



# C2000 Tiller

## Operating Instructions

Before commissioning the machine, read operating instructions and observe warning and safety instructions.

# CE



 **TRACMASTER**  
*The landscape machinery specialists*

## Manufacturer Details

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## Machine Details

**Model:** CAMON C2000 Tiller

**Serial Number:** .....

**Engine Serial No:** .....

**Date of Purchase:** .....

**Supplier:** .....

# Table of Contents

1.0	What the Machine is Designed For .....	2
1.1	Applications .....	2
2.0	Specifications .....	3
3.0	Unpacking and Assembly .....	4
3.1	Major Components Diagram .....	4
3.2	Unpacking Instructions .....	4
4.0	Safety Instructions .....	5
4.1	Basic Safety Instructions .....	5
4.2	Main Components and Operating Elements .....	5
4.3	Engine and Drive .....	5
4.4	Operating Lever .....	5
4.5	Drag Bar .....	5
4.6	Transport Wheel .....	6
4.7	Throttle Lever .....	6
4.8	Commissioning .....	6
4.9	General Safety Instructions .....	6
4.10	Engine Specific Safety Instructions .....	7
5.0	Safety Instructions Starting and Operating .....	8
5.1	To Start the Engine .....	8
5.2	To Stop the Engine .....	9
5.3	Safety Equipment .....	9
5.4	Operation .....	9
5.5	Procedure for Unexpected Shut Down .....	9
5.6	Residual Risks of the C2000 Tiller .....	9
6.0	Maintenance .....	10
6.1	Schedule .....	10
6.2	Basic Maintenance .....	10
6.3	Engine .....	10
6.3.1	Check Engine Oil Level .....	10
6.3.2	Change Engine Oil .....	10
6.3.3	Air Filter .....	11
6.3.4	Spark Plug .....	11
6.4	Cleaning .....	11
6.5	Troubleshooting .....	12
6.5.1	Machine .....	12
6.5.2	Engine .....	12
6.5.3	Lubricants .....	12
7.0	Transportation, Storage and Handling .....	13
7.1	Transportation .....	13
7.2	Storage .....	13
7.3	Handling .....	13
8.0	Service Record .....	14
	Warranty Registration .....	15
	EC Declaration of Conformity .....	16

## 1.0 What the Machine is Designed For

### 1.1 Applications

The CAMON C2000 Tiller has been designed by Tracmaster for cultivating soil for planting of vegetables, plants and flowers.

The benefit of using a C2000 Tiller is the ease and efficiency with which the machine is able to dig the ground, saving the operator substantial time and effort.



### **IMPORTANT – READ CAREFULLY**

**The tines of the CAMON C2000 Tiller are designed to be used only on soil where there is no grass present.**

**DO NOT use the CAMON C2000 Tiller for any alternative use other than cultivating soil.**

**Operating the machine on non-grass surfaces such as concrete or tarmac will cause damage to the C2000 Tiller.**

## 2.0 Specifications

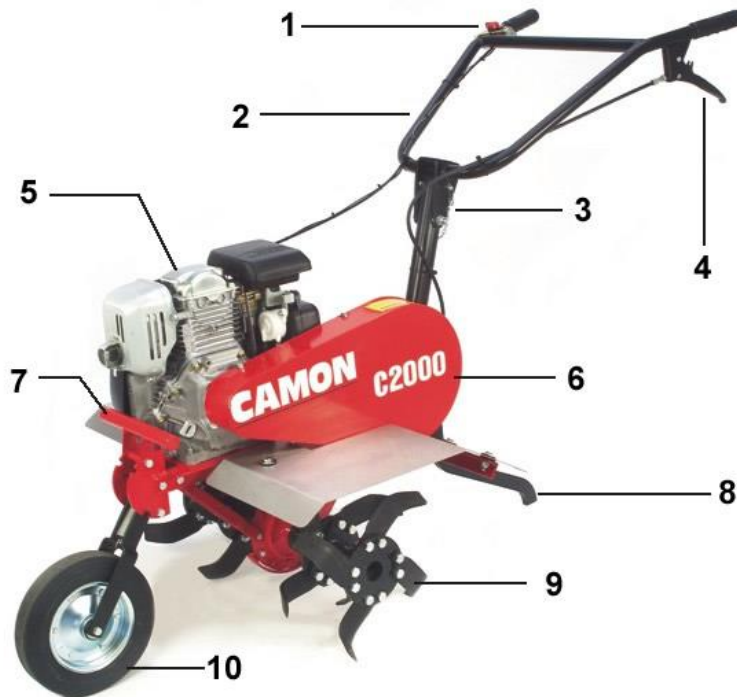
ENGINE	
Engine Manufacturer	Honda
Engine Model	GX160
Engine Type	4-stroke OHV, single cylinder
Net Engine Power	3.6kW (4.8hp) @ 3600rpm
Engine Shaft Size	¾" straight
Spark Plug	BPR6ES (NGK) / W20EPR-U (DENSO)
Spark Plug Gap	0.70 - 0.80mm
Engine Ignition Type	Recoil
Cold Start System	Choke
Fuel Tank Capacity	3.1 litres
Fuel Type	Unleaded
Fuel Consumption	1.4 litres per hour @ 3600rpm
Air Filter	Paper
Rated Engine Speed	3600rpm
Engine Oil	10w/30 API SJ or later
Engine Oil Capacity	0.6 litres
Dry Weight	15.1kg

