

**EN**

Original Instructions  
Version 2

**DRAPER**<sup>®</sup>

141CC PETROL  
**CULTIVATOR/  
TILLER**

**04603**



**UK  
CA** **CE**

# 1. Preface

These are the original product instructions. This document is part of the product; retain it for the life of the product, passing it on to subsequent holders. Read this manual in full before attempting to assemble, operate, or maintain this product.

This Draper Tools manual describes the purpose of the product and contains all the necessary information to ensure its correct and safe use. Following all the instructions and guidance in this manual will ensure the safety of both the product and the operator and increase the lifespan of the product.

All photographs and drawings within this manual are supplied by Draper Tools to help illustrate correct operation of the product.

Every effort has been made to ensure the information contained in this manual is accurate. However, Draper Tools reserves the right to amend this document without prior warning. Always use the latest version of the product manual.

## 1.1 Product Reference

**User Manual for:** Petrol Cultivator/Tiller, 141cc

**Stock No:** 04603

**Part No:** CP145

## 1.2 Revisions

**Version 1:** October 2018

First release

**Version 2:** April 2023

General formatting and content updates

As our manuals are continually updated, always ensure that the latest version is used.

For the latest version of this manual and the associated parts list, if applicable, please visit

[drapertools.com/manuals](http://drapertools.com/manuals)

## 1.3 Understanding the Safety Content



**WARNING!** – Situations or actions that may result in personal injury or death.



**CAUTION!** – Situations or actions that may result in damage to the product or surroundings.

**Important:** – Information or instructions of particular importance.

## 1.4 Copyright © Notice

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### 3. Warranty

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Draper Tools products are carefully tested and inspected before shipment and are guaranteed to be free from defective materials and workmanship.

Should the tool develop a fault, return the complete tool to your nearest distributor or contact Draper Tools directly. Contact information can be found at the back of this manual.

Proof of purchase must be provided.

If, upon inspection, it is found that the fault occurring is due to defective materials or workmanship, repairs will be carried out free of charge. This warranty period covers parts and labour for 12 months from the date of purchase. Where tools have been hired out, the warranty period covers 90 days from the date of purchase.

This warranty does not apply to any consumable parts, batteries or normal wear and tear, nor does it cover any damage caused by misuse, careless or unsafe handling, alterations, accidents, or repairs attempted or made by any personnel other than the authorised Draper Tools repair agent.

In all cases, to make a claim for faulty workmanship or materials within the standard warranty period, please contact or return the product to the place of purchase. Proof of purchase may be required.

If the place of purchase is no longer trading or if you experience any difficulties with your warranty, please contact Customer Services with the product details and your proof of purchase. Contact details can be found at the back of this manual.

If the tool is not covered by the terms of this warranty, repairs and carriage charges will be quoted and charged accordingly.

This warranty supersedes any other guarantees expressed or implied and variations of its terms are not authorised.

Your Draper Tools guarantee is not effective until you can produce, upon request, a dated receipt or invoice to verify your purchase within the guarantee period.

Please note that this warranty is an additional benefit and does not affect your statutory rights.

#### **Draper Tools Limited**

## 4.1 Scope

This product is designed to prepare earth and soil for planting flowers and vegetables as part of home garden use and features a four-stroke petrol engine. Any other application beyond the conditions established for use will be considered misuse. Draper Tools accepts no responsibility for improper use of this product.



**WARNING! This product is not a toy and must be respected.**

Read this manual in full before attempting to assemble, operate or maintain the product, and retain it for later use.

## 4.2 Specification

Stock No.	04603
Part No.	CP145
Rated power	2.5kW
Engine	
Size	141cc
Horsepower	3.6hp
Type	4-Stroke
Fuel	
Capacity	1.3L
Type	E5 (97 RON), E10* (95 RON)
Oil	
Capacity	0.35L
Type	SAE 10W-30
Tilling width	360mm
Tilling depth	260mm
Rotation speed	110rpm
Vibration levels	
Left handlebar	11.06m/s <sup>2</sup>
Right handlebar	7.72m/s <sup>2</sup>
Noise emissions	
Sound pressure level	69.16dB(A)
Sound power level	93dB(A)
Weight	32kg

\*Draper Tools recommends adding an additive or stabiliser to the fuel when using E10 in order to extend the life of the fuel in the tank.

Important: The declared vibration total values and noise emissions values have been measured in accordance with a standard test method and may be used for comparing one tool with another. These values may also be used in a preliminary assessment of exposure.



**WARNING! The vibration and noise emissions during actual use of the product can differ from the declared values depending on the mode selected and the workpiece upon which it is used. Noise levels during operations may reach 90dB(A). Before each use, estimate the likely exposure resulting from the actual conditions of use. Take into account all parts of the operation cycle in order to identify any safety measures required to protect the operator.**

**Important:** Read all Health and Safety instructions before attempting to operate, maintain or repair this product. Non-compliance with these instructions may result in injury or damage to the user or the product.

## 5.1 General Health and Safety Precautions for Tilling machines

### Training

- Read the instructions carefully.
  - Be familiar with the controls and the proper use of the equipment.
- Never allow children or people unfamiliar with these instructions to use the machine.
  - Local regulations can restrict the age of the operator.
- Never work while people, especially children, or pets are nearby.
- Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or their property.

### Preparation

- While working, always wear substantial footwear and long trousers.
  - Do not operate the equipment when barefoot or wearing open sandals.
- Thoroughly inspect the area where the equipment is to be used and remove all objects which can be thrown up by the machine.



### **WARNING! Petrol is highly flammable:**

- Store fuel in containers specifically designed for this purpose.
- Refuel outdoors only and do not smoke while refuelling.
- Add fuel before starting the engine; never remove the cap of the fuel tank or add petrol while the engine is running or when the engine is hot.
- If petrol is spilled, do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until petrol vapours have dissipated.
- Replace all fuel tank and container caps securely.
- Replace faulty silencers.
- Before using, always visually inspect to see that the tools are not worn out or damaged.
  - Replace worn out or damaged elements and bolts in sets to preserve balance.

### Operation

- Do not operate the engine in a confined space where dangerous carbon monoxide fumes can collect.
- Work only in daylight or in good artificial light.
- Always be sure of your footing on slopes.
- Walk, never run with the machine.
- For wheeled rotary machines, work across the slopes, never up and down.
- Exercise extreme caution when changing direction on slopes.
- Do not work on excessively steep slopes.
- Use extreme caution when reversing or pulling the machine towards you.
- Do not change the engine governor settings or overspeed the engine.
- Start the engine carefully according to manufacturer instructions and with feet well away from the tool(s).
- Do not put your hands or feet near or under rotating parts.
- Never pick up or carry a machine while the engine is running.
- Stop the engine:
  - Whenever you leave the machine.
  - Before refuelling.
- Reduce the throttle setting during engine shut down and, if the engine is provided with a shut-off valve, turn the fuel off at the conclusion of working.

### Maintenance and Storage

- Keep all nuts, bolts and screws tight to ensure the equipment is in safe working condition.
- Never store the equipment with petrol in the tank inside a building where fumes can reach an open flame or spark.
- Allow the engine to cool before storing in any enclosure.
- To reduce the fire hazard, keep the engine, silencer, battery compartment and petrol storage area free of vegetative material and excessive grease.
- Replace worn or damaged parts for safety.
- If the fuel tank has to be drained, this shall be done outdoors.

