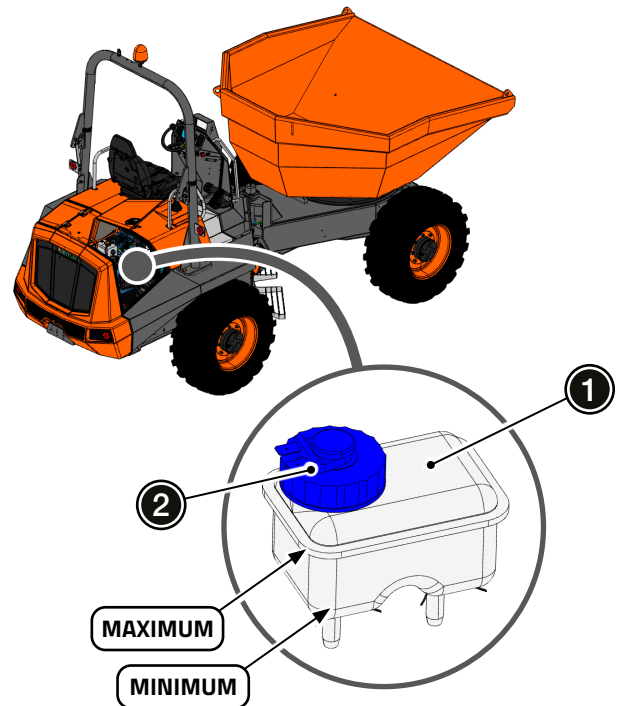


- Screw on the tank cap to a torque of **10 Nm**.
- Close the cover located on the side of the machine.

Information: Secure the cap using the vandal-proof safety device.

Refilling Brake Fluid

- Open the maintenance cover to access the brake fluid tank (1).
- Remove the tank cap (2).



- Fill the tank with brake fluid up to the maximum mark, while avoiding spills.
- Replace the cap and close the maintenance cover.



CORRECTIONS, ADJUSTMENTS OR REPLACEMENTS

Hydrostatic Oil Cartridge Check

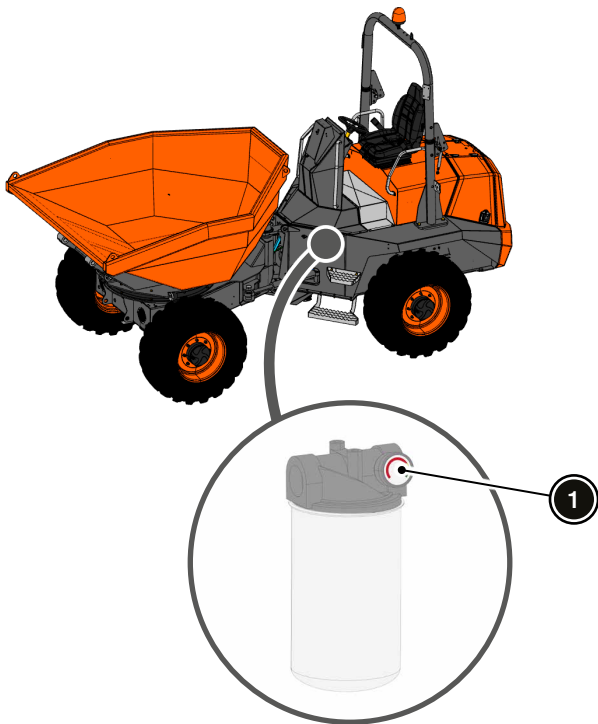
HYDROSTATIC TRANSMISSION

1. Access the fuel tank intake, opening the cover located on the side of the machine.

Information: This cover might have a vandal-proof safety device.

Information: Use a torch and check diagonally to check.

2. With the engine running and at full speed, the clogged indicator gauge needle (1) should be in the green or yellow zone.



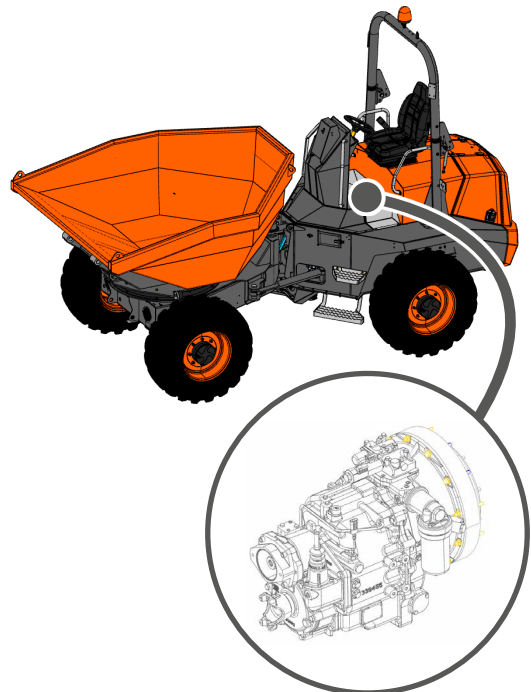
If you approach or are in the red zone, do not attempt to operate with the machine without first contacting the AUSA authorized dealer.

Refilling Torque Converter and Gearbox Oil

POWERSHUTTLE TRANSMISSION

1. Remove the floor plate to access the top of the transmission.

Information: The floor plate does not need to be removed to check the oil level.

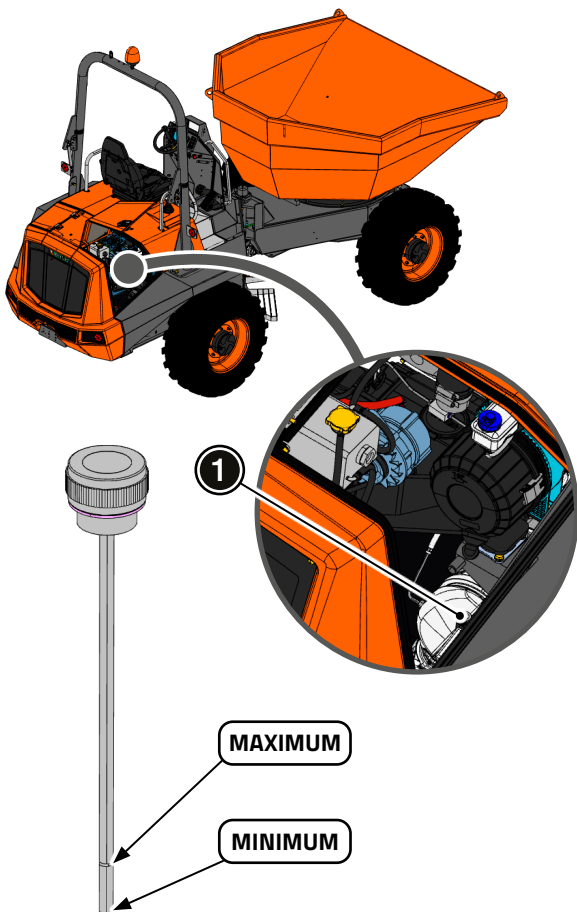


2. Apply the parking brake.
3. Put the gear lever in NEUTRAL.
4. Start the engine and keep it idling for 5 minutes.
5. Stop the engine.

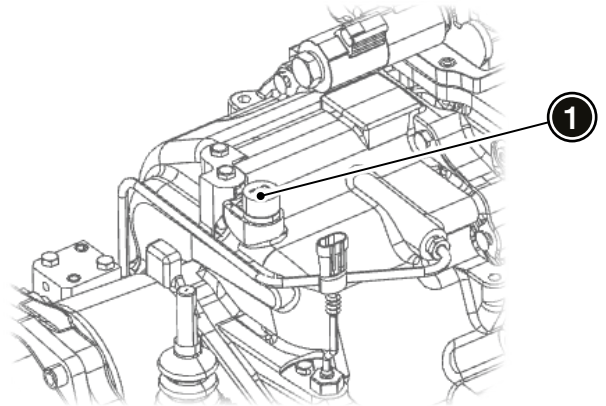
CORRECTIONS, ADJUSTMENTS OR REPLACEMENTS

6. Check the oil level of the torque converter and gearbox. This should be between the minimum and maximum level on the dipstick (1).

Information: Open the maintenance cover to access the dipstick.



7. Remove the oil filling cap (1) for the torque converter and gearbox.



8. Fill with oil until it is between the minimum and maximum level on the dipstick.

Information: Use a funnel to avoid oil spills.

9. Replace the oil filling cap of the torque converter and gearbox.
10. Repeat steps 2 to 6 to check the oil level of the torque converter and gearbox. If necessary, refill following steps 7 to 8.
11. Reinstall the floor plate.





