MANUALE D'USO E MANUTENZIONE
INSTRUCTION BOOK
MANUEL D'UTILISATION
MANUAL DE USO Y MANTENIMIENTO
BEDIENUNGS- UND WARTUNGSHANDBUCH

706 SMARTSAFE

- Motocoltivatore
- Two-wheel tractor
- Motoculteur
- Motocultor
- Einachser

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1. Introduction

1.1 Foreword

This manual provides the Operator with technical information regarding the 706 SmartSafe motor cultivator (hereinafter referred to as the ‘machine’), manufactured by BCS S.p.A. (hereinafter referred to as the 'manufacturer').

In this manual, the Operator will find instructions for:

- Getting familiar with the safety procedures and basic accident prevention standards to be adopted, to prevent hazards and damage to people, machine and the environment.
- A technical and functional description of the units that constitute the machine and the accessories.
- Correct assembly.
- Checks, preliminary maintenance and transport methods.
- Routine scheduled maintenance as well as checks and any extraordinary maintenance operation.

This manual is an integral part of the machine and must follow it in any changes of ownership, until its final decommissioning.

The manual and all publications attached to it must be stored with care, in an easily accessible location known to the Operator, for maintenance purposes.

The operator must read the description carefully before starting work or carrying out the required adjustments or maintenance.

If the manual is lost, damaged or becomes illegible, request a copy to BCS S.p.A., indicating the model, the serial number and the year of construction.

If the machine is transferred, the transferor is obliged to deliver the manual to the new owner.

The machine and the accessories are subject to updates aimed at improving the final product; this manual summarises the information regarding the current state of technology at the time of delivery.

BCS S.p.A. reserves the right to update the production and manuals, without the obligation to update the manuals of previous editions, except in exceptional cases of fundamental integrations concerning safe operation.

It is prohibited to reproduce or translate any part of this manual without BCS S.p.A.'s written authorization.

CAUTION

- **Improper use or maintenance can cause serious damage to people and shorten the "useful life" of the machine.**
- **The Operator must be familiar with all the rules given in this manual, before using the machine or carrying out maintenance operations on it.**
- **The procedures contained in this manual apply to the machine only if used for permitted uses and with all safety devices mounted and functioning; if the machine is used for other purposes or in different safety conditions, the Customer becomes directly responsible for the lack of safety of any person possibly involved in accidents or injuries and for abnormal wear and tear of the machine.**

1.2 Supplied documentation

The documentation supplied with the machine includes:

- Use and Maintenance Manual.

1.3 Customer service

Requests to support must be addressed directly to the BCS S.p.A. dealer.

In order to facilitate quick and effective responses, it is essential to always indicate the "Model" and the "Serial Number" shown on the identification plate (see “1.11 Identification data”).

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1.4 Spare parts

Only original BCS S.P.A. spare parts that guarantee, in addition to perfect interchangeability, the functionality and durability, must be used.

Any derogation from this requirement must be authorised by the Customer Service Office, with written notice specifying any alternatives studied and therefore admitted.

Contact an authorised BCS SpA dealer, always indicating the "Machine Model" and the "Serial Number" shown on the identification plate (see “1.11 Identification data”).

1.5 Declaration of conformity

The manufacturer:

BCS S.p.A. - V.le Mazzini, 161 - 20081 Abbiategrasso (MI) - Italy

Declares that the machine: **706**

Comply with the requirements of the following EC/EU Directives:

- Machine Directive 2006/42/EC
- Electromagnetic Compatibility Directive 2014/30/EU

and with the requirements of the following UK regulations:

- The Supply of Machinery (Safety) - Regulations 2008
- Electromagnetic Compatibility - Regulations 2016

1.6 Unauthorized changes

No changes can be made to the machine or its components without BCP S.p.A.'s written authorization.

Unauthorized changes may vary the design parameters regarding the original performance of the machine, voiding any form of warranty and any civil and/or criminal liability regarding accidents or injuries.

1.7 Allowed uses

The machine is permitted for non-professional use by hobbyists or owners of small plots of land.

The machine is designed and built to prepare the soil for vegetable gardens or orchards (tilling). The machine can be connected to the following equipment:

- tillers (to prepare soil for sowing)
- cutter bars (to cut grass)
- lawnmower (to cut and collect grass)
- snowploughs (to clear snow)

The machine is compliant with Directive 2006/42/EC, and with current regulations in the Country of use.

Any use other than that expressly indicated, is to be considered improper use and therefore not allowed.

1.8 Improper uses

Any use other than that expressly indicated, is to be considered improper use and therefore not allowed.

1.9 Residual risks

For people who stand near the machine during work, the following applies:

- Risks arising from impacts, entanglement or shearing as a result of accidental contact with equipment connected to the machine.
- Risk of ejection of debris (stones, blunt objects, etc.).

1.10 Specific terminology

To improve understanding of this manual, the following terms are used:

- Hazardous area: area inside of or near the machine where the presence of an exposed person constitutes a risk to the safety and health of that person.
- Exposed person: any person located fully or partially in a dangerous area.

Note

Hazardous area means any area where a person is exposed to a risk to safety and health, even only occasionally and for short periods of time (for instance, when the machine is subjected to maintenance for the

replacement of fluids, when performing an electrical intervention).

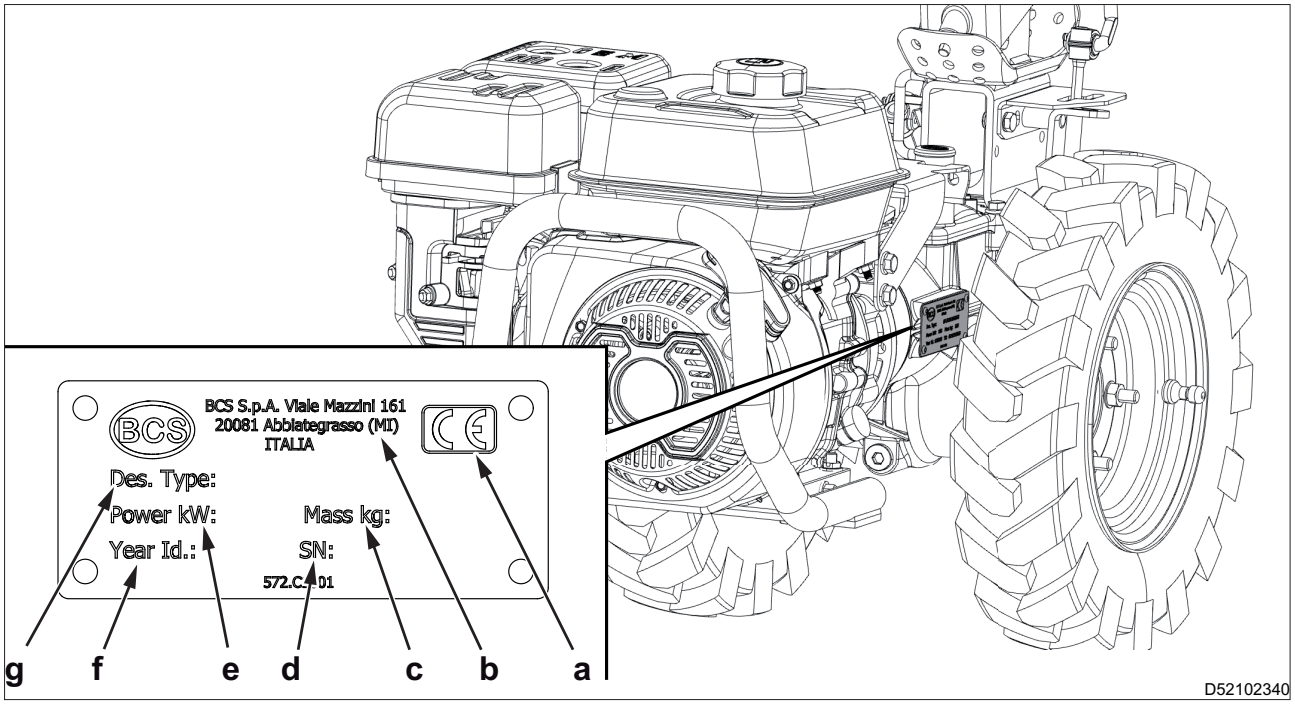
- Operator-conductor: person in charge of operating, performing ordinary maintenance and cleaning the machine.
- Qualified technician: a specialist authorised to carry out extraordinary maintenance or repairs that require particular knowledge of the machine and its operation.

CAUTION

- **The machine has the option of reversing its working position by rotating the handlebars 180 degrees.**
  The terms 'right', 'left', 'front' and 'rear' refer to the operator's view when operating the machine when it is in motor cultivator configuration (engine facing the 'forward' direction of travel and equipment facing the operator).

1.11 Identification data

The machine identification data (necessary for spare parts requests and communications with the service department) are specified on the product identification plate applied in a protected position shown in the figure.



a. CE marking
b. Manufacturer
c. Weight
d. Serial number
e. Engine power
f. Year of manufacture
g. Machine and engine model

2. Safety

2.1 Safety information

Always observe the warnings contained in this manual and present on the decal applied to the machine.
This allows the machine to be used safely, avoiding damage to property and injury or death to people.
The following words and symbols were used to identify important safety messages.

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Symbol ⚠ identifies important safety messages on the machine, in the manual and elsewhere. When you see this symbol, follow the instructions in the safety messages.

⚠ DANGER

- **This word indicates a situation of imminent risk that, if not avoided, could cause serious injury or even death to people and serious damage to property.**

⚠ WARNING

- **This word indicates a potential risk situation which, if not avoided, could result in serious injury or even death to people and serious damage to property.**

⚠ CAUTION

- **This word indicates a potential risk situation that, if not avoided, could cause minor or moderate injuries.**
  It can also be used to prevent dangerous operations that can cause damage to the machine.

The following terms are used to transmit information to be followed to avoid machine damage to the user.

☞ Important

- If the precautions described are not observed, the machine could be damaged and its useful life reduced.

Note

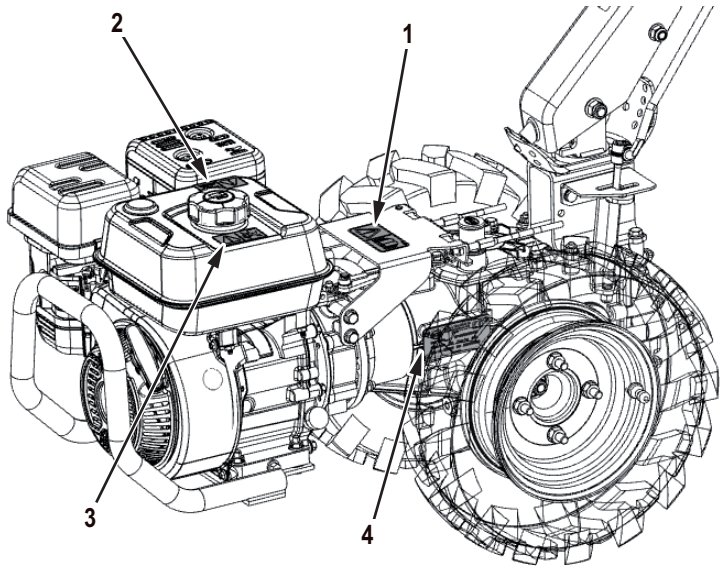
- This word is used to indicate further useful information.