## 5.2 Additional Health and Safety Precautions for this Tilling Machine

- Observe all basic Health and Safety precautions when working with machines and mechanical tools in an outdoor environment.
- **ALWAYS** ensure that all safety features are in good working order and all safety labels are visible before use.
- Stay alert at all times when using the machine and **DO NOT** use it while tired or under the influence of alcohol, drugs or medication.
- **DO NOT** modify the machine in any way and use it only in the manner intended.
- **DO NOT** tamper with or disable any of the safety systems employed by the machine.
- Wear appropriate personal protective equipment, including ear defenders and protective footwear and gloves.
- **DO NOT** overreach and maintain good balance while using the tool.
- Remove all adjustment tools before use.
- **ALWAYS** ensure that the drag bar is in place before use.
- **NEVER** operate the tiller if the mudguards are damaged or missing.
- Adjust the tine rotation depth according to the condition of the ground.
  - Harder ground should be worked in small stages.
- Keep a firm and secure grip on both handlebars during use.
  - The handlebars may lift when the clutch engages.
- **ALWAYS** start the machine on a level surface and do not tilt it during start-up.
- If the tiller vibrates abnormally during use, immediately stop the machine, allow it to cool and investigate the cause.
  - **DO NOT** use the tiller until the issue has been resolved.
- **DO NOT** work on soggy ground as lumps of earth containing dangerous objects may get caught on the tines and thrown into the air.
- **DO NOT** work on any ground under which supply lines may be located.
- Avoid working near trees as the machine may sever their roots and make them unstable.

- **ALWAYS** reduce the engine setting before switching off the machine.
  - If the emergency stop lever is used to stop the machine, ensure that the fuel is switched off before storing it.
- **ALWAYS** switch off the engine, allow the tines to stop completely and allow the engine to cool before adjusting, maintaining or transporting the machine.
- Maintain the machine appropriately and correctly in order to prevent damage to moving parts and mechanisms.
- **ONLY** have the machine serviced by authorised and suitably qualified personnel.

## 5.3 Additional Health and Safety Information for Machines with a Petrol Engine

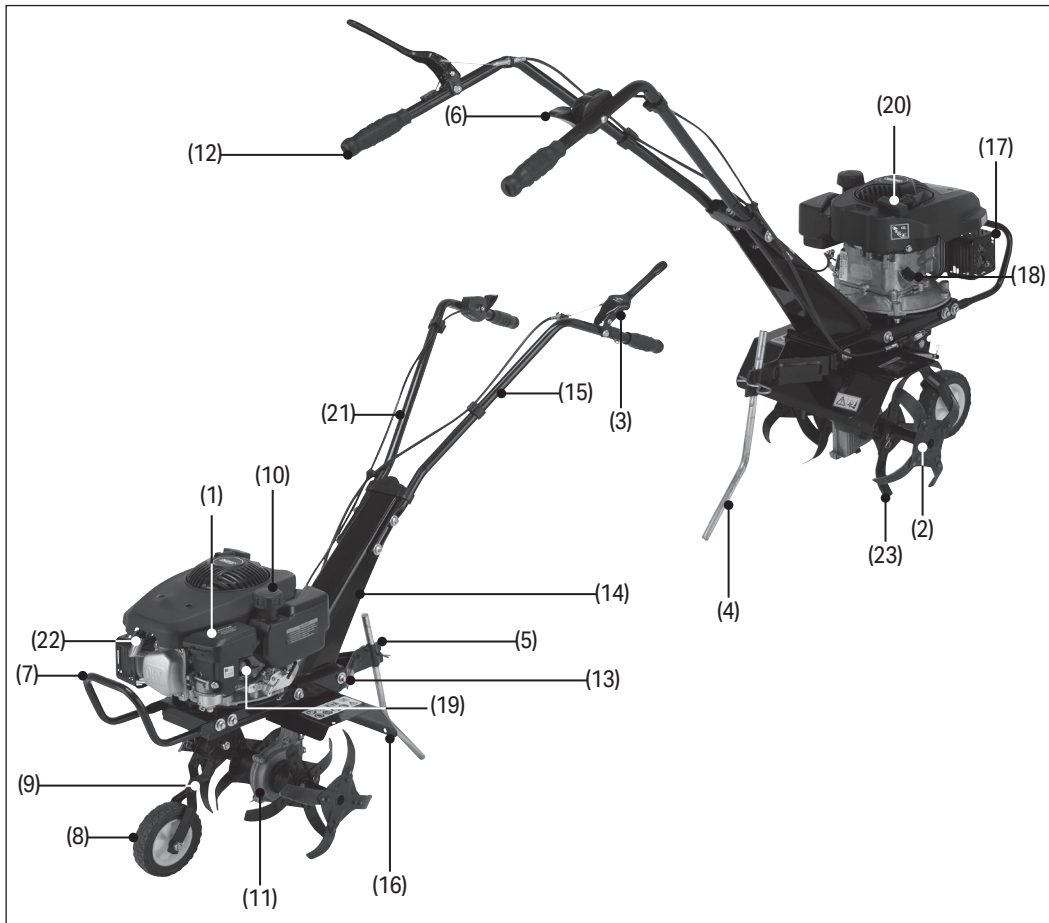
- **NEVER** smoke in the vicinity of the machine, especially during refuelling.
- **NEVER** start the engine if you can smell petrol vapour in the air.
  - If petrol vapour is present, wait for it to dissipate or move to a new location.
- The engine and fuel get hot during use.
  - **DO NOT** touch the engine during or immediately after use and allow it to cool before refuelling.
- **NEVER** remove the fuel cap while the engine is running or immediately after use.
  - Take care when opening the fuel cap after use as hot vapour may be released from the opening.
- **NEVER** place objects on the engine while it is in use and keep all air vents clear of dust, dirt and other obstructions.

**Important:** E10 fuel is hygroscopic and attracts moisture. Read all of the preparation and maintenance information relating to E10 fuels before using it in this machine. Draper Tools recommends use of an additive or stabiliser with E10 fuels to extend the life of the fuel when stored in the product. **ALWAYS** read the label of any additive or stabiliser applied.



**WARNING!** The machine exhaust emits toxic carbon monoxide: a colourless and odourless gas. Breathing exhaust fumes can cause loss of consciousness, permanent respiratory damage and eventually death. **ONLY** operate this machine in a well-ventilated outdoor environment.

## 6.1 Product Overview



- |                          |  |
|--------------------------|--|
| (1) Air filter           | (13) Handlebar height adjustment bolts |
| (2) Blade assembly       | (14) Handlebar support                 |
| (3) Clutch lever         | (15) Left handlebar                    |
| (4) Drag bar             | (16) Mudguard                          |
| (5) Drag bar socket      | (17) Muffler                           |
| (6) Engine control lever | (18) Oil dipstick                      |
| (7) Front handle         | (19) Primer bulb                       |
| (8) Front wheel          | (20) Recoil starter                    |
| (9) Front wheel fork     | (21) Right handlebar                   |
| (10) Fuel tank cap       | (22) Spark plug                        |
| (11) Gearbox             | (23) Tines                             |
| (12) Hand grips          |  |