CORRECTIONS, ADJUSTMENTS OR REPLACEMENTS

Replacing or Cleaning the air Filter

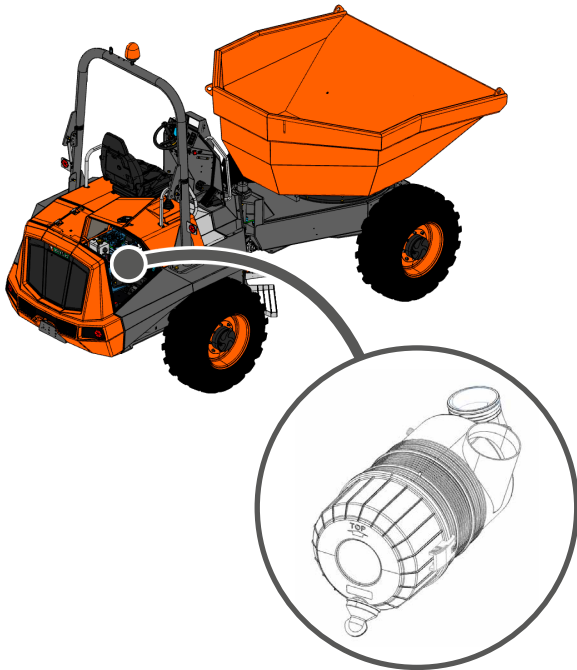
▲ WARNING Risk of death or serious injuries by working on the machine with running engine.

- Before carrying out any task on the machine, ensure that the engine is stopped and the keys are removed from the ignition switch.

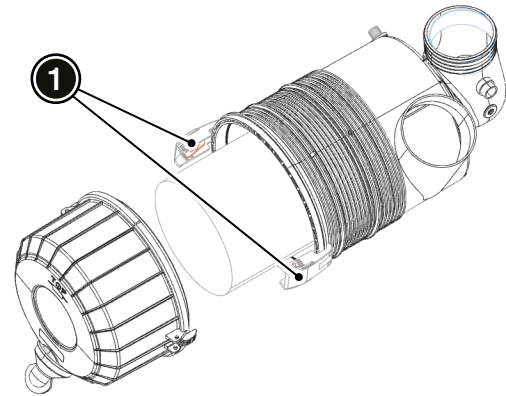
▲ CAUTION Risk of burns by contacting with engine surface.

- Allow the engine to cool down for 30 minutes to avoid the risk of burns.

1. Open the maintenance cover to access the air filter.



2. Pull the clamps (1) to remove the filter cover.



3. Clean the filter cover with pressurized air or water.

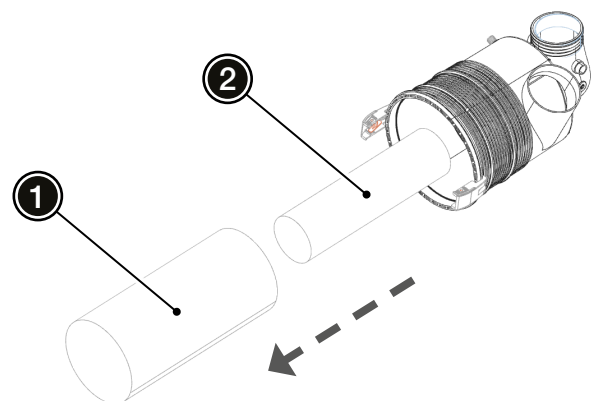
NOTICE The cleaning compressed air must not exceed 5 bar.

4. Remove the outer filter (1) and clean it with pressurized air.

NOTICE If there are signs of damage on the external filter, replace it with a new one.

5. Remove the inner air filter (2).

NOTICE Do not clean the inner air filter with pressurized air. If necessary, replace it with a new one.



CORRECTIONS, ADJUSTMENTS OR REPLACEMENTS

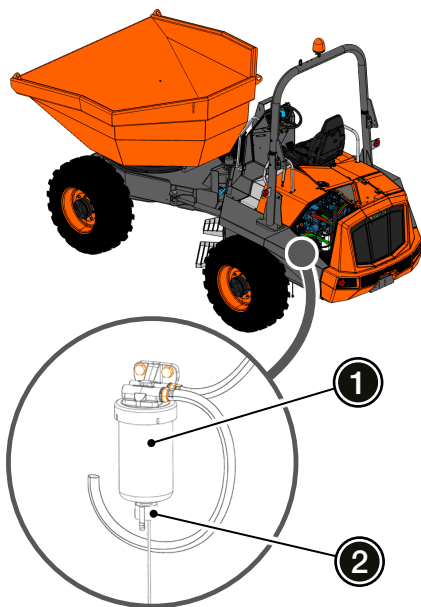
6. Clean inside the filter housing.

NOTICE Exercise special caution when cleaning the housing with compressed air, so that no foreign objects enter the suction line.

7. Install the inner air filter (2) back in place inside the housing.
8. Install the outer air filter (1) back in place inside the housing.
9. Install the filter cover and affix it using the clamps.
10. Close the maintenance cover.

Fuel Prefilter Water Drain

1. Open the maintenance cover to access the fuel prefilter (1).



NOTICE Place a container beneath the filter area to collect spills.

2. Unscrew the prefilter drainage bolt (2).
3. Wait long enough for all the water to come out.
4. Re-tighten the prefilter drainage bolt, applying a torque of **1.6 ± 0.3 Nm**.
5. Close the maintenance cover.

Depressurizing the Hydraulic Circuit

▲ WARNING Risk of death or serious injuries by fluid projection.

- Before carrying out repairs or maintenance tasks on the hydraulic circuit, it needs to be depressurized.

1. Make sure that the machine is stationary on a leveled surface.
2. Ensure the skip is in horizontal position (at rest).
3. Insert the key in the ignition switch and turn it to the IGNITION position.

Information: Turn the ignition switch to the IGNITION position, but do not start the engine.

4. Move the joystick twice in each direction:

- Forward.
- Reverse.
- Left. **SWIVEL SKIP**
- Right. **SWIVEL SKIP**





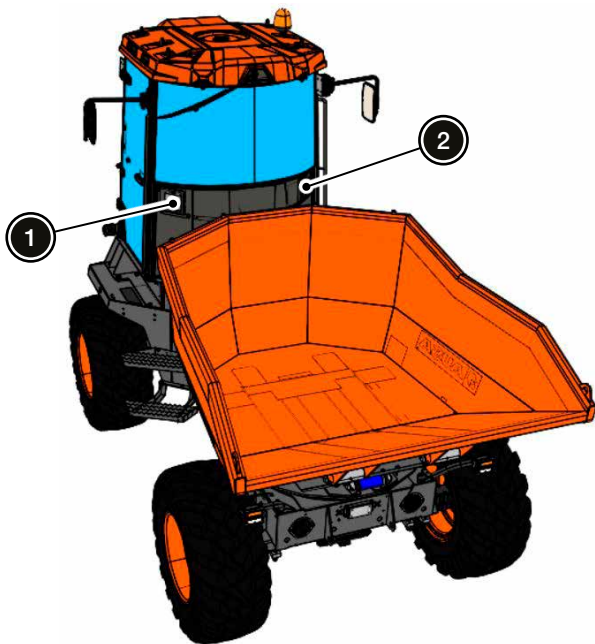
CORRECTIONS, ADJUSTMENTS OR REPLACEMENTS

Refilling the Windscreen Wipers Water

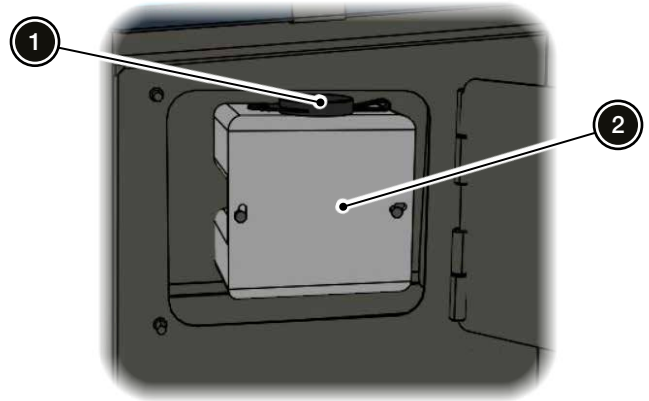
ACCESSORY

The machine has two windscreen wiper water tanks available:

- A tank for the counterweight side wipers (1).
- A tank for the skip side wipers (2).