2.2 Positioning of safety and information decal

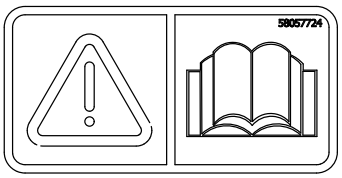
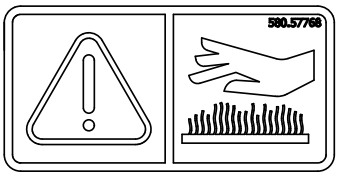
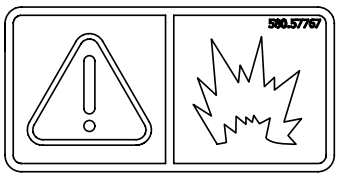
2.2.1 Safety decal explanation

Observe the warnings shown on the decal to avoid death or injury to people and damage to the machine. Make sure that the decals are present and legible. If necessary, apply or replace them, requesting them from the manufacturer.

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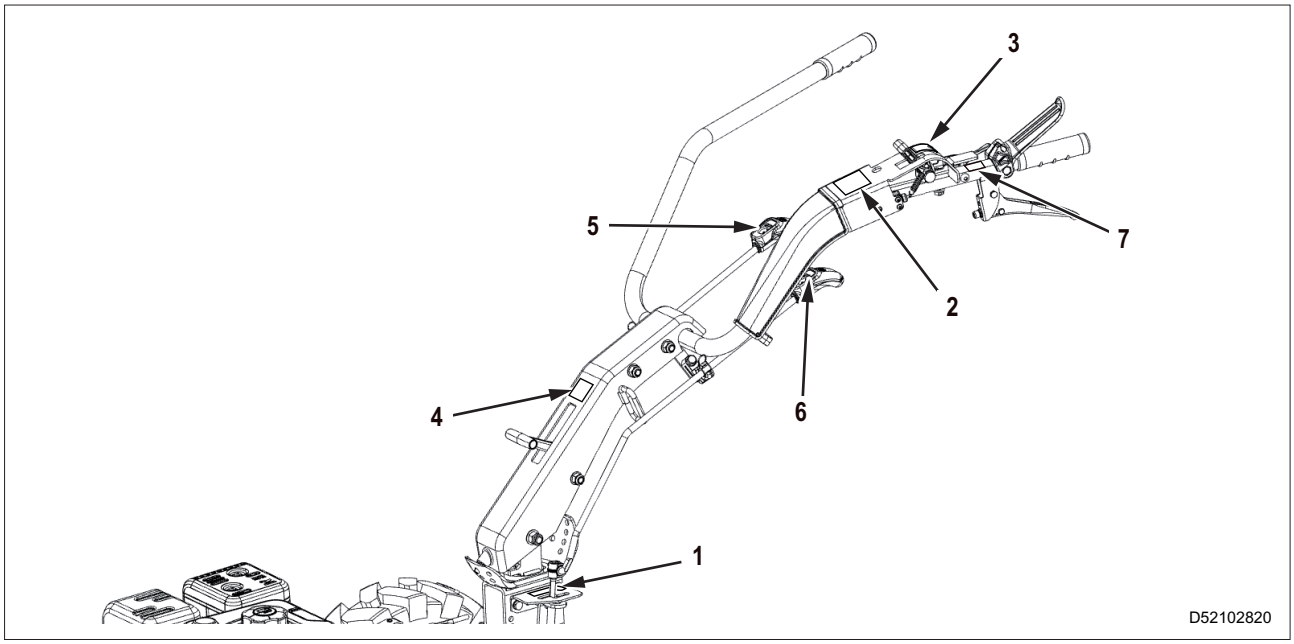


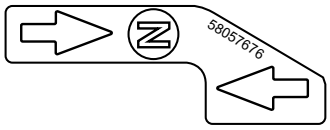
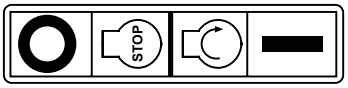
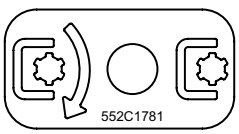
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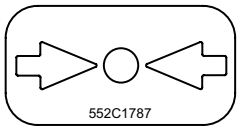
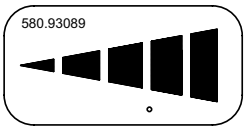
Pos.	Description		Code
1		**Warning** Read the manual carefully before using the machine. Q.ty: 1	580.57724
2		**Warning** Allow the engine to cool before performing any operation Q.ty: 1	580.57768
3		**Warning** Danger of explosion (only with petrol engines) Q.ty: 1	580.57767
4		Product identification plate Q.ty: 1	572.C1801

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2.2.2 Information decal explanation

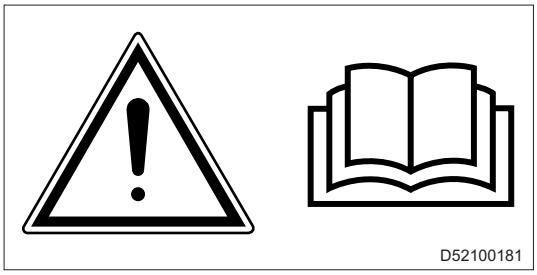


Pos.	Description		Code
1		Gear selector instructions Q.ty: 1	580.57676
2		SmartSafe control instructions Q.ty: 1	580.56866
3		Starting and stopping the engine Q.ty: 1	580.56869
4		Handlebar adjustment instructions Q.ty: 1	580.56864
5		Power take-off command instructions Q.ty: 1	552.C1781

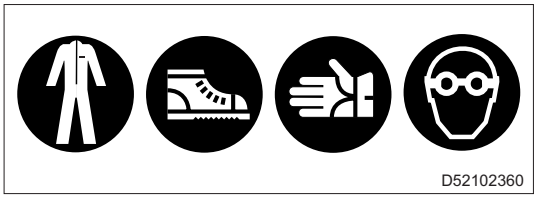
Pos.	Description		Code
6		Direction of travel engagement command instructions Q.ty: 1	552.C1787
7		Engine speed adjustment instructions Q.ty: 1	580.93089

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2.3 General precautions for use



- Before use and maintenance, read, understand and follow all the precautions and warnings contained in this manual and the warning signs shown on the decals applied to the machine.
- If you don't understand the instructions in the manual, ask for clarification before starting to work.
- Do not use the machine for purposes other than those for which it was built.
- The safe operation of the machine is entrusted to the operator.
- Do not use the machine if you are in poor physical condition, if you have taken medications that advise against driving, if you have taken alcohol or drugs.



- Wear resistant clothing, safety footwear, sturdy gloves and protective eyewear or face shield to protect against ejection of debris (stones, blunt objects, etc.) and impacts caused by accidental contact with the machine.
- Do not wear clothing that may get caught in moving parts such as unsuitable clothing, scarves, gowns etc.
- Do not wear rings, bracelets, necklaces, watches, scarves. Keep long hair tied.
- Make sure that there are no persons near the machine.
- Before starting to work, check that all the safety devices are in good condition and correctly installed. If there are issues, repair them.

2.4 Fire prevention

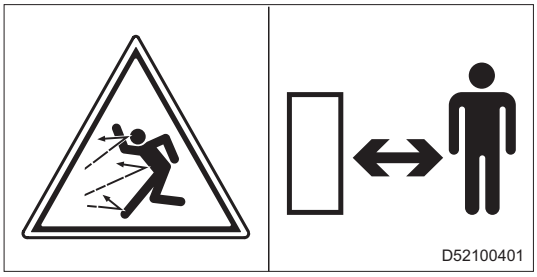


- Avoid approaching any flame to flammable substances such as fuel and oil.
- Do not smoke or use open flames near flammable substances.
- Stop the machine before refuelling.
- Make sure not to spill flammable substances on overheated surfaces.
- After refuelling, remove any spills and tighten all filling caps tightly.
- For safety in the workplace, store the cloths soaked in flammable materials in a container.
- Store oil and fuel in pre-established and well-ventilated locations and prohibit the entry of unauthorised personnel.

- When cleaning the machine, do not use flammable substances such as diesel or gasoline.
- Remove dry leaves, chips, pieces of paper, carbon dust, or other flammable materials accumulated from the machine.
- Periodically check that there are no loose or damaged parts.
- Repair or replace any damaged cables.

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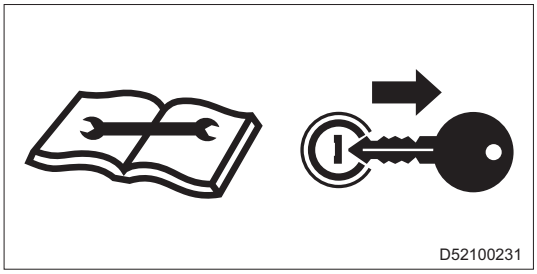
2.5 Precautions during operation

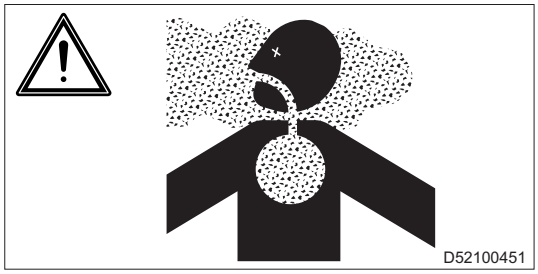




- Make sure that there are no persons in the environment. There is a danger of material ejection and objects that could cause serious injuries or death.
- Unauthorized persons must keep a safe distance (at least 5 m). If any person or animal enters the working area while the equipment is running, stop operations immediately.
- When reversing, be careful that there are no obstacles, people or animals in the back of the machine.
- Do not work on slopes with an inclination greater than 25°. Do not steer on a slope and do not cross it, but proceed from upstream to downstream. Move and steer the machine slowly avoiding dry grass, branches, stones or objects that may compromise the stability of the machine. There is a danger of tipping that could cause serious injuries or death.
- At the end of work, clean the machine. Use a low-pressure water jet to remove any mud and grass residue. Be careful not to let water into the engine.
- Take care to avoid injury from cutting/shearing.
  Do not stand near the machine guards or remove them before all moving parts have stopped.

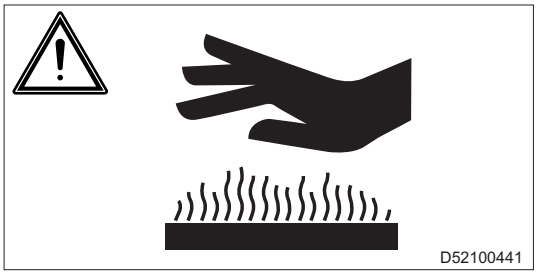
2.6 Machine maintenance precautions





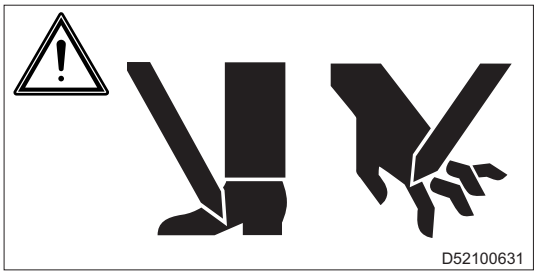
- Repairs may only be performed by qualified personnel.
- Use the products indicated by the manufacturer (lubricants, filters, etc.) and original spare parts.
- Before performing any maintenance, read the manual and stop the machine.
- Engine exhaust gases contain carbon monoxide which can cause serious damage to health or cause death. If the engine needs to be started during maintenance in an enclosed area, make sure the area is well ventilated or the gases can be discharged to the outside and suck in enough clean air.