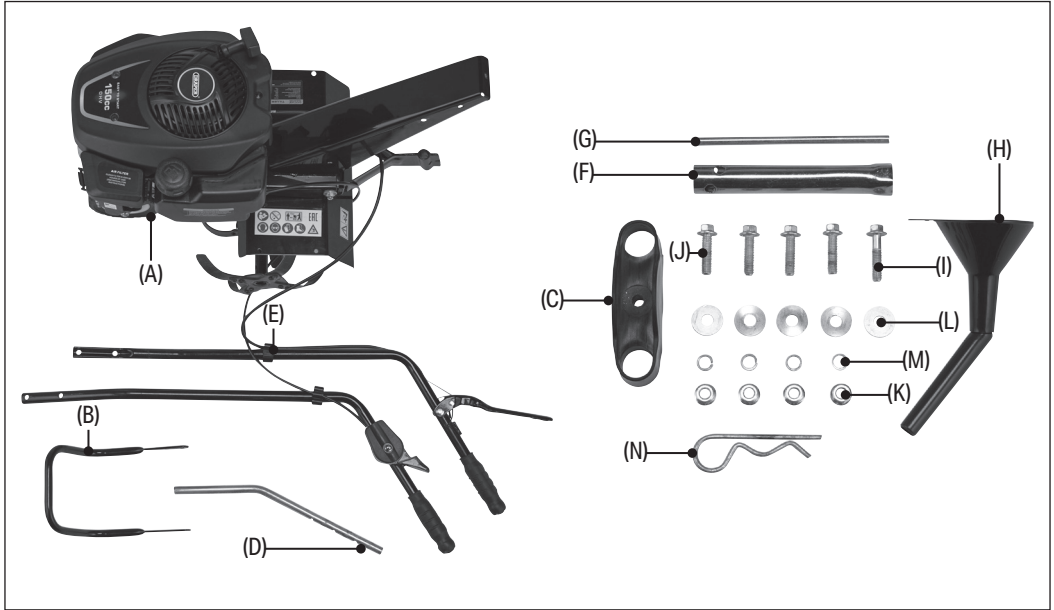


# 6. Identification and Unpacking

## 6.2 What's in The Box?

Carefully remove the product from the packaging and examine it for any signs of damage that may have occurred during shipment.

Before assembling the product, lay the contents out and check them against the parts shown below. If any part is damaged or missing, do not attempt to use the product. Please contact the Draper Helpline; contact details can be found at the back of this manual.



- (A) 1 x Main assembly including handlebars
- (B) 1 x Front handle
- (C) 1 x Handlebar bracket
- (D) 1 x Drag bar
- (E) 2 x Handlebar cable clips
- (F) 1 x Spark plug wrench body
- (G) 1 x Spark plug wrench handle
- (H) 1 x Fuel filling funnel
- (I) 1 x M8 x 35mm half-thread flange hex bolt
- (J) 4 x M8 x 30mm full-thread flange hex bolts
- (K) 4 x M8 serrated flange nuts
- (L) 5 x M8 washers
- (M) 4 x M8 spring washers
- (N) 1 x Drag bar attachment pin

## 6.3 Packaging

Keep the product packaging for the duration of the warranty period for reference should the product need to be returned for repair.

**WARNING!** Keep packaging materials out of reach of children. Dispose of packaging correctly and responsibly and in accordance with local regulations.

Please visit [drapertools.com](http://drapertools.com) for our full range of accessories and consumables.

# 7. Preparing the Tiller

**Important:** Before attempting to assemble or use this product, read and understand all the safety instructions listed in this manual.

## 7.1 Assembly

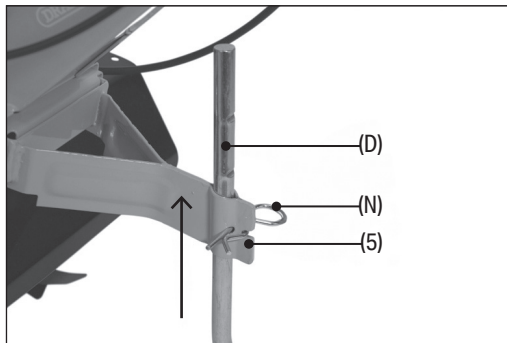


Fig. 1

1. Attach the drag bar (D) (Fig. 1):
  - a. Insert the long end of the drag bar up through the drag bar socket (5) so that the lowest of the three grooves is aligned with the pin socket.
  - b. Insert the drag bar attachment pin (N) through the opening in the side of the drag bar socket to secure it in place.

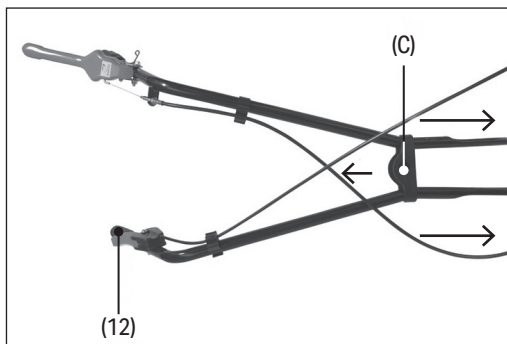


Fig. 2

2. Attach the handlebars (Fig. 2):
  - a. With the handle grips (12) angled downwards, slide the ends of the handlebars through the top of the handlebar bracket (C) so that they form a "Y" shape.

**Important:** The rounded ridges on the handlebar bracket should point towards the handle grips and the cables should cross **ONCE**.

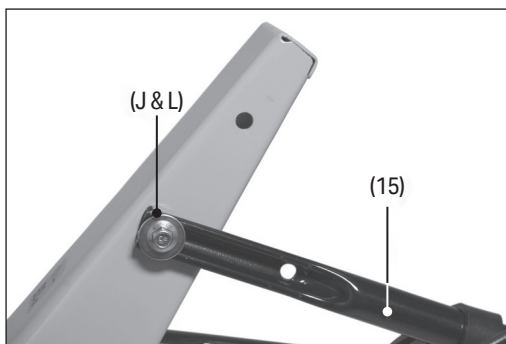


Fig. 3

- b. Pass an M8 x 30mm full-thread flange hex bolt (J) through an M8 washer (L) and the lowest hole in the left handlebar (15) (Fig. 3).
- c. Use the bolt to screw the left handlebar into the lowest opening on the left side (when viewed from the rear) of the handlebar support (14) so that the handle grip points downwards (Fig. 4).
- d. Secure the bolt loosely with an M8 spring washer (M) and serrated flange nut (K).
- e. Attach the right handlebar (21) in the same manner to the right side of the handlebar support.

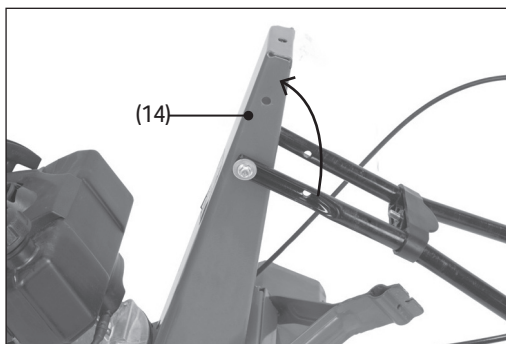


Fig. 4

- f. Swing the handlebars up and slide the bracket down onto the handlebar support.

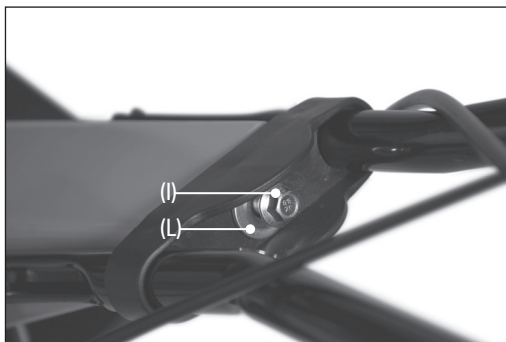


Fig. 5

- g. Pass the M8 x 35mm half-thread flange bolt (I) through an M8 washer (L) and down through the handlebar bracket into the support to secure it in place (Fig. 5).