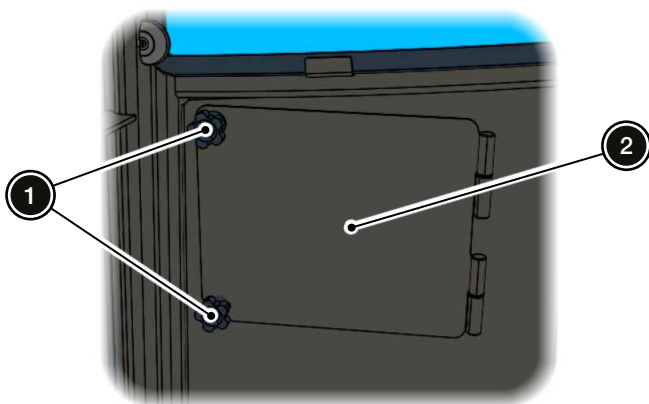
2. Remove the tank (2) cap (1).



3. Fill the tank with windscreen washer fluid; avoid spilling.
4. Reinstall the tank cap.
5. Close the tank access cover (1) and secure it with the knobs.

To refill either of the two tanks, proceed as follows:

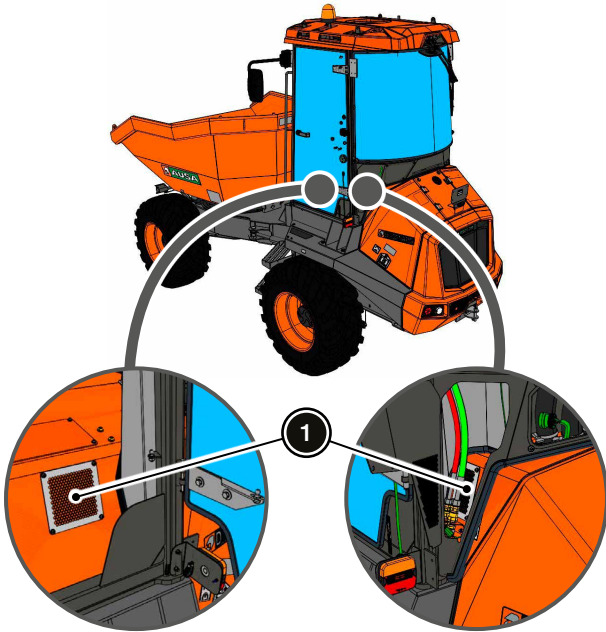
1. Loosen the knobs (1) and open the tank access cover (2).



CORRECTIONS, ADJUSTMENTS OR REPLACEMENTS

Inspecting or Changing Cab Filters **ACCESSORY**

The machine cab has two air filters (1).

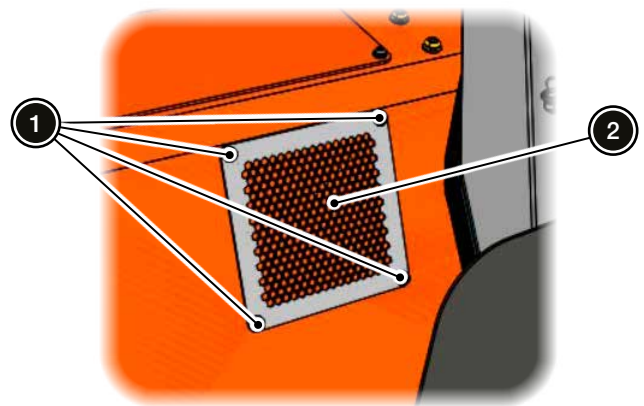


NOTICE Cleaning the filters is not recommended, as they can be damaged and lose their properties.

Information: How often this task should be carried out depends on the type of terrain where the machine operates.

The inspection or replacement procedure is as follows:

1. Access the corresponding filter.
 - Cab interior filter: Open the door.
 - Exterior filter: Loosen the knobs and open the access cover.
2. To remove the filter grille (2), remove the four screws (1) with a 4 mm hex key.



3. Remove the filter and replace it with a new one.

Information: To reinstall the filters, follow the instructions in reverse order.

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FLUIDS AND LUBRICANTS

NOTICE Risk of damage caused by low fluid levels.

Always check the decals on fluids and lubricants containers to ensure that they meet the required specifications.

Fluid or lubricant	Specifications	Observations	Capacity
Fuel	<ul style="list-style-type: none"> ▪ Diesel EN 590 ▪ Diesel ASTM D975 	See 'Fuel Specifications'.	69 litres
Engine oil	<ul style="list-style-type: none"> ▪ Deutz DQC IV-10LA ▪ SAE 10W40 	See 'Engine Oil'.	8 litres
Engine coolant	Deutz DQC CA-14	See 'Engine Coolant'.	13.5 litres
Engine coolant (machine with cabin) ACCESSORY	Deutz DQC CA-14	See 'Engine Coolant'.	15 litres
Hydraulic circuit oil	<ul style="list-style-type: none"> ▪ ISO VG-32 (ambient temperature below 10 °C) ▪ ISO VG-46 (ambient temperature between 10 °C and 40 °C) (1) ▪ ISO VG-68 (ambient temperature above 40 °C) 	<ul style="list-style-type: none"> ▪ ISO 6743/4-HV ▪ DIN-51524 Part 3 HVLP. 	60 litres
Hydraulic circuit oil ACCESSORY	<ul style="list-style-type: none"> ▪ ISO HLP-32 (ambient temperature below 10 °C) ▪ ISO HLP-46 (ambient temperature between 10 °C and 40 °C) (1) ▪ ISO HLP-68 (ambient temperature above 40 °C) 	Synthetic and biodegradable.	60 litres
Torque converter and gearbox oil ⁽²⁾ POWERSHUTTLE TRANSMISSION	<ul style="list-style-type: none"> ▪ SAE 10W grade or ATF fluid ▪ CATERPILLAR TO-4 ▪ ALLISON C-4 	-	16 litres
Transfer box oil	<ul style="list-style-type: none"> ▪ API GL-4 ▪ SAE J300: 10W-30 ▪ SAE J306: 75W-80 ▪ API GL-4 / GL-5 ▪ SAE J306: 80W-90 ▪ MIL-L-2105D 	-	1.3 litres
Front and rear axle differential oil	<ul style="list-style-type: none"> ▪ API GL-4 (UTTO) ▪ J20/C 	Oil with LS additive must be used in all cases.	8.6 litres
Front and rear axle hub reduction oil	<ul style="list-style-type: none"> ▪ MF M1143 ▪ API GL-4 / GL-5 (SAE 80W-90) 		0.8 litres
Brake fluid	LHM (green) type mineral oil (ISO VG32)	See 'Brake Fluid'.	1 litre
Calcium grease for grease points	Consistency NLGI-3	-	-
Air conditioning ACCESSORY	R134a refrigerant for cooling systems	-	700 grams
	Lubricating oil for air conditioning equipment	-	40 millilitres

Table of the legend

(1) The machine leaves the factory with this oil viscosity for the hydraulic circuit.

(2) Oil part number available in the Spare Parts manual.

FLUIDS AND LUBRICANTS

Fuel Specifications

- Use only diesel EN 590 or ASTM D975 fuels.
- Do not use fuels with a sulphur content above 0.0015% (15 ppm).
- Apart from being necessary to meet approval requirements, a low sulphur level is also compulsory in areas regulated by US EPA. In those areas, use No.2-D S15 diesel fuel as per the following criterion:
 - As an alternative to No.2-D.
 - As an alternative to No.1-D for ambient temperatures below -10 °C.

Information: No.2-D is a distillate fuel of lower volatility for engines in industrial and heavy mobile service (SAE J313).

- Fuel cetane rating:
 - Minimum recommended: 45.
 - A rating over 50 is recommended, especially in ambient temperatures below -20 °C or heights above 1,500 m.

Engine Oil

DEUTZ recommends only using DEUTZ oils for its engines.

See list of approved oils in: <https://www.deutz.com/en/service/parts-and-liquids/operating-liquids/oils>

Brake Fluid

NOTICE Risk of brake system damage by using unsuitable fluids.

- To avoid serious damage in the brake system, do not use fluids other than those recommended. When re-filling, do not mix different fluids.
- Do not use synthetic brake fluids (DOT4) as per SAE J1703 under any circumstances.

Engine Coolant

Information: The preparation of the cooling system mixture is made with a system protective agent as per DEUTZ DQC CA-14, adding water.