- Do not touch the engine, exhaust pipes during operation or immediately after shut-off. Allow the engine to cool before performing any operation.
- When discharging the engine oil, the engine must be hot. Engine oil may come into contact with the skin and cause burns.
- Do not remove the guards and safety devices. If it is necessary to remove them, after completing the maintenance, install the removed guards and restore the safety devices.



- Use work tools in good condition and suitable for the work to be performed. If you use a damaged or deformed tool or if you use a tool for a purpose other than its intended purpose, there is a danger of causing serious personal injury or death.
- To avoid injury, do not perform maintenance with the engine running.
  - Rotating parts are dangerous and can get entangled on body parts or a worn object. When performing maintenance, be careful when approaching rotating parts or removing the spark plug.
  - Make sure not to drop or insert tools or other objects in the rotating parts. They can touch the rotating parts and be projected.
- When performing maintenance on blades, wear cut-resistant protective gloves.





2.7 Precautions during transport on public roads

- Load the machine onto a trailer or other suitable means of transport.

2.8 Precautions when parking the machine

- Place the machine on firm, level ground and shift into a gear to prevent it from moving.

2.9 Precautions during fuel and engine oil filling

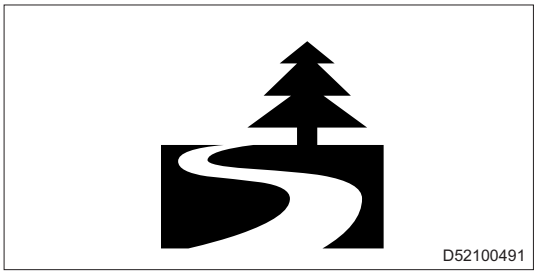
- Fuel and engine oil are flammable. Refill with the engine off.
- Refuel only outdoors or in well-ventilated environments.
- Do not smoke or use naked flames during refuelling.
- Do not fuel with the engine running or hot.
- Clean and dry any leaks of engine oil and fuel before restarting the machine.
- After refuelling, fully tighten the tank caps.



- Do not fill the fuel tank completely to allow expansion of the fuel inside it.
- Do not exceed the MAX level line of the engine oil level dipstick.

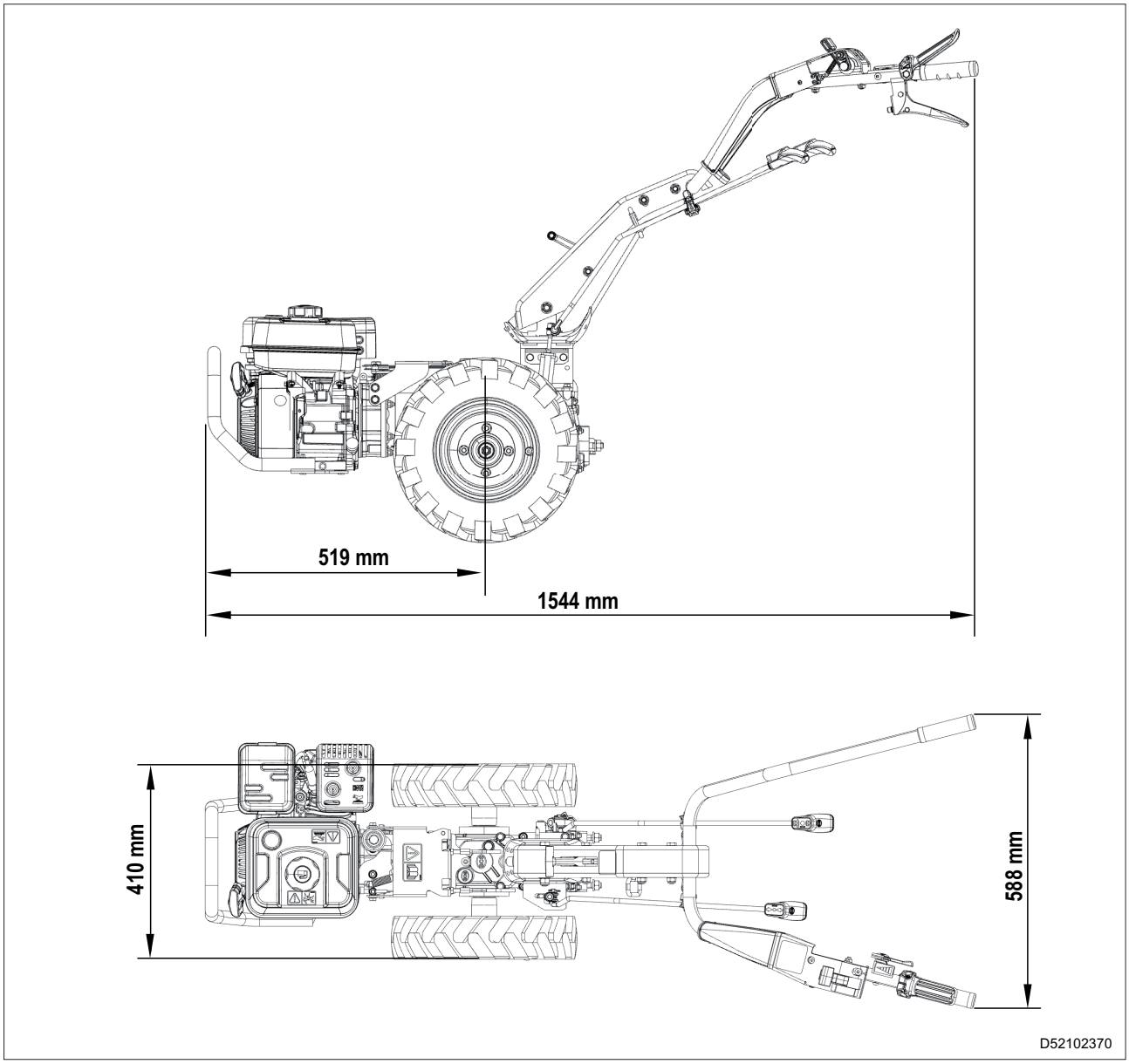
2.10 Scrap disposal precautions

- Be sure to store the waste liquid in containers or tanks.
- Do not discharge the oil directly into the soil or sewage system, rivers, seas or lakes.
- When disposing of harmful waste such as oil, fuel, coolant, solvents, filters and batteries, follow current laws and regulations.
- Entrust the authorized companies with the disposal of rubber material, plastic and components that contain them (hoses, cables, wiring, etc.) in accordance with the applicable laws and regulations.
- For further information, visit https://bcsgroup.it/it-it/sostenibilita/#etichettatura-ambientale or scan the QR code.



3. Technical data

3.1 Overall dimensions



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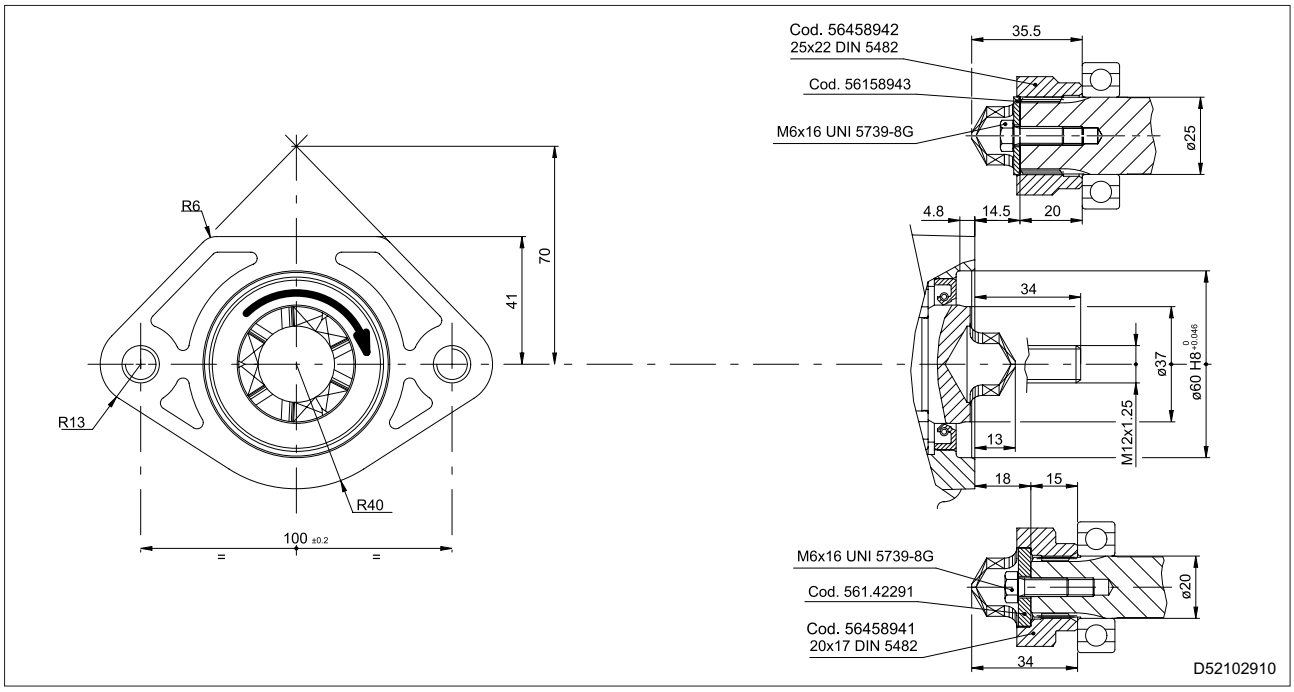
3.2 Technical data and performance

Technical features		Mod. 706
Engine type		Single-cylinder 4-stroke petrol engine
Power		4.5 kW (6 HP)
Fuel tank capacity		3.6 litres
Oil sump capacity		0.55 litres
Clutch type		SmartSafe
Gearbox		Oil-bath gears 1 Forward - 1 Reverse
Tyres		3.50-8”
Tyre pressure		0.12 Mpa (1.2 bar)
Travelling speed	Forward gear ([1])	0.97 km/h
	Reverse gear	2.48 km/h
Dry weight (excluding equipment)		64 kg

([1]) Forward gear is the direction in which the motor cultivator travels when working with the tiller.