Fig. 6

- h. Pass each of the remaining two M8 x 30mm flange bolts (J) through an M8 washer (L) and into the remaining holes in the handlebar assembly, securing each in place with a spring washer (M) and a flange nut (K) (Fig. 6).
- i. Tighten all bolt attachments.

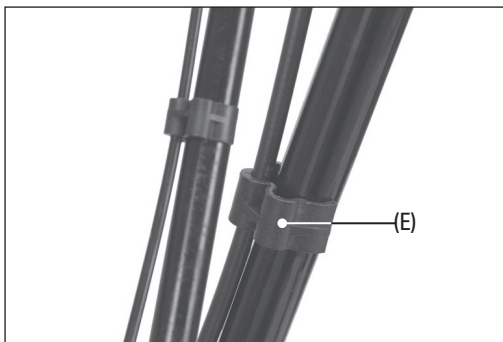


Fig. 7

3. Use the handlebar cable clips (E) to secure the cables against the handlebars (Fig. 7).

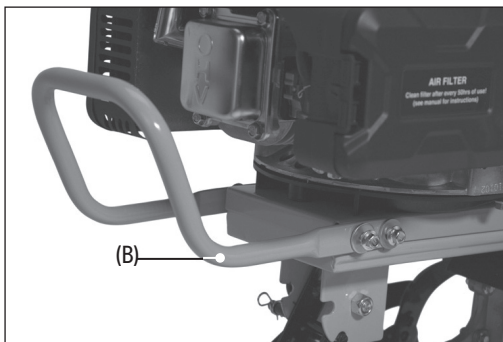


Fig. 8

4. Attach the front handle (B) (Fig. 8):
  - a. Remove the four bolts beneath the engine at the front of the machine.
  - b. Position the front handle around the tiller frame with the handle bending upwards.
  - c. Replace the four bolts and tighten them securely.

## 7.2 Checking and Topping Up the Engine Oil

**Important:** Engine oil is **NOT** supplied with this machine.

**CAUTION!** Check the engine oil level before every use. Running the machine with a low oil level may cause serious damage to the engine.

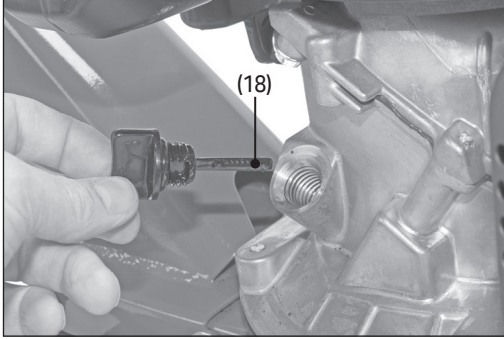


Fig. 9

1. Unscrew the oil dipstick (18) and remove it from the reservoir (Fig. 9).
2. Wipe the dipstick clean and screw it back into the reservoir.

**Important:** The dipstick **MUST** be fully screwed back into the reservoir to give an accurate reading.



Fig. 10

3. Remove the dipstick again and observe the level of oil from the bottom of the dipstick (Fig. 10).

4. If required, pour additional oil into the reservoir and check the level again.

**Important:** The oil level should reach the line at the top of the hatched area of the dipstick when it is screwed into the reservoir. **DO NOT** judge the oil level without screwing the dipstick in place as this will underestimate the actual level.

Draper Tools recommends **SAE 10W-30** oil for general use in all temperatures.

**CAUTION!** **DO NOT** use non-detergent or two-stroke engine oil as this may reduce the working life of the engine.

## 7.3 Checking the Air Filter



Fig. 11

1. Pull the latch on the right of the air filter (1) cover and remove it (Fig. 11).
2. Check the compartment and filter element for dust, dirt, or other obstructions.
3. If required, remove the foam filter element and carefully clean it (see **10.5 Air Filter Care**).
4. Reassemble the filter and reattach the cover.

## 7.4 Positioning the Front Wheel

The front wheel can be located in two positions:

- The lower position can be used to wheel the machine into position.
- The upper position should be used when operating the machine.

**Important: ALWAYS** ensure that the front wheel is in the upper position before starting the engine.

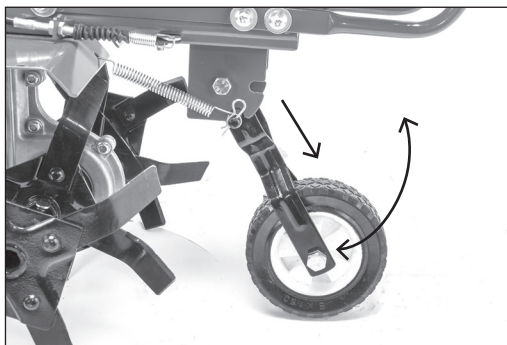


Fig. 12

To change the position of the front wheel, pull the front wheel fork out of the notch on the tiller frame and swing it into the new position. The fork will automatically snap back into the new notch when aligned (Fig. 12).

**CAUTION!** ALWAYS ensure that the wheel fork is fully located before wheeling or operating the machine.

## 7.5 Adjusting the Handlebar Height

**Important: ONLY** adjust the handlebars while on firm, level ground.

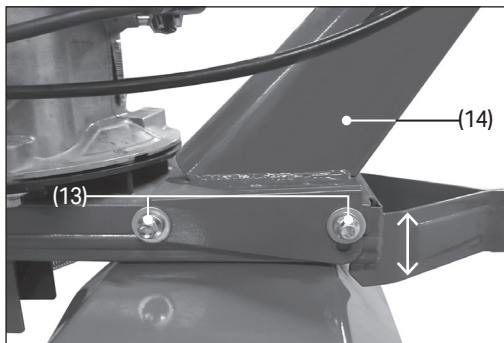


Fig. 13

To adjust the height of the handlebars, slightly loosen the handlebar height adjustment bolts (13), raise the handlebar support (14) to the appropriate height and retighten all bolts (Fig. 13).

## 7.6 Adjusting the Tilling Depth

To adjust the tilling depth, set the height of the drag bar (4). The higher the drag bar sits in the drag bar socket (5), the deeper the tines will cut into the soil. The drag bar can be set in three positions (Fig. 14).

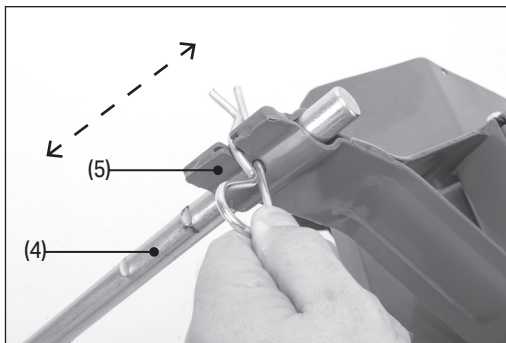


Fig. 14

To adjust the position of the drag bar:

1. Remove the drag bar attachment pin (N) from the drag bar socket.
2. Reposition the drag bar so that the required groove aligns with the pin socket.
3. Insert the drag bar attachment pin to secure the drag bar in place.