To ensure the correct operation of the engine's cooling system, the water used for preparing the coolant must meet the following requirements:

Parameter	Minimum	Maximum	ASTM
pH	6.5	8.5	D1293
Chlorine (Cl)	-	100 mg/L	D512 D4327
Sulphate (SO ₄)	-	100 mg/L	D516
Total hardness (CaCO ₃)	-	3.56 mmol/L	D1126
	-	356 mg/L	D1126
	-	20.0 °dGH	-
	-	25.0 °e	-
	-	35.6 °fH	-

Depending on the ambient temperature where the machine is going to operate, prepare the coolant mixture following the recommendations below:

Protective agent percentage	Water percentage	Minimum protection temperature
35% (minimum)	65%	-22 °C
40%	60%	-28 °C
45%	55%	-35 °C
50% (maximum)	50%	-41 °C





FLUIDS AND LUBRICANTS

The machine leaves the factory with coolant with anti-foaming additives and inhibitors, to prevent corrosion of the casting, steel, weldings and mainly the aluminium and light alloys. The coolant has the following properties:

- Concentration of glycol or similar compound: 50%
- Freeze point (temperature at which the first crystals appear): -35 ~ -37%
- Boiling point:
 - At atmospheric pressure: 107 ~ 110 °C
 - In pressurized circuit: 143 ~ 145 °C

- Complies with the following standards:

- UNE-26.361 - 88
- INTA 157413
- BRITISH STANDARD 6580
- AFNOR NFR 15601
- ASTM D 3306, D 4985
- SAE J 1034
- VWTL-774
- DEUTZ DQC CA-14

Information: The machine leaves the factory with a coolant concentration of 50-50%.

BASIC MAINTENANCE PLAN

▲ WARNING Risk of death or serious injuries as a result of non maintenance.

All these tasks are essential for the correct and safe operation of the machine.

As part of the basic maintenance plan, the following tasks must be performed:

- Basic Maintenance Every 8 Hours.
- Basic Maintenance Every 50 Hours.

NOTICE Contact an authorized AUSA dealer if any parts are loose, detached or damaged, or if there are vibrations, noises, etc.

ADVANCED MAINTENANCE PLAN

▲ WARNING Risk of death or serious injuries as a result of non maintenance.

All these basic and advanced maintenance tasks are essential for the correct and safe operation of the machine.

- An authorized AUSA dealer must inspect the machine.

As part of the advanced maintenance plan, the following tasks must be performed:

- First 50 Hours Advanced Maintenance.
- Advanced Maintenance Every 250 Hours.
- Advanced Maintenance Every 500 Hours.
- Advanced Maintenance Every 1,000 Hours.
- Advanced Maintenance Every 1,500 Hours.
- Advanced Maintenance Every 3,000 Hours.

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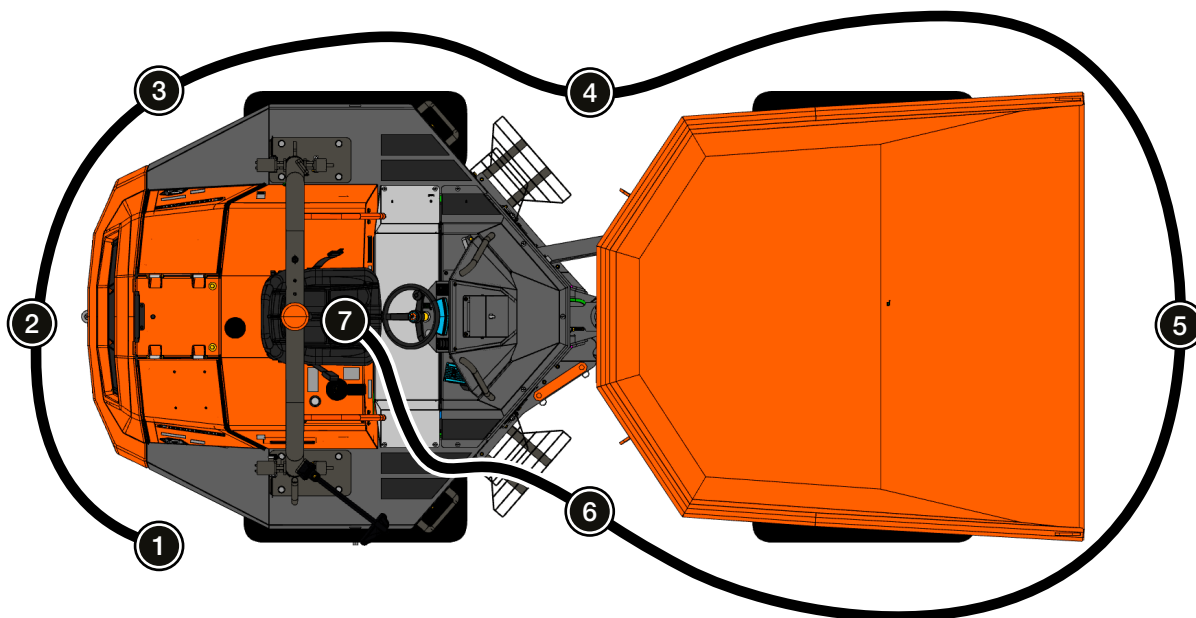


BASIC MAINTENANCE EVERY 8 HOURS

AT THE BEGINNING OF THE SHIFT

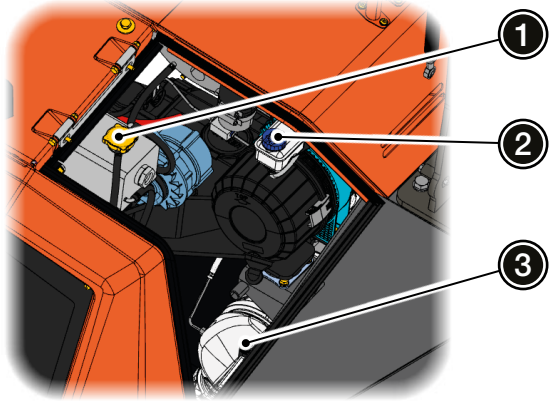
NOTICE If any anomaly is detected during the daily inspection, contact an authorized AUSA dealer.

Before using the machine, check the following: To make the daily inspection more efficient, it is recommended to follow the sequence below:



Position	Task	Description
General	If the machine includes accessories, carry out their appropriate maintenance operations. ACCESSORY	Maintenance tasks for optional elements are described in <i>Chapter 9</i> .
	Check the following components for leaks: <ul style="list-style-type: none"> ▪ Engine. ▪ Transmission. ▪ Hydraulic system. ▪ Cooling system. ▪ Brake system. ▪ Exhaust system. ▪ Air conditioning system. ACCESSORY 	NOTICE Replace any damaged hose or tube immediately. The replacement components must always have the same characteristics as the original ones. If the path of a hose or tube is modified, pay special attention to their acceptable radius to avoid bottleneck effects. <ul style="list-style-type: none"> ▪ Hoses and fixing flange brackets. ▪ Hoses. ▪ Couplings. ▪ Fluid stains on the floor or any part of the machine.
	Check the condition of plates and decals.	See ' <i>Identification Plates and Decals</i> ' in <i>Chapter 2</i> .

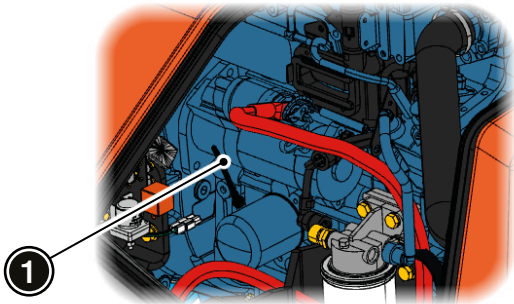
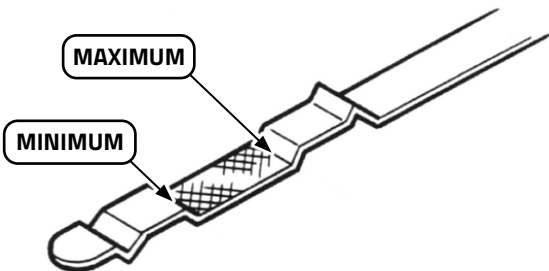
AT THE BEGINNING OF THE SHIFT

Position	Task	Description
General	Verify that the following parts are in good condition: <ul style="list-style-type: none"> Protectors. Covers. Caps and plugs. Safety props. Locks. 	N/A
	Check the tyre pressure and wear.	See <i>Chapter 7</i> .
<div style="text-align: center; font-size: 2em; font-weight: bold; border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: inline-block; margin-bottom: 10px;">1</div>	Check the closing condition of the maintenance cover.	N/A
	Check that the manuals are in the document holder.	N/A
	Check the condition of the air filter element. Clean it if necessary.	See <i>'Replacing or Cleaning the Air Filter'</i> .
	Check the condition of the air filter intake hose.	Check for abrasions or cracked rubber. Check that the flanges are attached properly.
	Check the level of the following fluids and, if necessary, refill the tank. <ul style="list-style-type: none"> Coolant (1). Brake fluid (2). Torque converter and gearbox oil (3). <div style="text-align: center; background-color: black; color: white; padding: 2px; font-weight: bold; font-size: 0.8em;">POWERSHUTTLE TRANSMISSION</div>	<ul style="list-style-type: none"> See <i>'Refilling Coolant'</i>. See <i>'Refilling Brake Fluid'</i>. See <i>'Refilling Torque Converter and Gearbox Oil'</i>. <div style="text-align: center; background-color: black; color: white; padding: 2px; font-weight: bold; font-size: 0.8em;">POWERSHUTTLE TRANSMISSION</div> 
	Check the condition of alternator belt.	N/A
	Check the condition of the air conditioning belt. <div style="text-align: center; background-color: black; color: white; padding: 2px; font-weight: bold; font-size: 0.8em;">ACCESSORY</div>	N/A
	Check the condition of the engine mounts.	N/A
Check the condition of the electrical wiring and its connections.	N/A	