3.3 PTO technical data

Technical features	Mod. 706
Power take-off speed	990 rpm
Direction of rotation	Clockwise
Ø20 equipment shank code	56458941
Ø25 equipment shank code	56458942

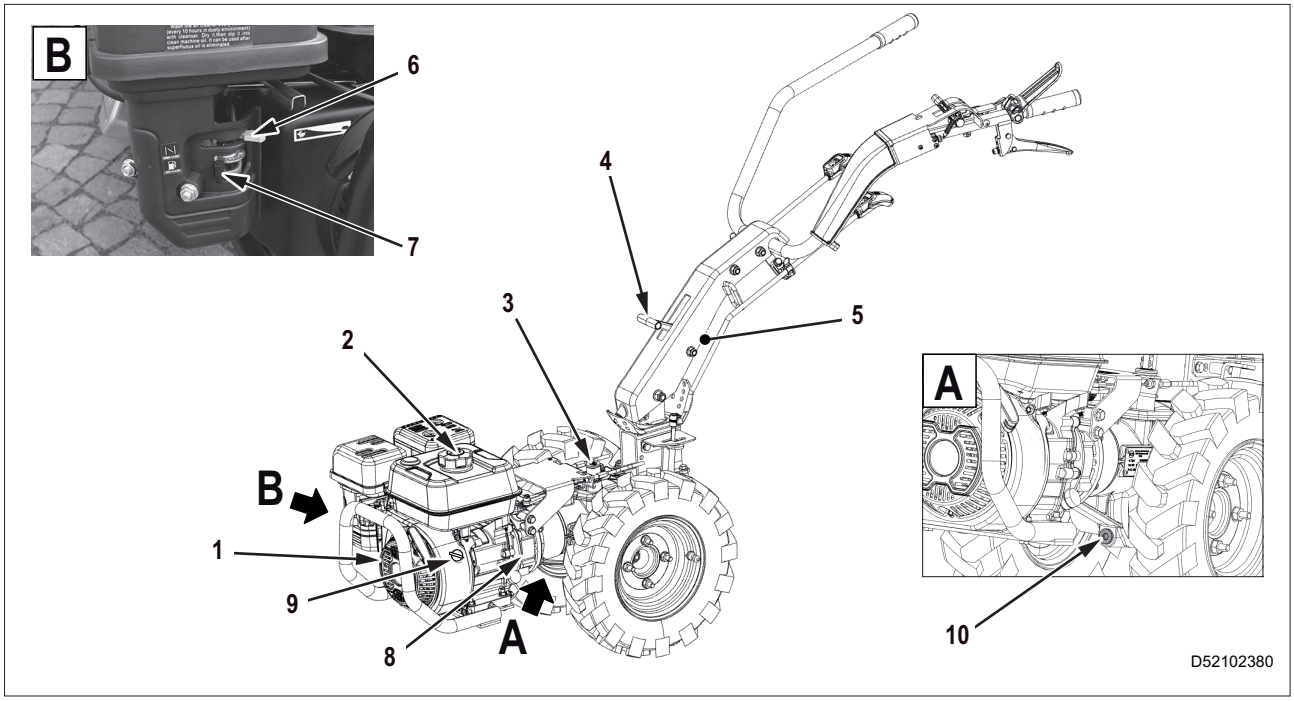


4. Description

4.1 Machine description

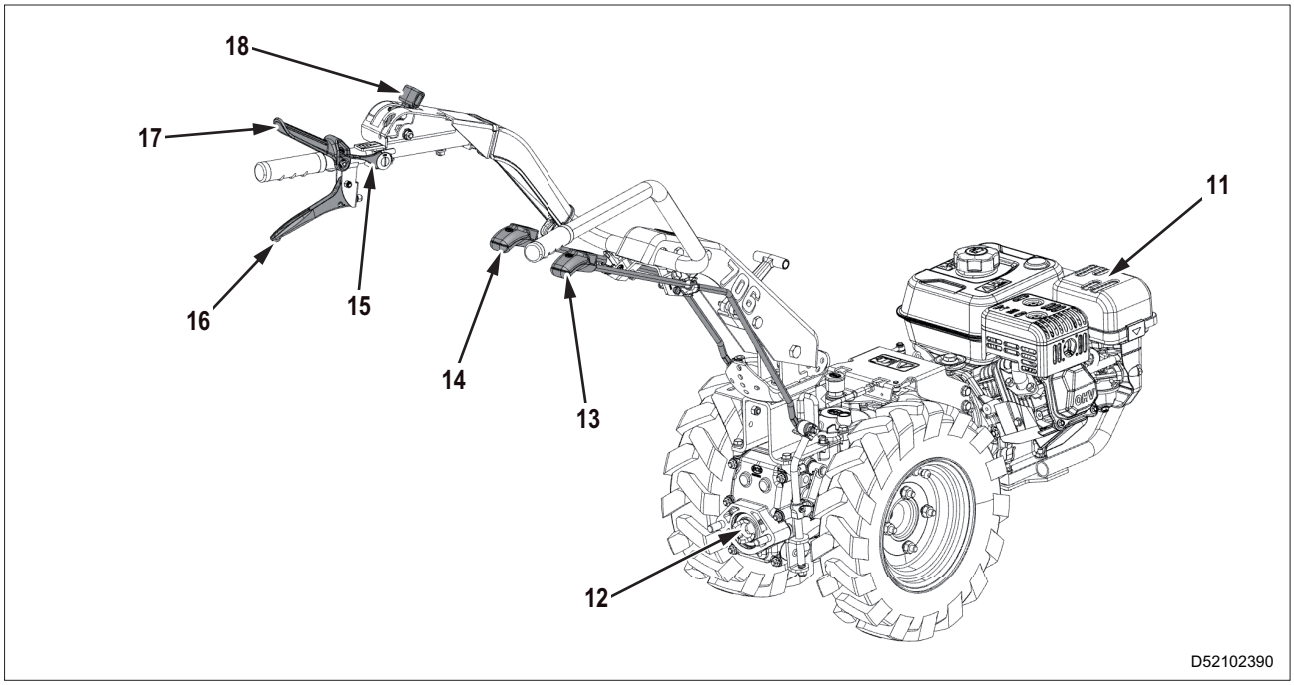
- The machine is a motor cultivator designed and built to prepare the soil for vegetable gardens or orchards (tilling).
- By turning the handlebars 180°, the equipment below can be connected to the PTO, which instead of being towed, can be pushed.
  - Cutter bars (to cut grass)
  - Lawnmower (to cut and collect grass)
  - Snowploughs (to clear snow)
- The engine in combination with the SmartSafe clutch provides the drive for the PTO, to which the equipment is connected, and travel.
- When the operator activates the SmartSafe clutch by lowering the red lever (which can only be lowered after the clutch lever has been raised), motion is transferred from the engine to the clutch plate, which governs the motion of the mechanical gearbox and the PTO.
- When the clutch lever is released, the machine begins to travel and the power take-off is engaged.
- When the operator releases the red (safety) lever of the SmartSafe clutch, travel and PTO motion stop immediately without stopping the engine.
- Selection of the travel direction (forwards or backwards) is carried out via the gear selection lever on the left side of the handlebar mount.
- Activation of the PTO is carried out via the selection lever on the right side of the handlebar mount.

4.2 Main parts



(1) Engine
(2) Fuel tank
(3) Gearbox oil topping up plug
(4) Handlebar adjustment lever
(5) Handlebar mount
(6) Petrol tap
(7) Starter lever (choke)
(8) SmartSafe device
(9) Engine ignition switch
(10) Gearbox oil drain plug

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(11) Air filter
(12) PTO
(13) Power take-off command lever
(14) Gearbox control lever
(15) Accelerator control lever
(16) Clutch control lever
(17) SmartSafe lever (red lever)
(18) Engine stop lever

5. Use of the machine

⚠ CAUTION

- **Before starting the machine, carefully read chapter "2. Safety".**

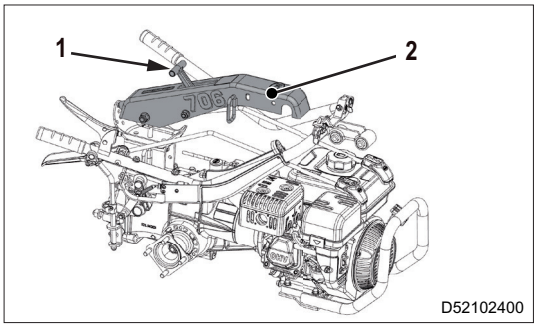
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5.1 Assembling the machine

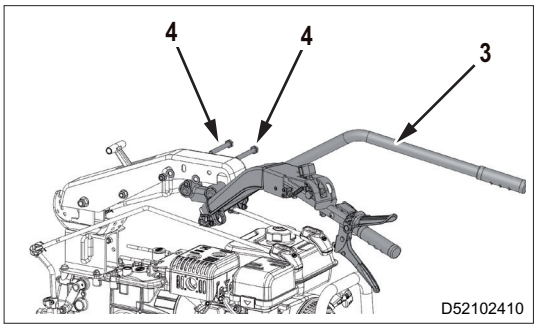
☞ Important

- The machine is delivered partially disassembled and packed in a box that can be handled by pallet trucks or forklifts.
- Open the box from the top and take out the supplied accessories, then cut the 4 corners of the box to free the machine and check that it has not been damaged during transport.

1 - Using the lever (1) raise and lock the mount (2) in position.

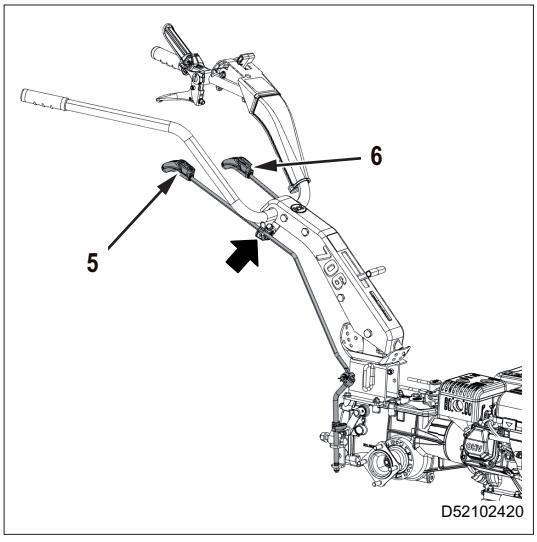


2 - Fit the handlebars (3) using the supplied screws (4).



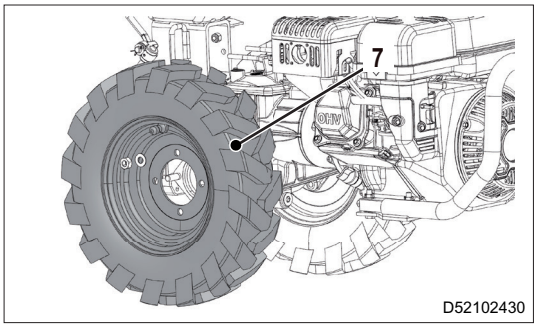
3 - Using the lever (1) raise and rotate the mount (2) by 180°.

4 - Rotate the PTO engagement control lever (5) and gearbox control lever (6) and insert them into their designated housings on the mount (2).



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5 - Fit the wheels (7) and tighten the nuts to their specified torques.
  - Tightening torque: 41 Nm (4 kgm)



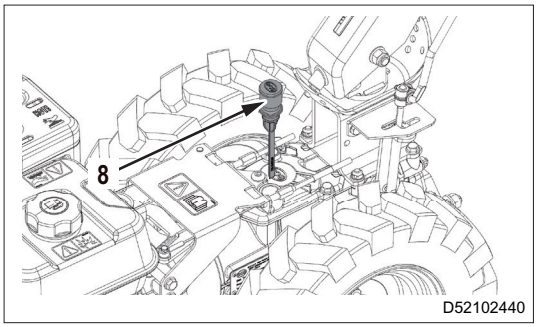
Note

- Ensure that the arrow determined by the tyre drawing points towards the engine.

6 - Inflate the tyres to the specified pressure. (For details, see “3.2 Technical data and performance”).