## 7.7 The Engine Control Lever

The engine control lever (6) acts as the throttle and controls the supply of fuel to the engine. The lever position is variable between two points (Fig. 15):

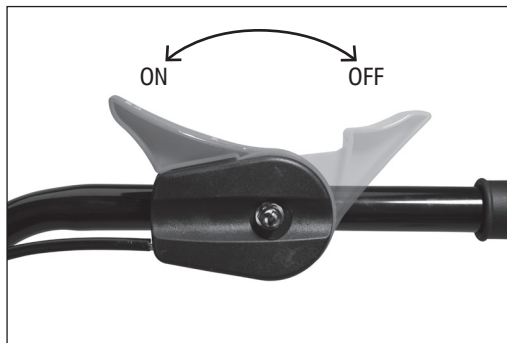


Fig. 15

- **STOP:** The lever is in a downward-facing position extended towards the operator.
  - When in this position, the engine is off.
- **START/RUN (Max):** The lever is in an upward-facing position, extended away from the operator.
  - When in this position, the machine is running at maximum power.

The machine power can be controlled by adjusting the position of the engine control lever between these two points.



**WARNING! When starting the engine, ALWAYS ensure that the engine control lever is in the STOP position to avoid uncontrolled movement when the engine starts.**

### 8.1 Adding Fuel to the Tiller

**Important:** Read all the Health and Safety guidance for use of petrol as a fuel before filling or using this product. **ALWAYS** use automotive petrol. Draper Tools recommends E10 (95 RON) automotive fuel, with an appropriate additive or stabiliser, for use with this product; E5 (97 RON) automotive fuel may also be used.

**CAUTION!** DO NOT use higher grade petrols as they contain additives that the engine has not been designed to accommodate. DO NOT mix the petrol with oil or other fuels.

**CAUTION!** E10 automotive fuel is hygroscopic and attracts moisture, which may damage the machine interior if stored in the product for more than two weeks. See 8.2 for guidance.

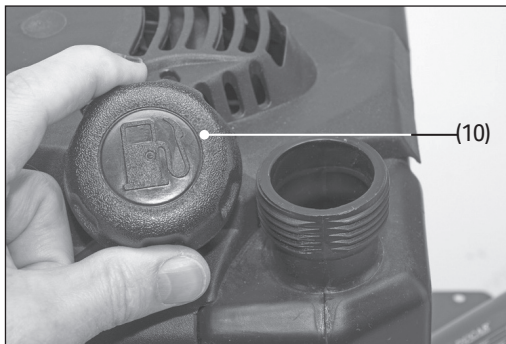


Fig. 16

To refuel the machine:

1. Remove the fuel tank cap (10) (Fig. 16).
2. Fill the tank using the fuel filling funnel (H) so that the level is just below the filler neck.

**CAUTION!** DO NOT overfill the fuel tank as this may damage the engine. NEVER allow dust, dirt, water, or dirty or mixed petrol to enter the fuel tank.

3. Reattach the fuel cap, ensuring it is properly fitted and securely tightened.

**WARNING!** Avoid prolonged contact of petrol with the skin and inhalation of petrol vapour.

### 8.2 Using E10 Fuels

Draper Tools recommends the use of E10 automotive fuels for their reduced environmental impact.

**Important:** E10 fuels are hygroscopic and attract moisture that may damage the machine interior if kept in the product for extended periods. This can be mitigated through good product care and regular maintenance.

Draper Tools recommends the use of an additive or stabiliser when using E10 fuels. Additives and stabilisers are widely available and can extend the period that E10 fuels may be safely stored in the product's fuel tank.

**Important:** The impact of each additive or stabiliser on the lifespan of the fuel varies with each product. **ALWAYS** read the label.

E10 fuels should be drained from the product at least every two weeks or within the period defined by any additive or stabilising product used.

Always store and dispose of fuels separately and responsibly.



**Important:** Before use, read and understand all the safety instructions listed in this manual. Ensure that all fixtures are securely fastened and that the machine is correctly prepared for use.

**WARNING!** ALWAYS ensure that the control lever is in the STOP position before attempting to start the engine.

**CAUTION!** This machine is NOT shipped with engine oil. DO NOT attempt to start the engine until engine oil has been added.

## 9.1 Raising the Front Wheel

**Important:** ALWAYS ensure that the front wheel (8) is in its upper position before starting the engine (see 7.4 Positioning the Front Wheel). This ensures that the wheel does not obstruct the movement of the machine during operation.

## 9.2 Starting the Engine

**Important:** DO NOT start the engine until the machine is in its starting location. NEVER transport the tiller with the engine running.

**CAUTION!** DO NOT attempt to start the engine until you have added engine oil to the machine.

**WARNING!** In order to prevent uncontrolled movement of the tiller during start up, ALWAYS ensure that the clutch lever is not pressed while starting the engine.

1. Ensure that the engine control lever (6) is in the STOP position.

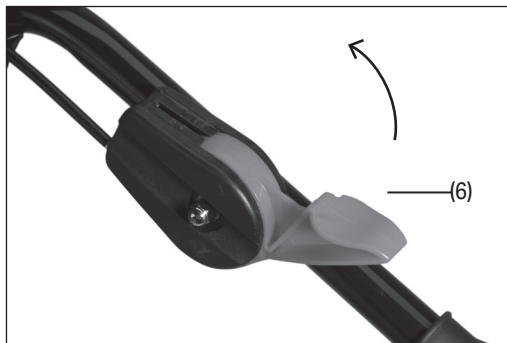


Fig. 17

2. Push the engine control lever (6) upwards slightly to open the throttle (Fig. 17).

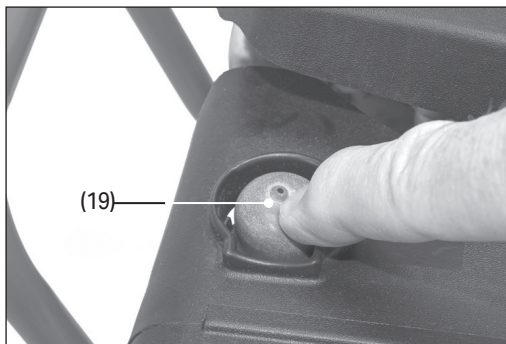


Fig. 18

3. Press the primer bulb (19) three times to prime the motor (Fig. 18).

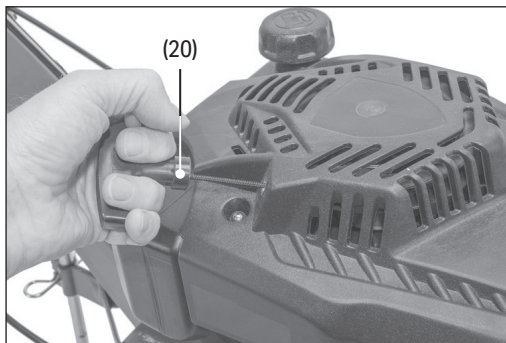


Fig. 19

4. Gently pull on the recoil starter (20) until resistance is felt, then pause and pull it out rapidly (Fig. 19).

**CAUTION!** DO NOT attempt to start the engine when the recoil starter is full retracted. DO NOT allow the recoil starter to snap back against the engine. Return it gently to prevent damage to the starter.

5. As the engine warms up, gradually lift the engine control lever and push it away from you to increase the speed.

When the clutch is engaged, the engine control lever can be used to control the tine rotation speed.



## 9.3 Operating the Clutch Lever

The clutch lever (3) engages the power from the engine to the transmission (Figs. 20 and 21).