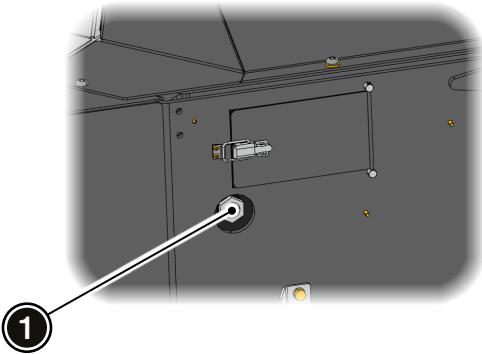
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BASIC MAINTENANCE EVERY 8 HOURS

AT THE BEGINNING OF THE SHIFT

Position	Task	Description
②	Verify the condition of the following elements: <ul style="list-style-type: none"> ▪ Tail lights. ▪ Proximity sensors. ACCESSORY ▪ Towing hitch (bolt pin and split pin). ▪ Registration plate. ▪ Registration plate light. ACCESSORY 	N/A
	Verify the condition and cleanliness of the radiator. Clean it if necessary.	See 'Basic Maintenance Every 50 Hours - At the end of the shift'.
	Check the condition of the rear-view mirror on the counterweight side. ACCESSORY	N/A
③	Check the closing condition of the maintenance cover.	N/A
	Check the condition of the electrical wiring, the battery, the fuses and their connections.	N/A
	Check the condition of the engine mounts.	N/A
	Check the engine oil level (1).	 <p>This should be between the minimum and maximum marks. If necessary, refill following the indications in 'Refilling Engine Oil'.</p> 
	Drain the fuel prefilter water.	See the procedure described in 'Fuel prefilter water drain'.

AT THE BEGINNING OF THE SHIFT

Position	Task	Description
③	Check windscreen wiper liquid level on the skip side. ACCESSORY	N/A
	Check the condition of the cab filters. ACCESSORY	See 'Inspecting or Changing Cab Filters'.
④	Refuel.	See 'Refueling' in Chapter 4. ▲ WARNING Risk of fire or explosion. <ul style="list-style-type: none"> ➤ Do not smoke while handling fuel. ➤ Always refuel with the engine stopped.
	Check the elements for damage, cracks, oil leaks or other defects.	<ul style="list-style-type: none"> ▪ Steering cylinder. ▪ Skip. ▪ Chassis central articulation. ▪ Hydraulic hoses and connections. ▪ Steps and handles to access the operator's position.
	Verify the condition of the skip safety prop, the articulation safety prop and of their anchor and support points.	N/A
⑤	Verify the condition of the following elements: <ul style="list-style-type: none"> ▪ Headlights. ▪ Skip side camera. ▪ Proximity sensors. ACCESSORY 	N/A
⑥	Check the hydraulic oil level (1) and, if necessary, refill the tank.	See 'Refilling Hydraulic Oil'. 

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BASIC MAINTENANCE EVERY 8 HOURS

AT THE BEGINNING OF THE SHIFT

Position	Task	Description
6	Check for damage, cracks or other defects in the Roll Over Protective Structure (ROPS).	Check that the bolt pins are properly inserted and fastened with the split pins. <i>See 'Roll Over Protective Structure (ROPS)' in Chapter 4.</i>
	Check the windscreen wiper liquid level on the counterweight side. ACCESSORY	N/A
	Check the cab structure and the state of the windows. ACCESSORY	<ul style="list-style-type: none"> Check there are no cracks or breaks. Clean the windows.
	Check the condition of the safety prop on the skip, its fastening elements and support points.	N/A
7	Check the opening and closing of the doors. ACCESSORY	N/A
	Check the hours of service counter to know whether it is necessary to perform advanced maintenance tasks.	The frequency for these types of tasks is as follows: <ul style="list-style-type: none"> 250 hours. 500 hours. 1,000 hours. 1,500 hours. 3,000 hours.
	Verify the correct operation of the lighting and signalling equipment. ACCESSORY	N/A
	Check that the work lights operate correctly. ACCESSORY	N/A
	Check the control panel.	Verify the correct operation of the following elements: <ul style="list-style-type: none"> Push buttons. Switches. Selectors. Indicators. Information: Check the 'Engine Malfunction' indicator.
	Check the heating and air-conditioning system. ACCESSORY	<ul style="list-style-type: none"> Check correct operation. Hot air. Cold air

AT THE BEGINNING OF THE SHIFT

Position	Task	Description
7	Check the windscreen wipers. ACCESSORY	<ul style="list-style-type: none"> ▪ Check correct operation. ▪ Speeds. ▪ Water outlet.
	Check the condition of the seat and its rails brackets. Lubricate it if necessary.	N/A
	Check the seatbelt.	<ul style="list-style-type: none"> ▪ Verify that the latch enters and exits the buckle easily. ▪ Check that, once engaged, the latch does not come out of the buckle without pressing the unlocking button. ▪ Verify that the anchor points of the different seatbelt elements are firmly attached. ▪ Check that the strap has no cuts or frayed parts. ▪ Verify the good condition of the seams. ▪ Check the correct operation of the sensor.
	Check the machine elements.	<ul style="list-style-type: none"> ▪ Turn the steering wheel until it stops in both directions, and check that it moves freely, with no stiff points. ▪ Check that the steering wheel does not have free play. ▪ Press the pedals several times to ensure that they move freely and that, when released, they return to their original position. ▪ Start the machine's engine, travel forward slowly and press the brake pedal to verify its correct operation. ▪ Move the skip with the joystick to verify that it works properly. ▪ Verify that the travel selector (FNR) operates correctly in its three positions: <ul style="list-style-type: none"> ▪ Forward. ▪ NEUTRAL. ▪ Reverse. ▪ Verify that all the gears shift correctly. POWERSHUTTLE TRANSMISSION
	Verify the operation of the acoustic reverse travel warning.	Check that the acoustic warning sounds normally when travelling in reverse.



BASIC MAINTENANCE EVERY 8 HOURS

AT THE BEGINNING OF THE SHIFT

Position	Task	Description
7	Check the correct operation of the horn.	N/A
	Verify that the rotating beacon works properly.	N/A
	Check the operation of the emergency push button.	With the engine on, press the emergency push button to check that it triggers a complete stop of the machine.
	Check the operation of the NEUTRAL position of the travel selector (FNR).	With the travel selector (FNR) in NEUTRAL and the engine running, verify that, the machine does not move forwards nor backwards when pressing the accelerator.
	Verify the operation of the gearbox NEUTRAL position and of the transmission disconnection push button. POWERSHUTTLE TRANSMISSION	Verify that the machine does not move forwards or backwards in any of the following situations: <ul style="list-style-type: none"> ▪ With the gear lever in NEUTRAL. ▪ When in gear and the push button at the lower part of the handle is pressed.
	Check the operation of the parking brake.	With the parking brake applied, the machine wheels must remain locked.
	Verify the operation of the skip side camera.	N/A
	Verify the operation of the counterweight side camera and the proximity sensors. ACCESSORY	N/A

AT THE END OF THE SHIFT

NOTICE If the machine is used in areas with salt water (beaches, etc.) or mud, rinse with clean water to protect it against corrosion, and keep the lights clean. Lubrication and protection of metallic parts are highly recommended.


At the end of the working day, clean the machine so that dirt does not cause premature wear of the components, or affect their correct operation.

NOTICE Damaged painted parts must be repainted to prevent corrosion.

▲ WARNING Risk of burns through contact with flammable substances.

If volatile and easily flammable aerosols or corrosion protection products are used, take the following recommendations into account:

- Try to ventilate the area sufficiently.
- Do not smoke or use fire or open flames.

 **Environment:** To prevent harm to the environment, the machine must only be cleaned at a wash station provided for such purpose, or in a washing bay.

NOTICE Clean with neutral soap.