The power rating of the engine indicated in this table is the net power output tested on a production engine for the engine model and measured in accordance with SAE J1349 at a specified rpm.

MACHINE	
Model	C2000
Working Width	64cm
No of Blades	16 [8 left / 8 right]
Wheel Types	Solid rubber
Handlebar Feature	Foldable
Noise Level	86db(A)
Vibration Acceleration Value	6.9ms <sup>2</sup>
Max Gradient for Operation on Slope	20 degrees
Weight	69kg
Dimensions (l x w x h)	80 x 64 x 60cm

## 3.0 Unpacking and Assembly

### 3.1 Major Components Diagram



- |    |                        |
|----|------------------------|
| 1  | Engine On/Off Switch   |
| 2  | Top Handlebar          |
| 3  | Handlebar Pin & R-Clip |
| 4  | Operating Lever        |
| 5  | Engine                 |
| 6  | Belt Guard             |
| 7  | Lifting Handle         |
| 8  | Drag Bar               |
| 9  | Digging Tines          |
| 10 | Transport Wheel        |

### 3.2 Unpacking Instructions

Open the top of cardboard box.

Cut the box open by using a sharp knife to cut down through the four corners of the box.

Swivel the folded top handle bar until the holes at the bottom of the top handlebar are over the locating hole on the bottom handlebar.

Insert the pin located on a chain to fix handlebars into position. Secure the pin with R-Clip.

Push the machine forward safely and gently out of the box.

Dispose of the cardboard box and other padding material.

## 4.0 Safety Instructions

### 4.1 Basic Safety Instructions

Before starting the machine, read and understand these operating instructions.

### 4.2 Main Components and Operating Elements

Below is a description of the main components of the C2000 Tiller and how they operate.

### 4.3 Engine and Drive



The Honda GX160 is fitted with a red ON/OFF switch that is the main operating control for the engine. Rotating the switch to the “1” position allows the engine to be started and run. Rotating the switch to the “0” position will stop the engine.

The Honda GX160 is a four stroke engine that runs on standard unleaded fuel.

The engine is air cooled and therefore it is important that the grille covering the recoil rope is kept clear from debris.

The engine air filter cleans the air drawn in by the engine. A clogged air filter will reduce performance.

The engine is fitted with a choke lever. Read the engine operating instructions to understand the operation of these levers.

### 4.4 Operating Lever

The drive to digging tines is controlled by the operating lever located under the grip on the left handlebar.

Pulling upwards on this lever engages the drive to the tines which will start rotating and digging into the ground.

### 4.5 Drag Bar

Located at the rear of the machine, the drag bar is used to control the depth and speed at which the C2000 will dig into the ground.

The depth is controlled by varying the position at which the drag bar is held into its location at the rear of the C2000. The drag bar has a choice of holes through which its locating pin can be positioned. The lower the hole used on the drag bar to hold it in its position, the deeper the machine will dig.

Forward speed is controlled by the drag bar as during operation of the tiller downward pressure is applied on the handlebars by the operator that forces the drag bar into the ground. This acts as an anchor holding the tiller in place whilst it digs down to its required depth. Releasing downward pressure on the drag bar allows the tiller to walk itself forward into its new cultivating position.

#### **4.6 Transport Wheel**

The transport wheel is used solely for moving the C2000 Tiller to its designated digging location.

NB: The transport wheel is not required at any point during actual ground cultivation.

The transport wheel is held in its downwards travel position using a spring mechanism. By pulling on the wheel it is possible to overcome the tension of the spring and rotate the wheel 180 degrees upwards and around to a location where it is held out of the way of the digging tines.

#### **4.7 Throttle Lever**

The throttle lever controls the engine speed that in turn controls the speed of the digging tines.

A faster throttle speed will result in an increased rotational speed of the digging tines.