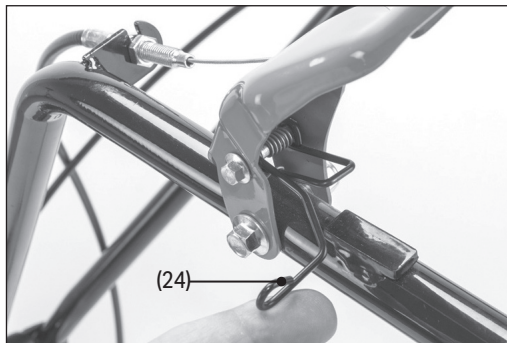


Fig. 20

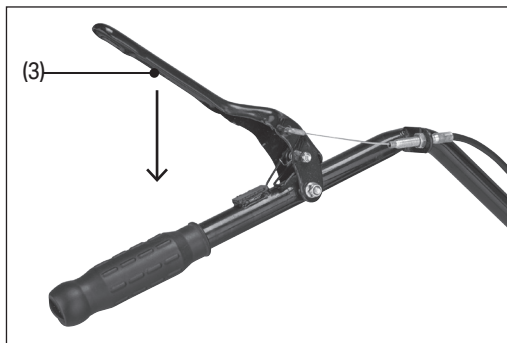


Fig. 21

- The clutch lever safety clip (24) must be released before the clutch lever can be depressed.
  - To release the safety clip, pull the safety clip lever (25) upwards.
  - The safety clip automatically re-engages when the clutch lever is released to lock it in the disengaged position.  
**Important:** ALWAYS ensure that the safety clip has correctly re-engaged when the clutch lever has been released.
- With the safety clip released, squeeze the clutch lever to engage the clutch and make the tines rotate.
  - Releasing the clutch lever causes the tines to stop.  
**Important:** Disengaging the clutch DOES NOT stop the engine, only the tine blades.

## 9.4 Stopping the Tiller

To stop the machine in an emergency, push the engine control lever (6) downwards and towards you into the **STOP** position (Fig. 22).

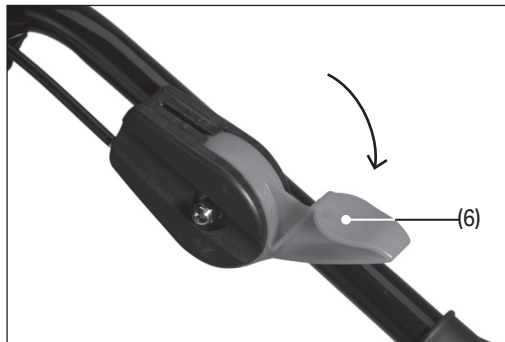


Fig. 22

To stop the machine normally, disengage the clutch before pushing the engine control lever into the **STOP** position.

## 9.5 Tips for Using the Tiller

- Ensure that the handlebars are in a comfortable position for use and adjust the height accordingly (see 7.5 Adjusting the Handlebar Height).
- Keep a firm grip on the tiller and maintain good balance at all times during operation and transportation.
- Handlebar manipulations may help if the movement of the machine is inconsistent:
  - If the tiller jerks forward during use, press downwards on the handlebars to increase the purchase with the soil.
  - If the tiller will not move forward during use, wiggle the handlebars from side to side to loosen the tines from the earth.
- Lower the handlebars slightly before making a turn; this lowers the centre of gravity and allows greater control.
- If the tiller must be carried between locations, carry it between two people using the handlebars and front handle (7).  
**Important:** DO NOT attempt to carry the tiller on your own.
- Stop and switch off the machine immediately if the tines become clogged with earth or stones, and clean the blades carefully while wearing heavy-duty gloves.

**Important:** Maintenance and repairs should be carried out **ONLY** by authorised and suitably qualified personnel. **ALWAYS** drain the engine of fuel **AND** oil before returning the machine to Draper Tools.

**!** **WARNING!** ALWAYS turn off the engine and allow it to cool before maintaining or storing this product. If the engine must be run for testing, ensure that this is carried out in a well-ventilated environment that allows carbon monoxide from the exhaust to dissipate quickly.

## 10.1 General Maintenance

- Keep all air vents clean and free from obstructions at all times.
- Clean the tines after use and before storing the machine.
- Clean the machine with a damp cloth **ONLY**. **Important: DO NOT** use solvents as this may damage the plastic parts of the machine.
- Use **ONLY** spare parts supplied by Draper Tools.

## 10.2 Replacing the Engine Oil

**Important:** The engine oil should be changed after every 60 hours. Drain the oil before the engine has completely cooled to allow faster and more thorough drainage (Fig. 23).

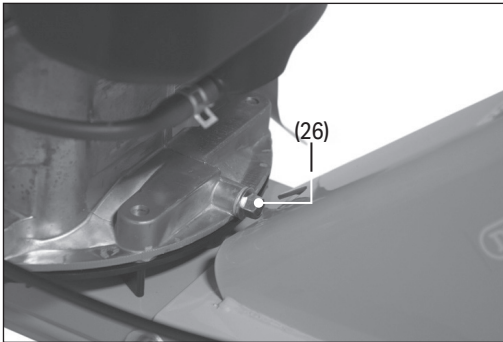


Fig. 23

To drain the engine oil:

1. Loosen the oil drainage bolt (26).
2. Tip the machine and allow the oil to drain into a suitable container.
3. Refill the oil and check the level (see **7.2 Checking and Topping Up the Engine Oil**).

4. Wash your hands thoroughly after working with used oil.

Draper Tools recommends **SAE 10W-30** oil for general use in all temperatures.

**Important: ALWAYS** drain the machine of oil before disposal or before returning the machine to Draper Tools. Dispose of oil according to local regulations.

## 10.3 Replacing the Gearbox Oil

The gearbox oil should be changed every 60 hours. Ensure that the gearbox is clean and free from excessive grease before filling.

1. Remove the tines from the axle:

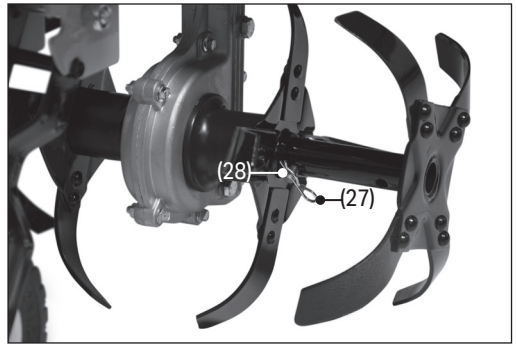


Fig. 24

- a. Remove the locking pin (27) and barrel (28) from each side of the tine assembly (Fig. 24).

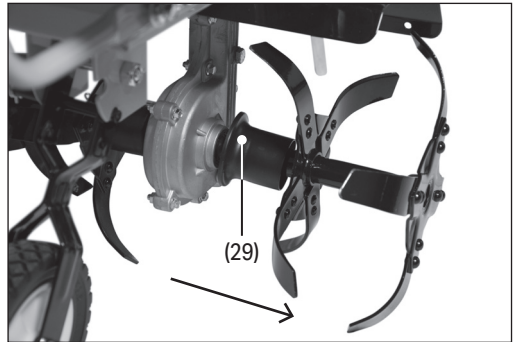


Fig. 25

- b. Slide the tines and axle cover (29) away from each side of the tine assembly (Fig. 25).