Do not use flammable or abrasive cleaning products; using incorrect cleaning products or procedures damages the machine operating safety and endangers the health of the cleaning staff.

NOTICE Do not use degreasing agents, solvents, acetone, etc. to clean plastic parts.

NOTICE When washing, do not direct pressurized water spray towards the following components:

- Suction intake (air filter).
- Cab filters. **ACCESSORY**
- Battery.
- Alternator.
- Control panel.
- Other electrical equipment which might become damaged.



BASIC MAINTENANCE EVERY 8 HOURS

AT THE END OF THE SHIFT

Task	Description
Clean the signalling and lighting system. ACCESSORY	N/A
Clean the work lights. ACCESSORY	N/A
Clean the operator's position / cab.	<ul style="list-style-type: none"> ▪ Seat. Keep the seatbelt clean. Coarse dirt damages the operation of the lock and the roller. <p>NOTICE Risk of damage to the fabric caused by cleaning with chemical products.</p> <p>The seatbelt must only be cleaned when it is fastened, using a mild soap solution. Do not clean it with chemical products, as they might damage the fabric.</p> <ul style="list-style-type: none"> ▪ Operator's position/cab floor. ▪ Glasses. ACCESSORY ▪ Access steps. ▪ Handles.
Replacing or cleaning the air filter.	Check the condition of the air filter and, if necessary, clean it following the procedure described in ' <i>Replacing or Cleaning the Air Filter</i> '.
Check or change the cab air filters. ACCESSORY	Check the condition of the filters and, where necessary, change them following the procedure described in ' <i>Inspecting or Changing Cab filters</i> '.
Clean all identification plates and decals.	N/A
Clean the skip.	N/A
Check the saturation condition of the particulate filter (DPF). ENGINE WITH PARTICULATE FILTER (DPF)	If necessary, perform a manual regeneration. See ' <i>Particulate Filter (DPF) Regeneration</i> ' in Chapter 5.

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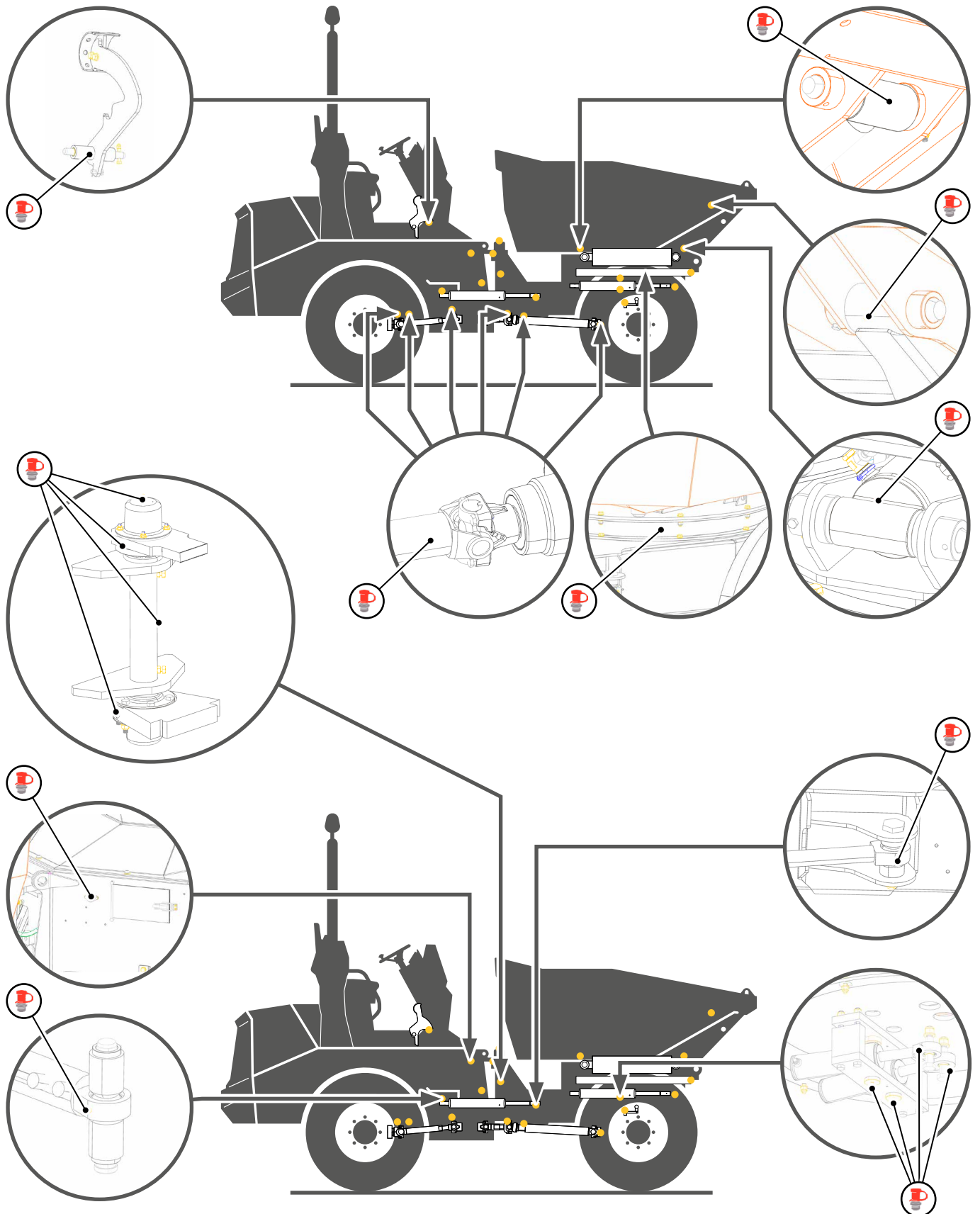
BASIC MAINTENANCE EVERY 50 HOURS

AT THE BEGINNING OF THE SHIFT

NOTICE If any anomaly is detected during this inspection, contact an authorized AUSA dealer.

Every 50 hours, and before using the machine, the following checks should be carried out, together with those relative to basic maintenance every 8 hours:

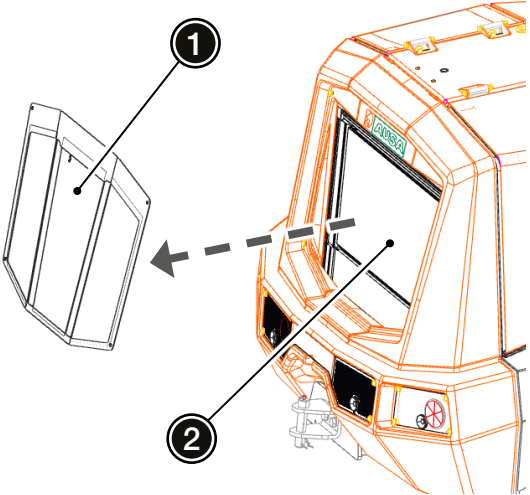
Task	Description
If the machine includes accessories, carry out their appropriate maintenance operations. ACCESSORY	Maintenance tasks for optional elements are described in <i>Chapter 9</i> .
Retighten the fastening nuts on the wheels.	Torque 330 ± 30 Nm .
Lubricate all grease points.	The following figure marks the grease points with the icon 



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BASIC MAINTENANCE EVERY 50 HOURS

AT THE END OF THE SHIFT

Task	Description
<p>Clean the radiator.</p>	<p>⚠ CAUTION Risk of burns through contact with hot radiator.</p> <ul style="list-style-type: none"> ➤ Allow the radiator to cool down before cleaning. <p>⚠ CAUTION Risk of skin irritation caused by contact with radiator residues.</p> <ul style="list-style-type: none"> ➤ Use gloves to remove external residues from the radiator. <p>NOTICE Do not use high-pressure water to clean the radiator fins, as they might get damaged.</p> <p>NOTICE Direct the water spray parallel to the radiator fins.</p> <p>Remove the external grille (1) and clean the radiator fins (2) with a low-pressure water hose. Take into account the following recommendations.</p>  <p>Information: To remove the radiator grille, remove the four screws with a 4 mm hex key.</p>
<p>Check or change the cab air filters. ACCESSORY</p>	<p>Check the condition of the filters and, where necessary, change them following the procedure described in 'Inspecting or Changing cab filters'.</p>

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FIRST 50 HOURS ADVANCED MAINTENANCE

INITIAL INSPECTION

Once the 50 hours or 30 days (whichever occurs first) break-in period is over, it will be necessary to carry out a main components inspection.