#### **4.8 Commissioning**

Prior to operation it is necessary to check the engine oil level and add engine oil level to the levels indicated in the table in section 5.1.

The engine fuel tank will not contain fuel so will need filling to the recommended level before use.

#### **4.9 General Safety Instructions**

Be aware of all the safety requirements for the machine.

Visually check the machine for operational safety, complete components and fixed guarding prior to each use.

Read and be aware of the warning and instruction signs located on the machinery.

Cordon off the work area to access from the general public.

Before starting work clear the area of any objects that may cause damage to the machine.

Do not operate the machine if you are under the influence of alcohol or drugs. This equipment must only be operated by persons who are medically fit both physically and mentally.

Only work in good light and visibility.

Wear the correct personal protection equipment as instructed by this manual.



Operator clothing should not be loose and footwear should offer good grip.

Know how to stop the machine in an emergency.

#### ***4.10 Engine Specific Safety Instructions***

Always ensure the engine is turned off and the fuel tap is turned off when transporting the machinery, cleaning the machinery and making adjustments.

Always start the engine in open air. Starting an engine within a confined space can lead to the inhalation of toxic substances.

Do not smoke or use a naked flame when refueling.

Use only unleaded petrol from fuel containers designed for this purpose. Refuel outdoors only and replace the fuel tank cap securely.

Do not mix oil with the fuel.

Leave one inch of space in the fuel tank during refilling.

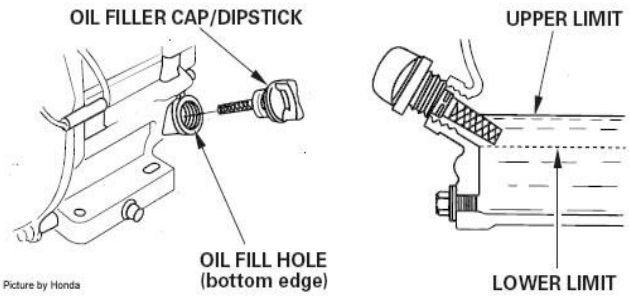
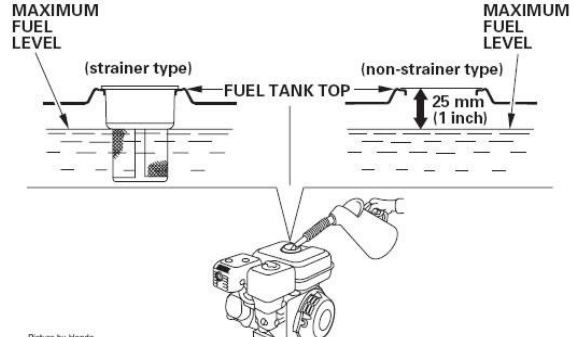
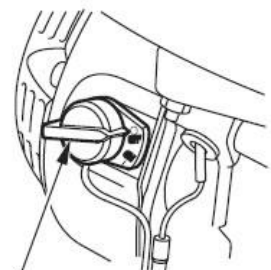

Clear up any petrol spillages immediately.

Avoid contact with the engine during operation as it will become hot. Leave the engine to cool prior to contact.

Never interfere with the control settings of the engine.

## 5.0 Safety Instructions Starting and Operating

### 5.1 To Start the Engine

<p>Using the dipstick provided, check the engine oil level. Top up with 10w/30 oil if the dipstick is clear of oil.</p>	 <p>OIL FILLER CAP/DIPSTICK</p> <p>OIL FILL HOLE (bottom edge)</p> <p>UPPER LIMIT</p> <p>LOWER LIMIT</p> <p>Picture by Honda</p>
<p>Check the fuel level. Refill as necessary and as determined by the fuel tank type – see diagram.</p>	 <p>MAXIMUM FUEL LEVEL (strainer type)</p> <p>FUEL TANK TOP</p> <p>MAXIMUM FUEL LEVEL (non-strainer type)</p> <p>25 mm (1 inch)</p> <p>Picture by Honda</p>
<p>Switch the engine ignition switch to the ON position.</p>	 <p>ENGINE SWITCH</p> <p>Honda Picture</p>
<p>Turn the fuel tap located on the engine carburetor to the ON position. If the engine is cold or has not been operated recently set the choke lever on the carburetor to the ON position.</p>	 <p>FUEL VALVE LEVER</p> <p>CHOKE LEVER</p> <p>THROTTLE LEVER</p> <p>Picture by Honda</p>

Pull the engine recoil handle slowly until it engages then pull briskly to start the engine.

After the start, return the recoil handle gently. Do not let it snap back.