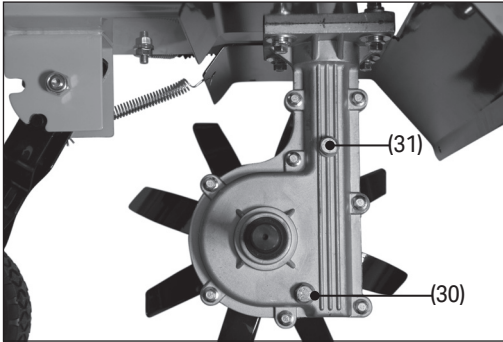


Fig. 26

2. Unscrew and remove the gearbox drain bolt (30) at the bottom of the gearbox column (Fig. 26).
3. Allow the oil to drain completely into a suitable container.
4. Tighten the gearbox drain bolt and remove the gearbox filler bolt (31) at the top of the column.
5. Carefully pour gearbox oil into the reservoir until it is full and replace the gearbox filler bolt.  
**Important:** Use gearbox oil **SAE 85W-90**. The reservoir should contain approximately 200ml of oil.

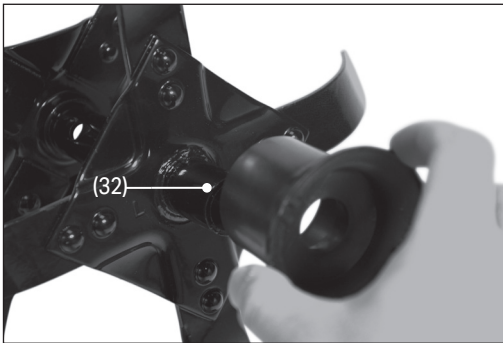


Fig. 27

6. Place the narrower end of the axle cover over the tine attachment socket (32) and slide the tines back onto the axle (Fig. 27).  
**Important:** Observe the **L** (left) and **R** (right) markings on the tines and ensure that they are installed on the correct side of the axle. Left and right correspond to the view of the machine from the rear.
7. Insert the locking barrels and pins to secure the tines in place.

**Important:** ALWAYS drain the machine of oil before disposal. Dispose of oil according to local regulations.

## 10.4 Draining the Fuel

**Important:** Read all the Health and Safety guidance for the use of petrol as a fuel before filling or using this product.



Fig. 28

1. With the engine control lever (6) in the STOP position, loosen the fuel tube clip (33) with pliers and remove the fuel pipe from the carburettor (Fig. 28).
2. Drain the fuel into a suitable container.
3. Reattach the fuel tube to the carburettor and apply the fuel tube clip to secure it tightly.

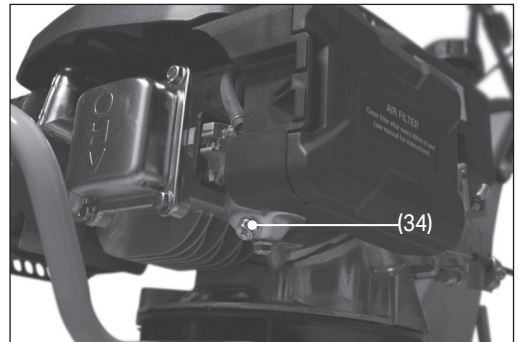


Fig. 29

4. Loosen the float bowl drain bolt (34) and drain the fuel into the container (Fig. 29).
5. Tighten the float bowl drain bolt and secure it tightly.

**Important:** Always drain the machine of fuel before disposal or before returning it to Draper Tools. Dispose of fuel according to local regulations.

## 10.5 Air Filter Care

Clean the air filter (1) regularly to ensure consistent air flow to the carburettor. Increase the frequency of cleaning when working in dusty environments.

**WARNING!** NEVER use petrol or low-flash-point solvents to clean the air filter elements as this may result in a fire when the machine is next used.

**CAUTION!** NEVER run the machine without the air filter element in place as this may cause the engine to degrade rapidly (Fig. 30).



Fig. 30

To clean the air filter:

1. Push the air filter latch to the left and lift upwards to open it.
2. Remove the foam element and check for holes, tears and obstructions.  
**Important:** If the foam element is damaged, dispose of it responsibly and replace it.  
**DO NOT** use the machine if any part of the air filter is damaged.
3. Clean the foam elements:
  - a. Wash the elements in warm soapy water and allow them to dry thoroughly.
  - b. Dip the elements in clean engine oil and squeeze out any excess.  
**Important:** The engine will smoke temporarily during start-up if too much oil is left in the foam.
4. Reassemble the air filter and replace the air filter cover, ensuring that the latch snaps back into place.

## 10.6 Spark Plug Care

Ensure that the spark plug is clean and correctly gapped. Draper Tools recommends spark plugs BPR5ES (NGK) and F7RTC (LG).

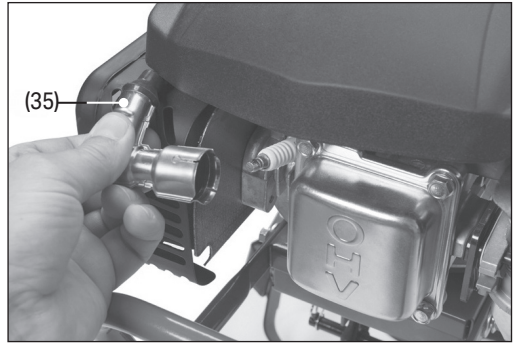


Fig. 31

1. Pull the spark plug cap (35) away from the engine to remove it (Fig. 31).

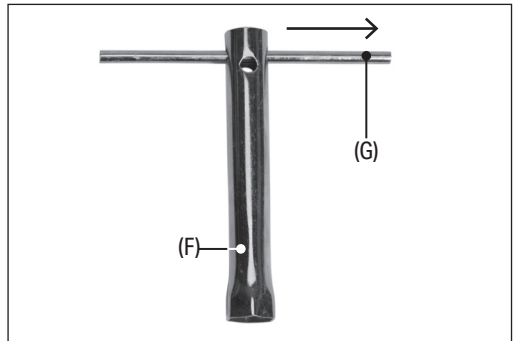


Fig. 32

2. Insert the spark plug wrench handle (G) through the spark plug wrench body (F) and use it to remove the spark plug from the engine (Fig. 32).

**WARNING!** The exhaust will be very hot after use.

3. Visually inspect the spark plug and replace it if the ceramic insulator is cracked or chipped.
4. Measure the spark plug gap using a feeler gauge (not supplied) and correct as appropriate by gently bending the electrode into position.

**Important:** The gap should be 0.7–0.8mm.

5. Attach the spark plug washer and thread the plug into place by hand.

**Important:** If mounting a new spark plug, use the spark plug wrench to screw the spark plug an additional half rotation after hand-tightening to the point that the washer is compressed. If mounting an old spark plug, screw no more than up to an additional quarter rotation as appropriate.

6. Replace the spark plug cap.

**Important:** ALWAYS ensure that the cable does not rest on the exhaust as this may cause it to melt.

**CAUTION!** The spark plug MUST be securely tightened. Loose spark plugs can become very hot and cause damage to the engine. NEVER use a spark plug with a heat range that is not appropriate for the machine in which it is used.

## 10.7 Float Bowl Care

If the machine repeatedly fails to start, check and clean the float bowl to improve the flow of fuel into

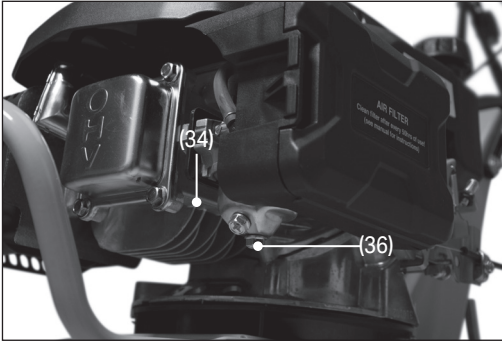


Fig. 33

the carburettor:

1. Loosen the float bowl drain nut (34) (Fig. 33).
2. Allow any fuel in the housing to drain into a suitable container, then tighten the drain nut.
3. Loosen and remove the float bowl lock nut (36) and washer.
4. Carefully remove the float bowl.