To perform this initial inspection, it is necessary to carry out the following checks together with those related to the basic maintenance every 50 hours:

Task	Description
Change the hydrostatic oil cartridge. HYDROSTATIC TRANSMISSION	See <i>HDR.R.02</i> in the <i>Advanced Maintenance Manual</i> .
Check alternator belt tension.	See <i>MTR.R.02</i> in the <i>Advanced Maintenance Manual</i> .
Clean the air-conditioning belt tension. ACCESSORY	See <i>MTR.R.03</i> in the <i>Advanced Maintenance Manual</i> .
Change the fuel prefilter.	See <i>SAC.R.02</i> in the <i>Advanced Maintenance Manual</i> .
Change the axles differential and wheel reduction oil.	See <i>TRN.R.01</i> in the <i>Advanced Maintenance Manual</i> .
Change the transfer box oil.	See <i>TRN.R.02</i> in the <i>Advanced Maintenance Manual</i> .
Change the transmission oil cartridge. ⁽¹⁾ POWERSHUTTLE TRANSMISSION	See <i>TRN.R.04</i> in the <i>Advanced Maintenance Manual</i> .
Clean the air-conditioning evaporator. ACCESSORY	Clean with air. Maximum pressure: 3 bar.

⁽¹⁾ Although AUSA recommends to perform the filter change during the first 50 hours maintenance check, the Powershuttle transmission manufacturer allows the oil change up to 250 hours.

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ADVANCED MAINTENANCE EVERY 250 HOURS

Every 250 hours, perform the following checks together with those related to:

- basic maintenance every 8 hours.
- basic maintenance every 50 hours.

Task	Description
If the machine includes accessories, carry out their appropriate maintenance operations. ACCESSORY	Maintenance tasks for optional elements are described in 'Chapter 9'.
Check all mechanic anchor points.	<p>Check that there are no abnormal noises or vibrations in the following items:</p> <ul style="list-style-type: none"> ▪ Engine. ▪ Transmission. ▪ Exhaust system. ▪ Hydraulic system. ▪ Counterweight. ▪ Mobile parts. ▪ Chassis.
Check the air-conditioning belt tension. ACCESSORY	See <i>MTR.R.03</i> in the <i>Advanced Maintenance Manual</i> .
Clean the air-conditioning evaporator. ACCESSORY	Clean with air. Maximum pressure: 3 bar.
Check the battery connections.	<ul style="list-style-type: none"> ▪ Inspect the battery to confirm that there is no external damage. ▪ Verify that there has been no electrolyte loss. ▪ If there is rust on the posts, clean them and apply dielectric grease or Vaseline.
Change the fuel prefilter.	See <i>SAC.R.02</i> in the <i>Advanced Maintenance Manual</i> .
Check the radiator hoses and fixing flange brackets.	N/A

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ADVANCED MAINTENANCE EVERY 500 HOURS

Every 500 hours, perform the following checks together with those related to:

- basic maintenance every 8 hours.
- basic maintenance every 50 hours.
- advanced maintenance every 250 hours.

Task	Description
Change the engine oil and filter.	See <i>MTR.R.01 in the Advanced Maintenance Manual.</i>
Change the air filter. ⁽²⁾	See ' <i>Replacing or Cleaning the Air Filter</i> '.
Change the cab air filters. ⁽²⁾ ACCESSORY	See ' <i>Inspecting or Changing Cab Filters</i> '.
Change the fuel prefilter. ⁽²⁾	See <i>SAC.R.02 in the Advanced Maintenance Manual.</i>
Check alternator belt tension.	See <i>MTR.R.02 in the Advanced Maintenance Manual.</i>
Check the coolant (additive concentration).	See <i>REF.R.01 in the Advanced Maintenance Manual.</i>
Change the axles differential and wheel reduction oil.	See <i>TRN.R.01 in the Advanced Maintenance Manual.</i>
Retighten drive shafts fastening bolts.	N/A
Check the counterweight fastening bolts.	N/A
Ensure the cab is secure. ACCESSORY	N/A

⁽²⁾ Or every year, whichever occurs first.

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ADVANCED MAINTENANCE EVERY 1,000 HOURS

Every 1,000 hours, perform the following checks together with those related to:

- basic maintenance every 8 hours.
- basic maintenance every 50 hours.
- advanced maintenance every 250 hours.
- advanced maintenance every 500 hours.

Task	Description
Change the alternator belt. ⁽³⁾	See <i>MTR.R.02 in the Advanced Maintenance Manual.</i>
Change the air-conditioning belt. ⁽³⁾ ACCESSORY	See <i>MTR.R.03 in the Advanced Maintenance Manual.</i>
Check charge of the R134a refrigerant for cooling systems. ⁽²⁾ ACCESSORY	See ' <i>Fluids and Lubricants</i> '.
Change the fuel filter. ⁽²⁾	See <i>SAC.R.01 in the Advanced Maintenance Manual.</i>
Change the hydrostatic oil cartridge. HYDROSTATIC TRANSMISSION	See <i>HDR.R.02 in the Advanced Maintenance Manual.</i>
Change the hydraulic oil and clean the tank inner filter.	See <i>HDR.R.01 in the Advanced Maintenance Manual.</i>
Change the transmission oil cartridge. POWERSHUTTLE TRANSMISSION	See <i>TRN.R.04 in the Advanced Maintenance Manual.</i>
Change the transmission oil and clean the tank inner filter. POWERSHUTTLE TRANSMISSION	See <i>TRN.R.05 in the Advanced Maintenance Manual.</i>
Check the exhaust manifold. ⁽³⁾	Cracks, gas leaks, anchors or damage.
Check the tightening of the central articulation nut.	N/A

⁽²⁾ Or every year, whichever occurs first.

⁽³⁾ Or every two years, whichever occurs first.

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ADVANCED MAINTENANCE EVERY 1,500 HOURS

Every 1,500 hours, perform the following checks together with those related to:

- basic maintenance every 8 hours.
- basic maintenance every 50 hours.
- advanced maintenance every 250 hours.
- advanced maintenance every 500 hours.

Task	Description
Change coolant.	See <i>REF.R.01</i> in the <i>Advanced Maintenance Manual</i> .
Change air filter intake hose. ⁽³⁾	N/A
Change radiator hoses and fixing flange brackets. ⁽³⁾	N/A
Change fuel hoses and fixing flange brackets. ⁽³⁾	N/A
Change the brake fluid. ⁽³⁾	N/A
Change the battery.	N/A
Check the air-conditioning pressure switch. ⁽³⁾ ACCESSORY	N/A
Check the thermostat of the R134a refrigerant for cooling systems. ⁽³⁾ ACCESSORY	N/A

⁽³⁾ Or every two years, whichever occurs first.

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ADVANCED MAINTENANCE EVERY 3,000 HOURS

Every 3,000 hours, perform the following checks together with those related to:

- basic maintenance every 8 hours.
- basic maintenance every 50 hours.
- advanced maintenance every 250 hours.
- advanced maintenance every 500 hours.
- advanced maintenance every 1,000 hours.
- advanced maintenance every 1,500 hours.

Task	Description
Change hydraulic hoses and fittings. ⁽⁴⁾	N/A

⁽⁴⁾ Or every six years, whichever occurs first.

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ACCESSORIES

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LIST OF MACHINE ACCESSORIES 9-3
SMART-STOP **ACCESSORY** 9-4





LIST OF MACHINE ACCESSORIES

The machine may include the following accessories.

Information: For additional information, consult an authorized AUSA dealer.

Driving position
Closed ROPS/FOPS cab with heating.
Closed ROPS/FOPS cab with heating and air conditioning.
Safety
LED rotating beacon.
LED green rotating beacon.
Full visibility camera on the counterweight side and proximity sensors (International metric system).
Protective grille on the skip. D 1001
Reflective decals on rear body.
Lighting and driving
Road lights.
Second rear-view mirror.
Third rear-view mirror (Mandatory with closed cab).
Germany circulation regulation (Approved lighting system, decal plate 20 km/h and reflective decals on rear body).
Advanced equipment
Smart Stop system (LED rotating beacon).
Accessories
Protector:
▪ Front mudguards. D 601
Alarm acoustic:
▪ Reverse gear acoustic warning disable switch (Mandatory with road lights).
Multimedia:
▪ Car radio (Mandatory with closed cab).
Documents:
▪ Waterproof document holder.
Towing:
▪ Rockinger hitch with power socket.
▪ Ball and towing hitch. D 601
▪ Power socket for the trailer.
Paint:
▪ Custom paint (orange parts only).

Transport
Cab transport stillage.
Cab disassembled for transport. A crane is needed at destination.
Decals language and manuals
English.
French.
Destination country finishes
Germany finishes.
French finishes.
UK finishes (Right rear-view mirror).
Polish finishes.
Parts
Spare wheel:
▪ Standard (1ut.).
▪ Turf 400/70-20" TL - 14PR (Complete wheels 1ut.). D 601
▪ Pack of 4 turf tires (Additional) 400/70-20" TL - 14PR. D 601
Kit:
▪ 1,000 h maintenance kit.