7 - Remove the cap fitted for transport and replace it with the dipstick (8).

8 - Fit the work equipment that is to be used. (For details, see “5.1 Assembling the machine”).



5.2 Preliminary checks

Checks before start

Check	Note
Engine oil level	See “6.3.2 Engine oil level check, topping up”
Clean the engine air filter	See “6.3.3 Cleaning the air filter”
Fuel level in the tank	See “6.3.1 Fuel level check and refuelling”
Oil level in the gearbox	See “6.4.1 Checking the SmartSafe and gearbox oil level”
Tyre pressure	See “3.2 Technical data and performance”

Checks in the workplace

- Check that the ground is free of stones, branches, irrigation pipes or other obstacles.
- Check that the slope of the ground to be worked on does not exceed 25°.

CAUTION

- **It is forbidden to operate on slopes of more than 25° to avoid damage to the engine. With slopes of more than 25°, the engine's lubrication circuit may not be able to guarantee proper lubrication of the internal parts, which may cause overheating and/or seizing phenomena.**

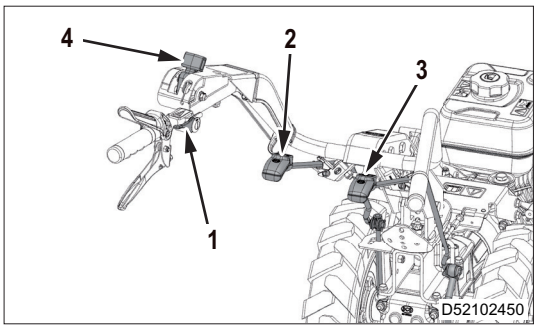
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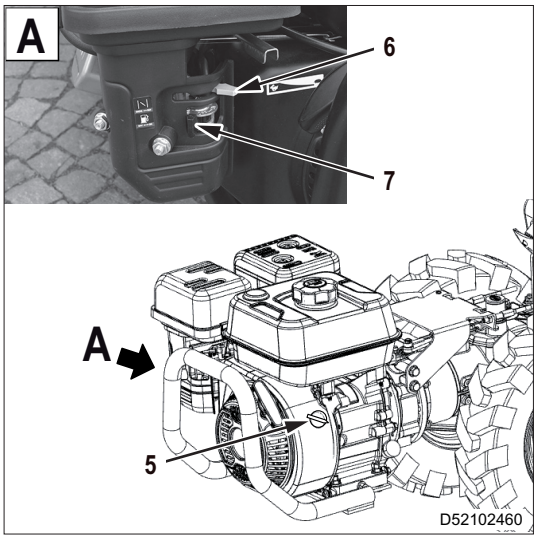
5.3 Starting the machine

☞ Important

- After starting the engine, check the correct operation of the SmartSafe lever (red) and the engine start/stop lever. For the details, see “Emergency stop”.
- With the clutch lever released, check that the SmartSafe lever (red) cannot be fully lowered. If it can be lowered completely without having pulled the clutch lever, it is mandatory to make an adjustment before commencing work. For the details, see “6.7.1 Adjusting the SmartSafe clutch”.

1 - Check that the throttle lever (1) is in the idle position.
2 - Check that the gear lever (2) is in the neutral position (0).
3 - Check that the PTO engagement control lever (3) is in the OFF (O) position.
4 - Check that the engine start/stop lever (4) is in the ON (I) position and that the engine ignition switch (5) on the engine is in the ON (I) position.
5 - Move the accelerator lever (1) to 1/3 of its stroke.
6 - Open the fuel tap (6) and move the choke lever (7) to the start position.
7 - Pull the starter handle (8) until resistance is felt (the engine is being compressed).
8 - Rewind the starter cable and pull vigorously.
9 - Gently push the starter handle back into place, avoiding knocking it against the engine.
10 - Place the choke lever (7) in the running position.
11 - If the engine does not start, repeat steps 7 and 8.





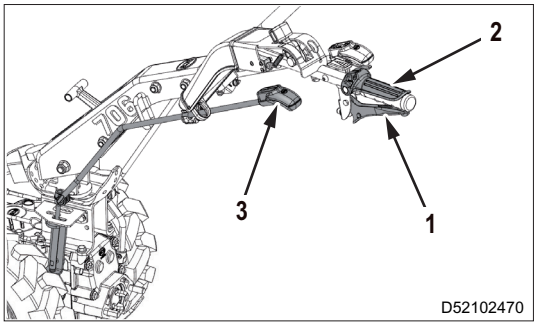
5.4 Travel

1 - After starting the engine, pull the clutch lever (1) and lower the SmartSafe lever (2) (red).
2 - Engage the desired gear direction using the gear lever (3).

Note

- In the event of gear engagement problems, release the clutch lever a little so that the transmission gears can move and engage the gear.

3 - Slowly release the clutch lever (1) and bring the machine to the beginning of the working course.



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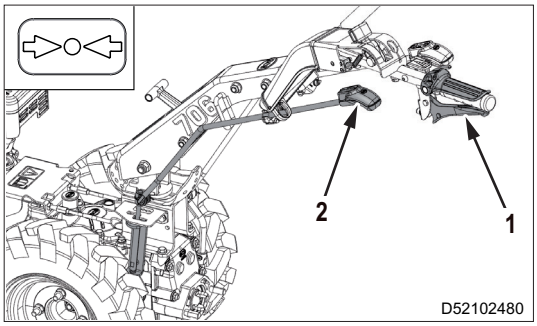
5.5 Reversing the direction of travel

CAUTION

- **When reversing the direction of travel, the travel speed changes with respect to the speed being used during work.**
  If the machine is performing tilling work and consequently the equipment is being towed, reverse speed is approximately 2.5 times the forward speed.
  Exercise extreme caution so as not to get run over by the machine.

1 - Halt travel pulling the clutch lever (1) and, keeping it pulled, select the desired direction with the gear lever (2).

1 - Gradually release the clutch lever (1) to reverse the direction of travel.



5.6 Getting started

☞ Important

- A one-speed (forward and reverse) gearbox with a one-speed power take-off is fitted to the machine. Travel speed and power take-off rotation speed are linked to each other and are adjustable via the throttle control.
- When the engine speed changes, the operator simultaneously controls the travel speed and power take-off speed.

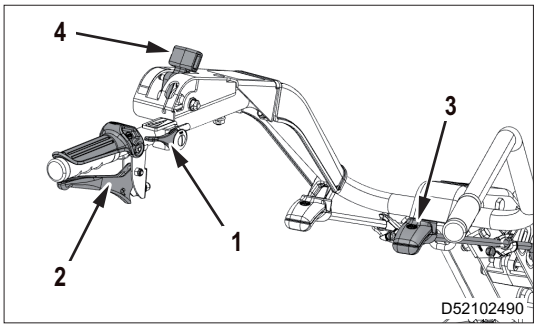
1 - Using the throttle lever (1), gradually increase the engine speed to the correct operating speed and start moving.

2 - Adjust the working speed depending on the equipment fitted and the ground conditions that need to be handled.

3 - Pull the clutch lever (2) and activate the power take-off with the lever (3).

4 - Release the clutch lever (2).

5 - Check that the machine is working properly and proceed with the work.



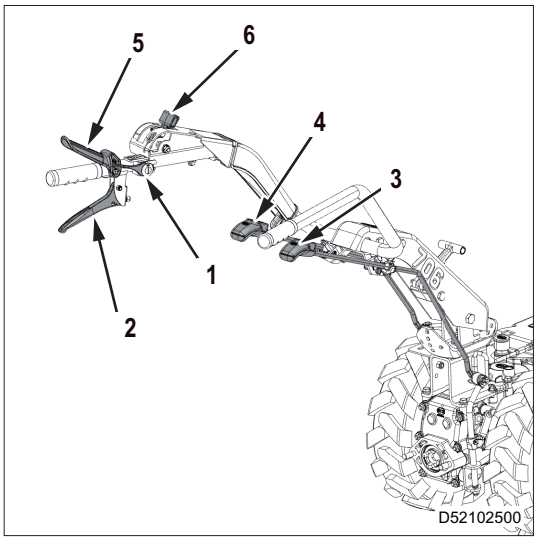
☞ Important

- Releasing the SmartSafe lever (red) immediately stops equipment functions and travelling functions, but does not stop the engine.
  If the engine is to be stopped, move the start/stop engine lever (4) to the OFF 'O' position.
  For the details, see “Emergency stop”.

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5.7 Stopping the machine

Stopping the engine



1 - Using the throttle lever (1), reduce the engine speed to idle.
2 - Pull the clutch lever (2) and stop the machine.
3 - Keep the clutch lever (2) pulled and deactivate the power take-off using the lever (3).
4 - Engage neutral with the gear lever (4).
5 - Release the clutch lever (2) and the SmartSafe lever (5) (red).
6 - Move the engine start/stop lever (6) to the OFF "O" position and stop the engine.
7 - Engage a gear using the gear lever (4) to lock the machine.

Emergency stop

There are two ways in which the machine can be stopped in an emergency.

1 - Release the SmartSafe lever (5) (red).

CAUTION

- **Releasing the SmartSafe lever (5) (red) immediately deactivates drive transmission to the wheels and the power take-off.**

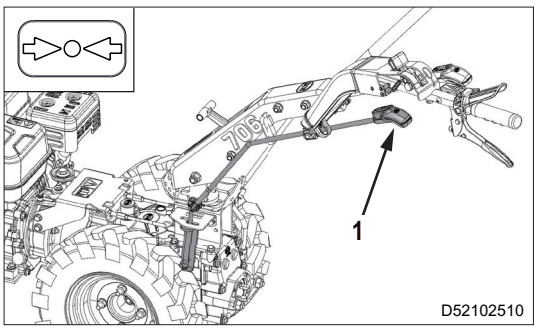
2 - Move the start/stop engine lever (6) to the OFF 'O' position.

5.8 Moving the machine with the engine switched off

WARNING

- **A mechanical transmission with a “reversible” worm gearbox is fitted to the machine. This allows movement of the driven shaft (wheel axle) with traction of the drive shaft (transmission shaft).**
  When shifting the gear lever into neutral on a slope, exercise caution and restrain the machine to prevent it from moving out of control.

1 - Set the gear control lever (1) to neutral and push the machine to move it.
2 - Once the machine has been moved, set the gears control lever (1) to the forward or reverse position, thereby locking the drive and braking the machine.



5.9 Parking the machine

1 - Place the machine on a solid, level ground where it will not get damaged.
2 - Stop the machine. See “5.7 Stopping the machine”.
3 - Close the fuel valve.

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5.10 Preparing for long periods of inactivity

If you do not plan to use the machine for a long time, store it in a place protected against the weather and possible impacts. Place the machine in a stable position, and perform the following operations:

1 - Wash it thoroughly.
2 - Check for and eliminate any oil leaks.
3 - Check and replace the damaged parts.
4 - Empty the fuel tank.
5 - Start the engine and wait for it to stop.
6 - Protect the machine from dust with a sheet.

5.11 Commissioning

Before putting the machine back into service after a long period of inactivity, perform the following checks:

1 - Lubricate all moving parts.
2 - Check for and eliminate any oil leaks.
3 - Check for any worn, missing, or incorrectly fastened parts.
4 - Check the tightness of the bolts.
5 - Refuel.
6 - Check the condition of the air filter. See “6.3.3 Cleaning the air filter”.