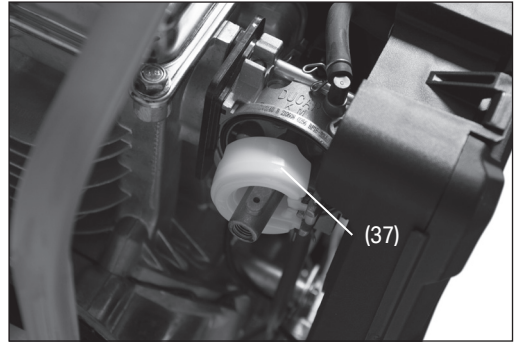


Fig. 34

5. Carefully clean up inside the float bowl and around the float (37).

6. Carefully replace the float bowl and the washer and lock nut.

**Important:** Take care not to pinch or damage the O-ring seal when replacing the float bowl and **DO NOT** allow the bowl to twist during tightening.

If the machine still fails to start, contact Draper Tools for repair and replacement options.

## 10.8 Transporting the Tiller

**Important:** When transporting the tiller, ensure that the engine control lever (6) is in the **STOP** position and keep the machine level in order to prevent fuel spillage (Fig. 35).



Fig. 35

Where possible, transport the tiller using an appropriate carrier. If the tiller must be carried by hand, carry it between two people using the handlebars and front handle (7).



## 10.9 Storing the Tiller

Prepare the tiller correctly for storage when it is not in use:

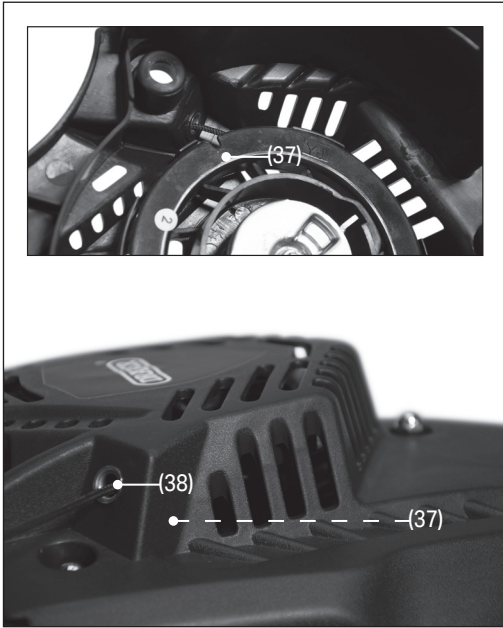


Fig. 36

1. Ensure that the clutch lever safety clip is engaged and the clutch lever cannot be depressed.
2. Drain the fuel from the engine before storage (see **10.4 Draining the Fuel**).
3. Close the engine intake and exhaust valves:
  - a. Gently pull the recoil starter (20) until resistance is felt (Fig. 35).
  - b. Continue pulling gently on the recoil starter until the notch (37) on the rotary disc aligns with the starter cord entry point (38) on the starter housing (Fig. 36 – underside view).

**Important:** When aligned, the starter cord should resist firmly. If the resistance eases, repeat the process until the notch is correctly aligned and resisting.

4. Drain the engine oil (see **10.2 Replacing the Engine Oil**).
5. Raise the drag bar (4) so that the lowest of the grooves is engaged.
6. Cover the machine with a plastic sheet to protect it against dust and moisture.

Observe the following points when storing the tiller:

- Store the tiller in a dry and dust-free environment, out of reach of children.
- Store the tiller in its normal operating position.
  - **DO NOT** store the tiller with the handlebars on the ground as this may cause oil to enter the cylinder or fuel to leak from the engine.
- Start the engine and rotate the tine blades at periodic intervals to prevent seizure within the engine and driveshaft.

**CAUTION!** If E10 fuel is used in the tiller, it **MUST** be drained from the machine if it is to be stored for two weeks or more. If an additive or stabiliser has been used with the fuel, check the label for the permissible storage period. E10 fuel is hygroscopic and may damage the machine interior if stored in the tiller for too long.

## 10.10 Troubleshooting

<b>Problem</b>	<b>Possible Cause</b>	<b>Remedy</b>
The engine will not start.	The fuel level is too low.	Check and top up the fuel tank (see <b>8.1</b> ).
	The engine control lever (6) is in the STOP position.	Push the engine control lever (6) upwards to open the throttle (see <b>9.2</b> ).
	The carburettor is blocked.	Clean or replace the air filter. Loosen the float bowl drain nut and allow fuel to flow out freely, then retighten the drain nut. Clean the float bowl and float (see <b>10.7</b> ).
	There is no spark from the spark plug.	Remove and clean or replace the spark plug (see <b>10.6</b> ).
The clutch lever is not working.	The engine speed is too low.	Push the engine control lever (6) upwards to increase the engine speed.
	The cable is too long.	Replace the faulty part. Contact Draper Tools for replacement options.
	The spring has failed.	
	The bearing inside the gearbox has failed.	
There is unusual noise from the gears.	A bearing inside the gearbox is loose.	Replace the faulty part. Contact Draper Tools for replacement options.
	The driveshaft has deformed.	
	The gears are worn or damaged.	
The machine is leaking oil.	An O-ring seal is damaged or failing.	Replace the faulty part. Contact Draper Tools for replacement options.
	There are loose bolts in the engine.	Tighten all bolts and fixings.

# 11. Spares, Returns and Disposal

For spare parts, servicing, and repair and replacement options, please contact the Draper Tools Product Helpline for details of your nearest authorised agent.

Draper Tools will endeavour to hold any spare parts, if applicable, for seven years from the date that it sells the final matching stock item.

Any servicing or repairs carried out by unauthorised personnel or installation of spare parts not supplied by Draper Tools will invalidate your warranty.

**Important:** For safety, **ALWAYS** drain and clean the product of any oil, fuel, chemicals or other substances before returning it to Draper Tools or its authorised agent. Store these materials in suitable containers and dispose of them in accordance with local regulations. Draper Tools and its agents cannot be responsible for the disposal of these substances.

At the end of its working life, dispose of the product responsibly and in line with local regulations. Recycle where possible.

- **DO NOT** dispose of this product with domestic waste; most local authorities provide appropriate recycling facilities.
- **DO NOT** burn or incinerate this product.
- Dispose of oil and fuel separately and in accordance with local regulations; **DO NOT** abandon them in the environment.





# 12. Explanation of Symbols



Read the instruction manual



**Warning!**



Do not incinerate or throw onto fire



Keep away from fire and open ignition sources; do not smoke nearby



Do not abandon in the environment



Wear suitable eye and face protection



Wear ear defenders



Wear protective footwear



Wear protective gloves



Keep out of the reach of children



Machine weight



Sharp rotating blades; keep feet away



Hot surfaces



Do not touch



Oil dipstick and reservoir



Press primer bulb three times



Keep bystanders away



Beware of projectiles and debris



Rated sound power level



Depress clutch lever to power



Tilling width



Max. tilling depth



WEEE -

Waste Electrical & Electronic Equipment  
Do not dispose of this product with domestic waste



UKCA - UK Conformity Assessed



CE - European Conformity





## Contact Details

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