SMART-STOP ACCESSORY

The Smart-Stop system allows the machine engine to be stopped and started intelligently, as long as a series of conditions are met:

- Engine ON.
- Smart-Stop function ON. See *'Controls' in Chapter 3*.
- Travel selector (FNR) in NEUTRAL.
- Coolant temperature > 70 °C.
- Engine torque < 25%.
- Lighting equipment OFF.
- Speed = 0.
- Accelerator pedal not pressed.
- Time since last stop ≥ 5 minutes.

The operation of this system is explained in the following flow chart:

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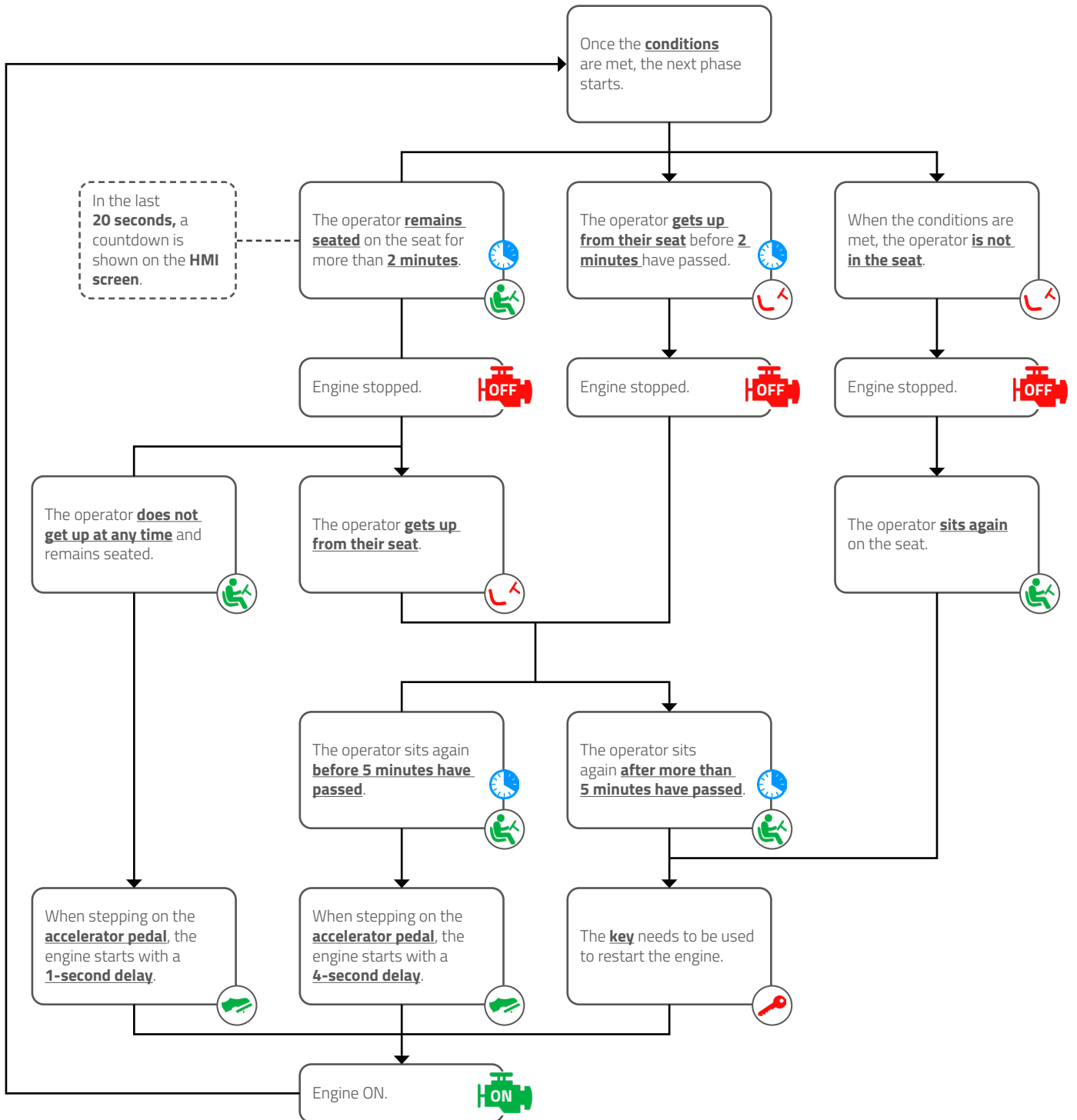
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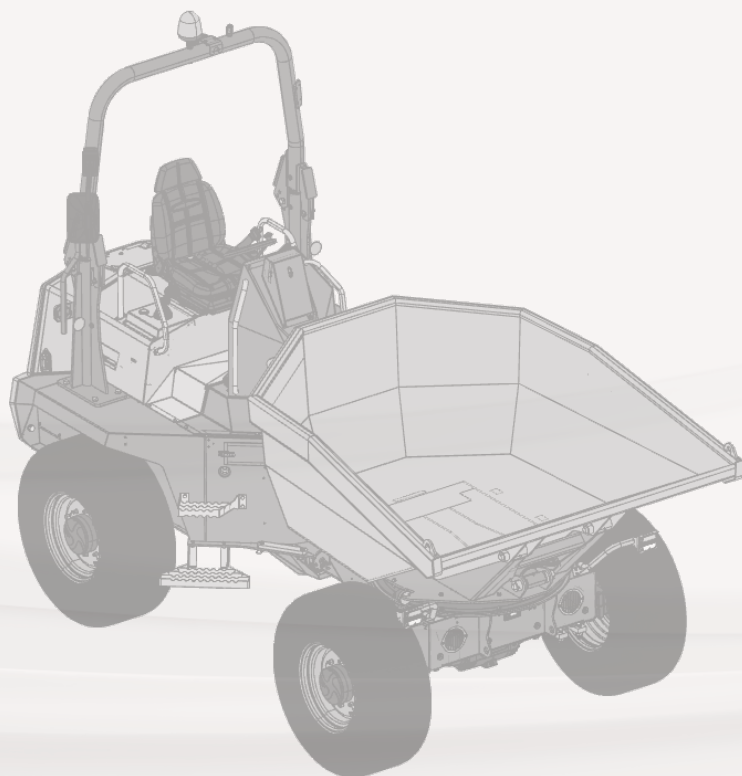


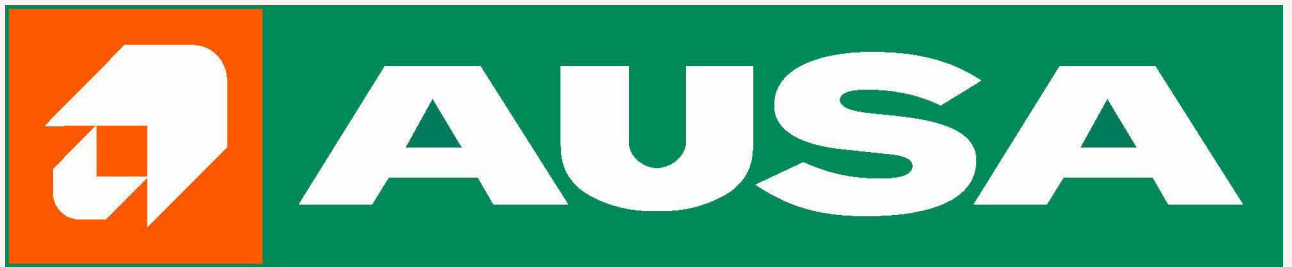
SMART-STOP **ACCESSORY**



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AUSA Center

C/ Castelladral 1
08243 Manresa - BARCELONA
+34 93 874 73 11
ausa@ausa.com

AUSA Spain

Camino de las Rejas 1, Pta. 1
28821 Coslada - MADRID
+34 91 669 00 06
ausa.madrid@ausa.com

AUSA Central Europe

+49 (0) 2384 988 99 05
kontakt@ausa.com

AUSA U.K.

+44 (0) 7703 60 90 09
ausa.uk@ausa.com

AUSA France

11 Rue Gustave Eiffel
66350 TOULOUGES
+33 (0) 468 54 38 97
ausa.france@ausa.com

AUSA U.S.

9481 Industrial Center Dr.
Unit 3, 29456 Ladson, SC
+1 (843) 202 03 87
ausa.us@ausa.com

AUSA China

Room 403, Moma Building, N.199
Chaoyang bei road, Chaoyang District
100026 BEIJING
+86 10 8598 73 86
ausa.china@ausa.com



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