6. Maintenance

CAUTION

- **Maintenance operations must be carried out in an appropriate location.**
- **Use personal protective equipment during maintenance.**
- **Before proceeding with maintenance carefully read "2.6 Machine maintenance precautions".**

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6.1 Ordinary Maintenance Schedule

Service Interval				Page	Person in charge
6.3	Each time the machine is used	6.3.1	Fuel level check and refuelling	58	Operator
		6.3.2	Engine oil level check, topping up	58	Operator
		6.3.3	Cleaning the air filter	58	Operator
6.4	Every 50 hours or every week	6.4.1	Checking the SmartSafe and gearbox oil level	60	Operator
6.5	Every 100 hours or every year	6.5.1	Replacing the air filter	60	Operator
		6.5.2	Cleaning the carburettor float bowl	60	Operator
		6.5.3	Cleaning the spark plug	61	Operator
		6.5.4	Replace the engine oil	61	Operator
		6.5.5	Replace the gearbox and SmartSafe oil	62	Operator
6.6	Every 300 hours	6.6.1	Cleaning the petrol tank filter	62	Operator
		6.6.2	Adjusting the valve clearance	63	Operator
6.7	When neces-sary	6.7.1	Adjusting the SmartSafe clutch	63	Operator
		6.7.2	Replacing the work equipment	64	Operator
		6.7.3	Cleaning the machine	67	Operator

6.2 Refuelling and lubrication

Engine oil

- General purpose engine oil specifications: SAE 10W-30.

Fuel

- Fuel specification: unleaded petrol with octane rating > 86.

SmartSafe and gearbox oil

Important

- Do not mix oils of different brands or types.
- Add the specified amount of oil.
- When replacing the oil, replace the filter at the same time.
- If the oil is not clear, it may be contaminated by water. Consult the BCS Support Service.
- Store the oil in an enclosed place to prevent it from being contaminated by foreign materials, such as dirt and water.

- For SmartSafe clutch and gearbox: BCS Power Lube W7 SAE 80W (API GL-4 / GL 5).

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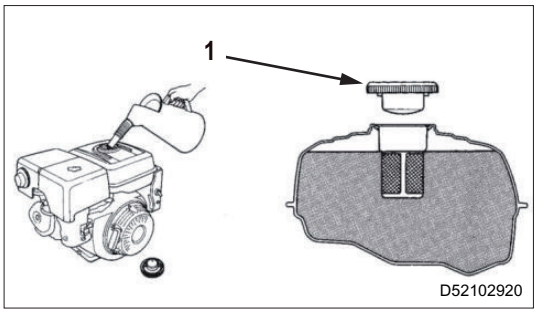
6.3 Each time the machine is used

6.3.1 Fuel level check and refuelling

CAUTION

- **Before refuelling carefully read “2.9 Precautions during fuel and engine oil filling”.**

1 - Place the machine in the parking position on level ground.
2 - Remove the plug (1).
3 - If the fuel level is low, top up with petrol until the correct level is reached and tighten the cap (1).

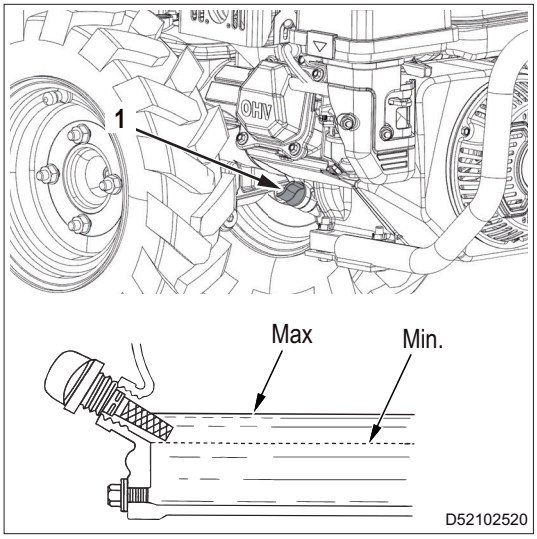


6.3.2 Engine oil level check, topping up

CAUTION

- **Before refuelling carefully read “2.9 Precautions during fuel and engine oil filling”.**

1 - Place the machine in the parking position on level ground.
2 - Position the engine so that it is level.
3 - Remove the dipstick (1) and wipe out the oil with a cloth.
4 - Check that the oil is flush with the lip of the hole (2).
5 - If the oil level is below the lip of the hole, top up using the specified oil in the same hole until the correct level is reached. For the details, see “6.2 Refuelling and lubrication”.
6 - Check the level again by following steps 2 to 4.



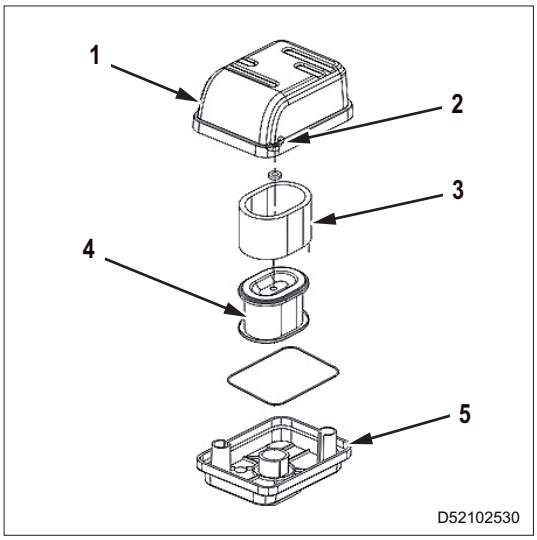
6.3.3 Cleaning the air filter

CAUTION

- **Wear protective equipment such as protective goggles, anti-dust mask and gloves.**
- **Do not clean the air filter in windy areas or dusty environments.**
- **If working in particularly dusty areas, anticipate cleaning.**

Inspect both filter parts and, if they are damaged, replace them.

1 - Remove the air filter cover (1).
2 - Remove the wing nut (2).
3 - Remove the complete filter.
4 - Remove the outer sponge section (3) and wash it in a solution of detergent and warm water.
Rinse it thoroughly and wait for it to dry completely.
5 - Using compressed air at 0.29 - 0.49 MPa (3.0 - 5.0 kgf/cm^2), blow air over the section (4) from the inside outwards to remove any dust.



☞ Important

- Use compressed air at low pressure to prevent damage to parts.

6 - Immerse the outer sponge section (3) in clean engine oil and wring it out to remove any excess oil (it should only be damp with oil).
7 - Clean the interior of the cover (1).
8 - Insert the air filter section (4) into the filter housing, checking that it is correctly oriented and fitted.
9 - Tighten the wing nut (2).
10 - Slide the outer sponge section (3) over the section (4) of the air filter.
11 - Fit the cover (1).

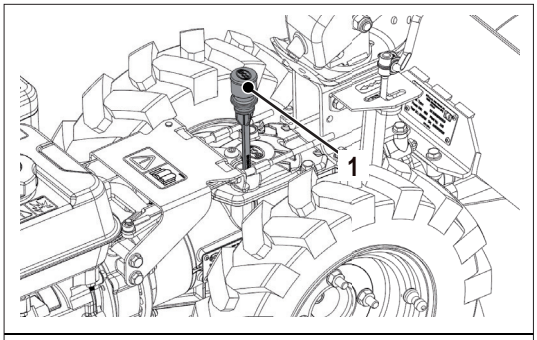
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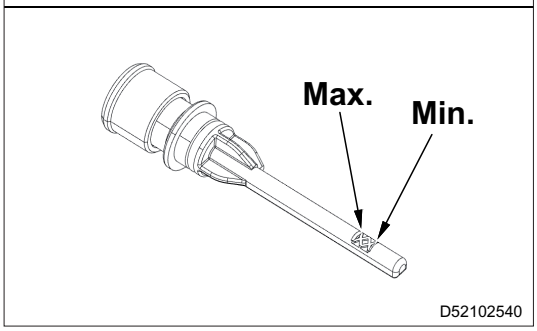
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6.4 Every 50 hours or every week

6.4.1 Checking the SmartSafe and gearbox oil level

1 - Place the machine in the parking position on level ground.
2 - Position the engine so that it is level.
3 - Remove the dipstick (1) and wipe it with a cloth.
4 - Fully insert the dipstick (1), then pull it out again and check that the oil is between the Min. and Max. marks.
5 - If necessary, top up with oil.

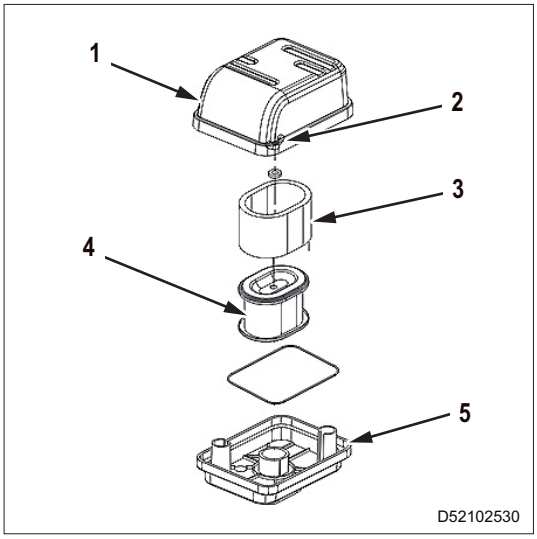




6.5 Every 100 hours or every year

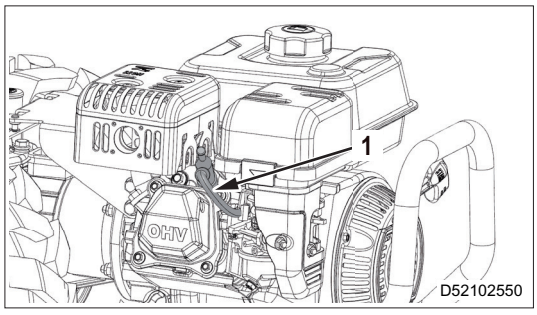
6.5.1 Replacing the air filter

1 - Remove the air filter cover (1).
2 - Remove the wing nut (2).
3 - Remove the complete filter and discard it.
4 - Immerse the new outer sponge section (3) in clean engine oil and wring it out to remove any excess oil (it should only be damp with oil).
5 - Clean the interior of the cover (1).
6 - Insert the new air filter section (4) into the filter housing (5), checking that it is correctly oriented and fitted.
7 - Tighten the wing nut (2).
8 - Slide the outer sponge section (3) over the section (4) of the air filter.
9 - Fit the cover (1).

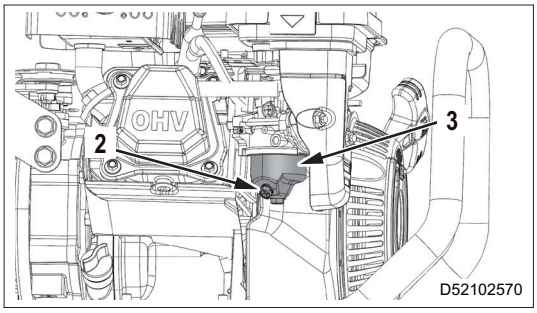


6.5.2 Cleaning the carburettor float bowl

1 - Shut off the petrol tap and remove the spark plug lead (1).