Once the engine has started, if the choke lever has been used, return this its OFF position after the engine has run for a few seconds.

## **5.2 To Stop the Engine**

Release the operating lever.

Switch the engine ON/OFF switch to the "0" OFF position.

Turn the fuel tap lever to the OFF position.

WARNING: THE EXHAUST COVER MAY BE HOT – DO NOT TOUCH.

## **5.3 Safety Equipment**

The C2000 operator must be wearing:

- Ear Defenders
- Gloves
- Protective Footwear
- Safety Glasses

## **5.4 Operation**

Before cultivation can be carried out, the ground must be cleared of long grass and any objects such as stones or bricks that would damage the Tiller.

WARNING: USING THE TILLER ON LONG GRASS WILL QUICKLY CAUSE DAMAGE TO COMPONENTS OF THE MACHINE.

When safety checks have been completed, start the engine following the correct procedure.

Position the Tiller in the direction you wish to cultivate

Ensure the transport wheel has been located in its upright digging position.

## **5.5 Procedure for Unexpected Shut Down**

Release the operating lever.

Turn the engine operating switch located on the engine to the OFF position.

Ensure the tines have stopped rotating prior to moving the machine.

## **5.6 Residual Risks of the C2000 Tiller**

The C2000 Tiller is designed to be pushed by the operator during transportation. It has no brake system and therefore the operator must hold firmly onto the machine at all times when the machine is on sloped areas.

## 6.0 Maintenance

### 6.1 Schedule

	Operation	Daily	Every Week	Every Month
Engine	Check engine oil level 10W/30 See separate engine manual	X	X	
Machine	Check condition of tines		X	
	Check belt condition			X
	Check operating lever and cable		X	
	Check protection cover condition			X
	Check bearings			X
	Lubricate wheel bearings			X
	Tighten all nuts and bolts			X

### 6.2 Basic Maintenance

Check that all guards are fitted securely.

Ensure the cable connecting the drive lever to the engine is securely fastened at both ends and shows no sign of wear.

Ensure the wheel is held securely.

### 6.3 Engine

#### 6.3.1 Check Engine Oil Level

This is to be checked prior to each use and every 8 hours during operation.

Check only when the engine is off and in a horizontal position.

Clean the oil filler plug and its surrounding parts.

Remove the oil filler plug. Clean the dipstick with a clean cloth and put the oil filler plug all the way back into the engine. Remove the oil filler plug and check the oil level.

Re fill the oil if indicator shows more is required. For the Honda GX160 the recommended oil is SAE 10w/30.

#### 6.3.2 Change Engine Oil

Refer to the engine manufacturer's manual for location of components and more detailed assistance.

Do not change the oil if the engine is hot.

The first oil change is after 50 hours of work.  
Subsequent oil changes should be made after each 100 hours of work.

At extreme temperatures or conditions change the oil after every 50 hours. Drain the oil when the engine is warm, as it will drain quickly and completely when warm.

Open the drain plug on the engine and the filling plug and drain the oil into a suitable container or use a suction pump to remove oil through filler neck.

Ensure the waste oil is disposed of properly.

Re-fit the drain plug and tighten.

Fill fresh engine oil through the oil filling opening. Use a funnel or similar device for ease of filling.

Replace the oil filler plug and tighten.

### 6.3.3 Air Filter

#### **Inspection Check:**

Remove the air cleaner cover and inspect the filter elements.

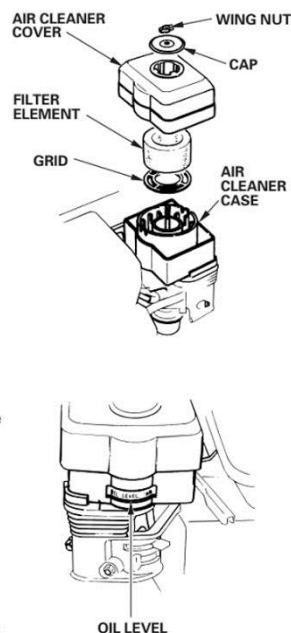
#### **Cleaning:**

See diagram below containing information provided by Honda.

#### **Cleaning**

##### **Oil-Bath Type**

1. Remove the wing nut, and remove the air cleaner cap and cover.
2. Remove the air filter element from the cover. Wash the cover and filter element in warm soapy water, rinse, and allow to dry thoroughly. Or clean in non-flammable solvent and allow to dry.
3. Dip the filter element in clean engine oil, then squeeze out all excess oil. The engine will smoke if too much oil is left in the foam.
4. Empty the used oil from the air cleaner case, wash out any accumulated dirt with non-flammable solvent, and dry the case.
5. Fill the air cleaner case to the OIL LEVEL mark with the same oil that is recommended for the engine (see engine manual).  
Oil capacity: 60 cm  
(2.0 US oz, 2.1 Imp oz)
6. Reassemble the air cleaner, and tighten the wing nut securely.