2 - Loosen the screw (2) and completely drain the petrol contained in the tank (3).
3 - Tighten the screw (2).

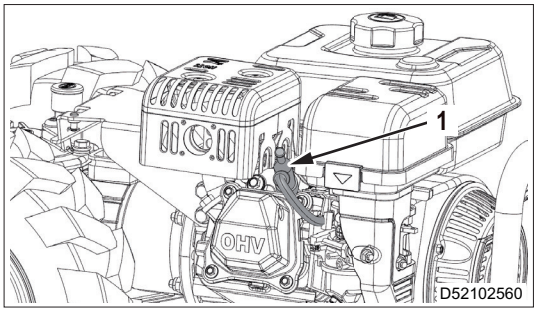


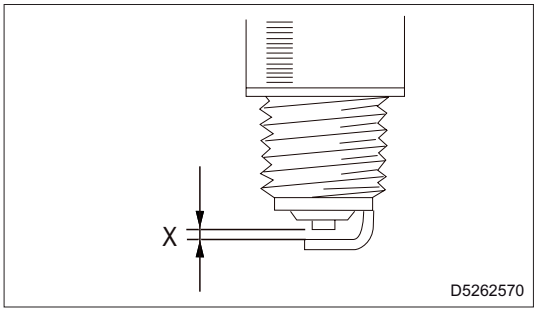
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6.5.3 Cleaning the spark plug

For the engine to run smoothly, the spark plug electrodes must be opened to the correct gap and have no deposits.

1 - Remove the spark plug cap (1).
2 - Use a spanner and unscrew the spark plug.
3 - Use a brass brush to remove soot and dirt and wipe with a damp cloth to remove any residue.
4 - Visually inspect the spark plug. Replace it if the insulator is broken or chipped.
5 - Check that the spark plug washer is inserted and in good condition.
6 - Check that the distance between the electrodes (X) is correct.
7 - Distance between electrodes (X): 0.7-0.8 mm
8 - If necessary, replace the spark plug with one of the same type.
   ◦ Spark plug type: F6RTC or F7RTC
9 - Begin screwing in the spark plug by hand to prevent damage to the thread, then tighten the spark plug with a spanner to the specified torque.
   ◦ Spark plug torque (M14x1.25mm): 23 – 30 Nm (2.5 – 3.0 kgm)



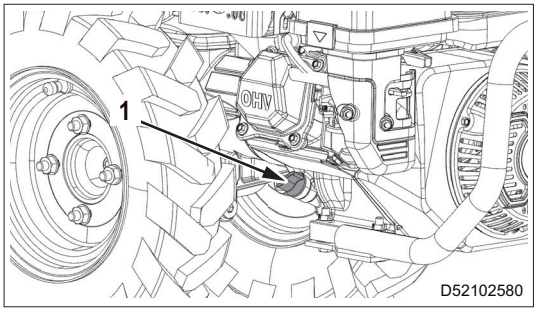


6.5.4 Replace the engine oil

WARNING

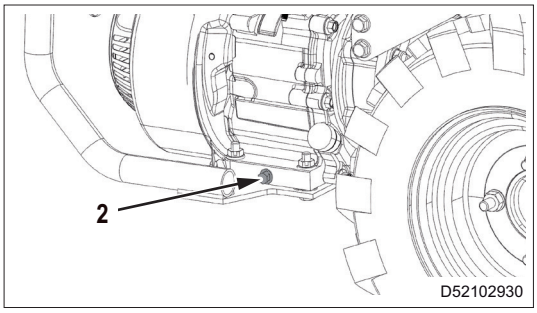
- **When removing the oil filler cap, loosen it gradually to release the internal pressure and prevent oil from splashing out.**

1 - Place the machine in the parking position on level ground.
2 - Position the engine so that it is level.
3 - Remove the dipstick (1) and wipe out the oil with a cloth.



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4 - Place a container under the drain plug (2) to collect the oil.
5 - Unscrew the cap (2), let all the oil flow out and tighten the cap.
6 - Pour in new oil from the filler nozzle and fit the dipstick (1). (For details, see “6.3.2 Engine oil level check, topping up”).
   ◦ Refill capacity: max. 0.6 litres
7 - Check for oil leaks; eliminate any oil spillage.

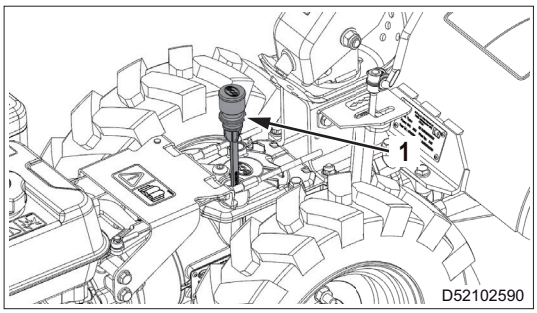


6.5.5 Replace the gearbox and SmartSafe oil

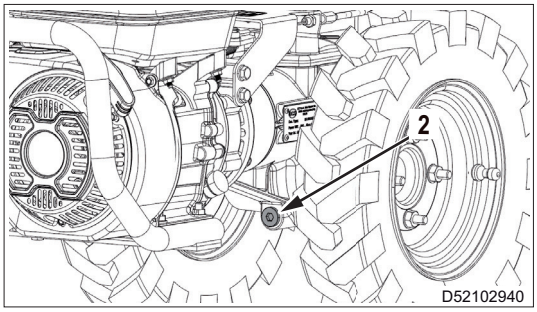
WARNING

- **When removing the oil filler cap, loosen it gradually to release the internal pressure and prevent oil from splashing out.**

1 - Place the machine in the parking position on level ground.
2 - Position the engine so that it is level.
3 - Remove the dipstick (1) and wipe out the oil with a cloth.



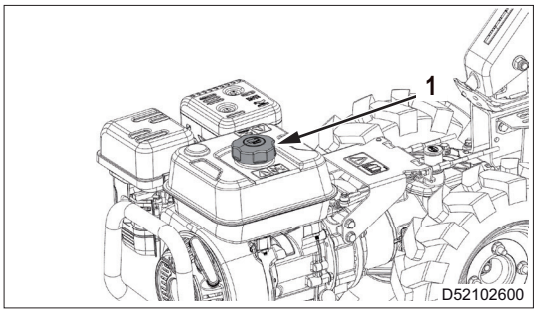
4 - Place a container under the drain plug (2) to collect the oil.
5 - Unscrew the cap (2), let all the oil flow out and tighten the cap.
6 - Pour in new oil from the filler nozzle and fit the dipstick (1). (For details, see “6.4.1 Checking the SmartSafe and gearbox oil level”).
   ◦ Refill capacity: max. 2.3 litres
7 - Check for oil leaks; eliminate any oil spillage.



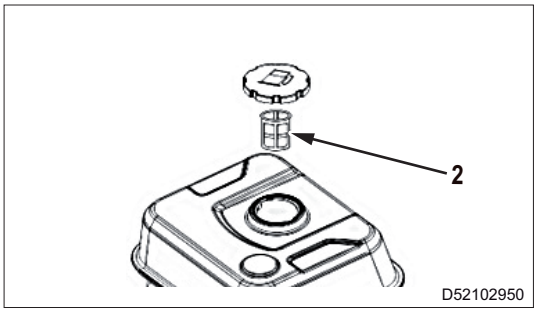
6.6 Every 300 hours

6.6.1 Cleaning the petrol tank filter

1 - Shut off the petrol tap and remove the spark plug lead.
2 - Remove the petrol cap (1).



3 - Remove the filter (2) and wash it in a solution of detergent and warm water, then rinse thoroughly.
4 - Leave the filter (2) to dry completely.
5 - Fit the filter (2) and replace the cap (1).



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6.6.2 Adjusting the valve clearance

For this maintenance, contact the Service Centre.

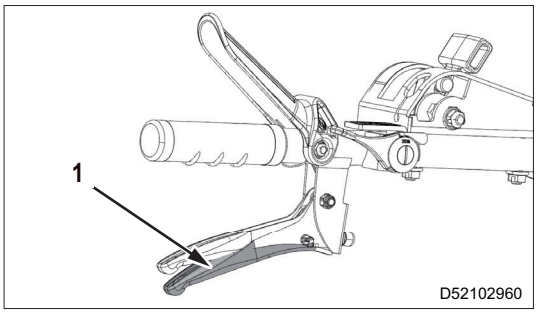
6.7 When necessary

6.7.1 Adjusting the SmartSafe clutch

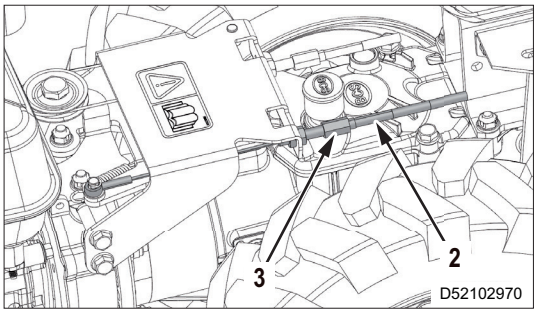
Note

Adjustment of the SmartSafe clutch must be carried out when, during normal use of the machine, problems are encountered when engaging the forward or reverse gears.

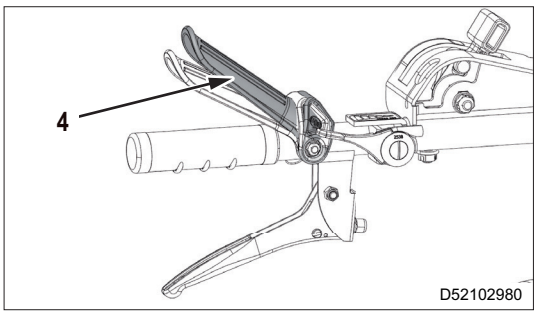
1 - Place the machine in parking position, and lay the equipment on the ground.
2 - Check that the clutch lever (1) has a free stroke of approx. 15-20 mm.



3 - If this is not the case, adjust the clutch cable (2) using the adjustment screw (3).

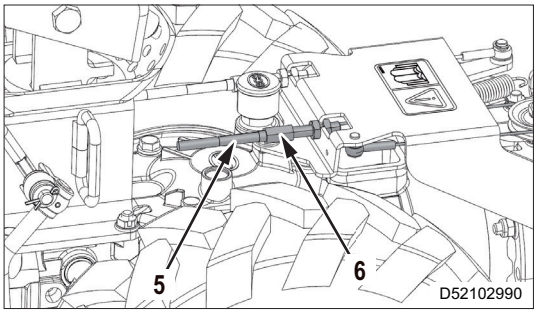


4 - Check that the SmartSafe (red) lever (4) has a free stroke of approx. 15-20 mm.



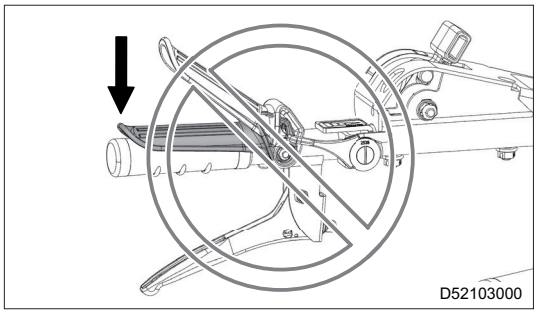
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5 - If this is not the case, adjust the clutch cable (5) using the adjustment screw (6).



6 - Check that it is not possible to fully lower the SmartSafe (red) lever (4) when the clutch lever (1) is released.

7 - Rotate the handlebar mount and check that the adjustments do not change. For the details, see “Rotating the handlebar mount”.



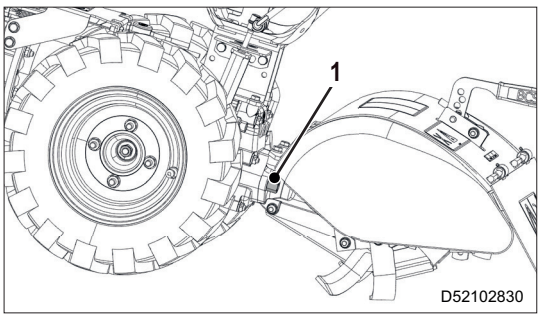
6.7.2 Replacing the work equipment

The machine is set up for use with a variety of work equipment (such as tiller, cutter bar, etc.).
The operator can replace the equipment at any time using the following procedure.

Replacing the work equipment with standard coupling

1 - Place the machine in parking position, and lay the equipment on the ground.

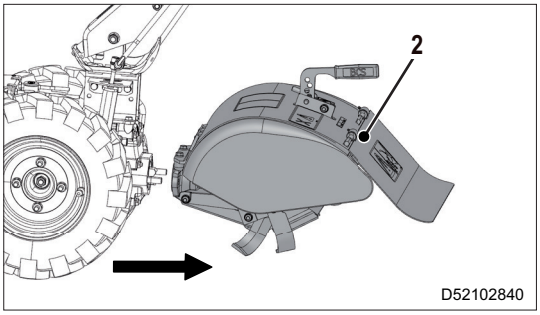
2 - Remove nuts (1).



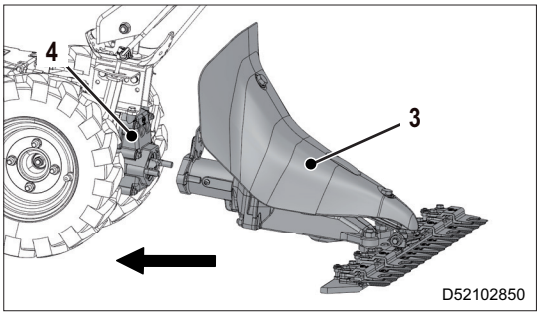
3 - Remove the equipment (2).

CAUTION

- **When removing the equipment, the machine becomes unbalanced on the engine side and rotates automatically.**
- **Restrain the machine by using the handlebars or insert a block under the engine to support it.**

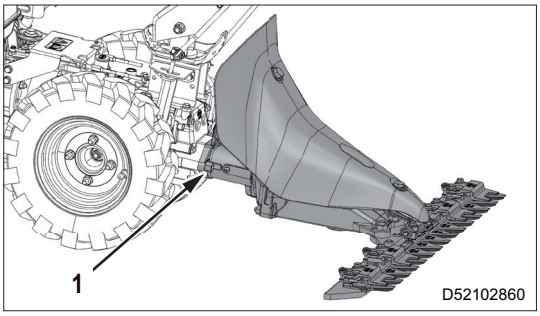


4 - Place the new equipment (3) on the power take-off (4).



5 - Tighten nuts (1).
Tightening torque: 72 Nm (7 kfgm)

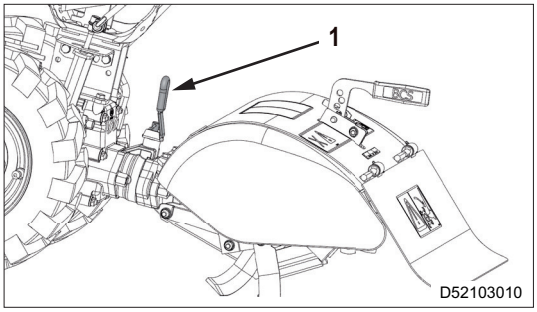
6 - Rotate the handlebar mount. For the details, see “Rotating the handlebar mount”.



Replacing the work equipment with rapid coupling

1 - Place the machine in parking position, and lay the equipment on the ground.

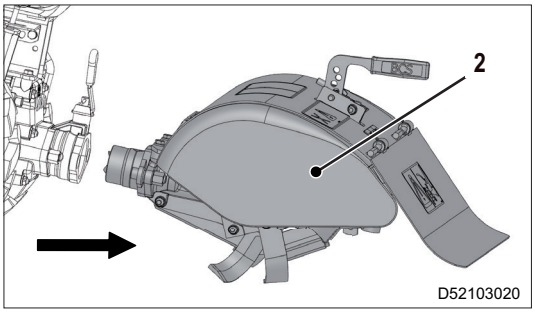
2 - Raise the lever (1).



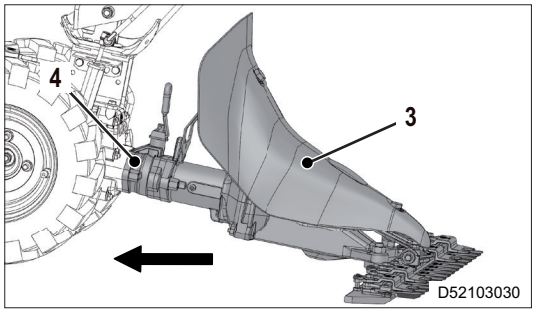
3 - Remove the equipment (2).

CAUTION

- **When removing the equipment, the machine becomes unbalanced on the engine side and rotates automatically.**
- **Restrain the machine by using the handlebars or insert a block under the engine to support it.**



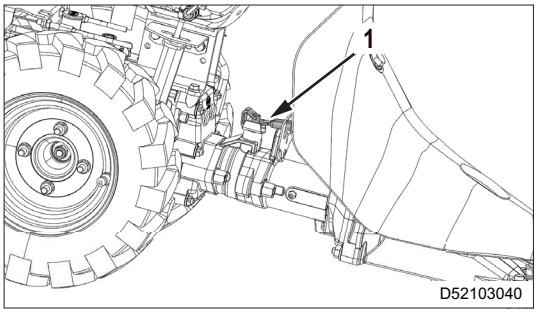
4 - Place the new equipment (3) on the power take-off (4).



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5 - Lower the lever (1) and ensure that the equipment cannot slide out.

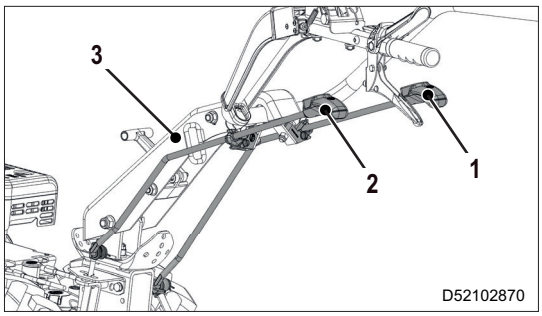
6 - Rotate the handlebar mount. For the details, see “Rotating the handlebar mount”.



Rotating the handlebar mount

1 - Place the machine in parking position, and lay the equipment on the ground.

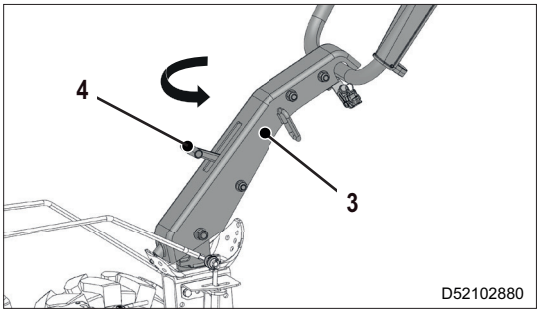
2 - Disconnect the power take-off engagement control lever (1) and gear control lever (2) from the handlebar mount (3).

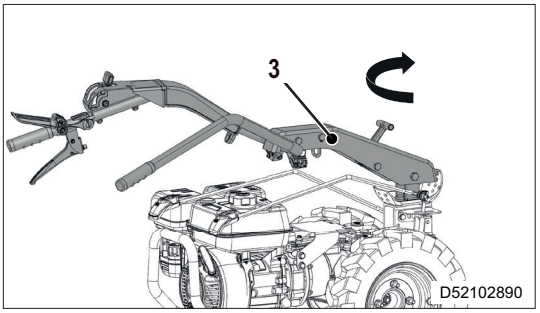


3 - Using the lever (4) rotate the handlebar mount (3) by 180°.

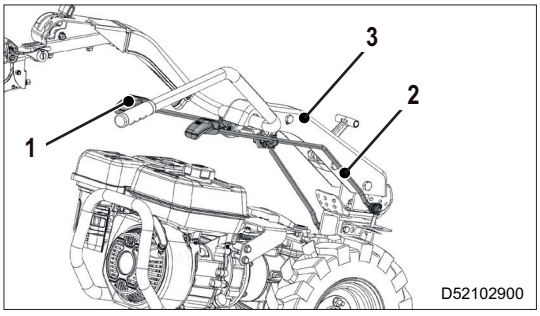
CAUTION

- **Rotate the handlebar mount (3) counter-clockwise to move it from the tilling position (towed equipment) to the mowing position (pushed equipment).**
- **Rotate the handlebar mount (3) clockwise to move it from the mowing position (pushed equipment) to the tilling position (towed equipment).**





4 - Rotate the PTO engagement control lever (1) and gear control lever (2) and insert them into their designated housings on the handlebar mount (3).



6.7.3 Cleaning the machine

Use neutral detergents authorized by current legislation. Clean the machine with a pressurised water jet.

WARNING

- **Do not spray pressurised water directly on the engine.**

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6.8 Issues, causes and remedies

Issue	Cause	Solution
When pulling the starting handle, the engine turns but does not start	Defective or disconnected spark plug lead	• Check spark plug lead
	No fuel	• Add fuel
	Fuel tap and/or choke lever closed	• Open the fuel tap and/or move the choke lever to the start position
	Engine start levers in OFF position	• Place all engine start levers to ON
	Cold engine and/or defective or dirty spark plug	• Close air and/or change spark plug
	Engine hot	• Open the air
	Tank cap with blocked vent hole	• Clean the cap vent hole
Difficult starting or engine running uneven	Dirty air filter	• Clean the air filter
	Carburettor dirty	• Clean the carburettor
	Presence of deposits or impurities in fuel	• Empty the tank and fill with clean fuel • Check the fuel filter and replace if necessary
	Dirty or defective spark plug	• Clean the spark plug or replace if necessary
Noise during operation	Blades or knives bent due to impact with foreign objects	• Straighten or replace damaged blades or knives
When the gear is engaged the drive fails or is not continuous	SmartSafe clutch not working	• Adjust clutch play and, if necessary, repair or replace it

7. General information

7.1 Ordering spare parts and accessories

Contact an authorised BCS S.p.A. dealer, always indicating the "Machine Model" and the "Serial Number" shown on the identification plate (For details, see “1.11 Identification data”).

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7.2 Disposal

In the event of disposal of the machine or parts of it (oils, hoses, plastic materials, etc.), comply with the regulations in force in the country in which this operation is carried out.

- For further information, visit https://bcsgroup.it/it-it/sostenibilita/#etichettatura-ambientale or scan the QR code.