### 6.3.4 Spark Plug

Clean and replace.

## 6.4 Cleaning

After cleaning, particularly if a pressure washer has been used, ensure any lubrication points are re-lubricated.

Clean the engine with a cloth only. Avoid spraying the engine with jets of water as this may leak into the fuel and ignition systems.

## 6.5 Troubleshooting

### 6.5.1 Machine

Have all serious malfunctions on the machine and engine repaired by an authorised Tracmaster or Honda agent.

Problem	Possible Cause	Remedy
No drive to blades	Broken belt	Replace belt
	Broken spring tensioner	Replace spring
Poor depth	Drag bar set incorrectly	Adjust drag bar

### 6.5.2 Engine

Problem	Possible Cause	Remedy
Engine does not start	Spark plug connector not connected	Connect spark plug connector
	Choke lever is not actuated	Actuate choke lever
	Fuel tank empty	Fill fuel tank
	Fuel line clogged	Clean fuel line
	Defective spark plug	Clean or replace spark plug
	Engine has too much fuel	Dry and adjust spark plug and start engine on full throttle
Engine overheats	Low engine oil	Refill immediately
	Impaired cooling	Clean cooling fan grille
	Air filter clogged	Clean air filter

### 6.5.3 Lubricants

Use the specified 10w/30 oil specified by Honda for the engine oil.

To lubricate the roller bearings in the wheels we recommend using bio-lubricating grease.

## **7.0 Transportation, Storage and Handling**

### **7.1 Transportation**

Use ramps where possible to manoeuvre the Tiller into a transportation vehicle.

The C2000 Tiller must be fixed securely using straps and by placing chocks behind the wheels.

Always transport the C2000 Tiller horizontally and not tilted at an angle.

Ensure that the fuel control lever on the engine is moved into the OFF position so fuel does not leak into the carburetor during transportation.

### **7.2 Storage**

Always clean the machine and thoroughly dry prior to storage and ensure all lubrication points have been re-greased.

For periods of long storage, change the engine oil.

Either drain the fuel completely or fill the fuel tank and add fuel stabilizer.

Do not store the Tiller in wet rooms, where fertiliser is stored, or in stables as heavy corrosion may occur.

Always store the machine in a horizontal position.

### **7.3 Handling**

Do not attempt to lift the machine alone. At least two people is the minimum required.

Gloves must be worn when lifting the C2000 Tiller.

Do not tilt the machine so that fuel can leak into the air filter of the engine.

When performing maintenance on the Tiller when it is situated on a work bench, ensure that the machine is firmly held in position at all times.

Do not lift the machine solely by the engine at any point.

## 8.0 Service Record

To ensure your machine is kept in peak condition we recommend that your Scarifier is serviced regularly.

Contact Tracmaster on 01444 247689 to find out who your local Authorised Agent is.

Company: _____ Date: _____	Company: _____ Date: _____
Company: _____ Date: _____	Company: _____ Date: _____
Company: _____ Date: _____	Company: _____ Date: _____



# Warranty Registration

To validate your warranty please complete the form below and return it to:

**Tracmaster Ltd, Sovereign Centre, Victoria Road, Burgess Hill, RH15 9LR**

Alternatively visit [www.tracmaster.co.uk](http://www.tracmaster.co.uk) and complete the online form.

## CUSTOMER DETAILS

Name: .....

Company (if applicable):.....

Address: .....

.....

..... Postcode: .....

Email: .....

Phone: .....

## MACHINE DETAILS

Machine: CAMON Tiller

Model: C2000

Serial Number: .....

Engine Serial Number: .....

Purchase Date: .....

## SUPPLIER DETAILS (if not supplied directly by Tracmaster)

Dealer Name: .....

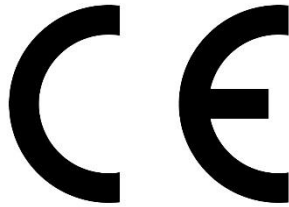
Dealer Address: .....

.....

..... Postcode: .....

We will never pass your details to any third party, however, we may occasionally send you emails with offers and promotions, if you do not want us to do this, please tick this box.

## EC Declaration of Conformity



Tracmaster Ltd declares that the machinery stipulated below complies with all the relevant provisions of:

**Machinery Directive 2006/42/EC**

**EMC Directive 2004/108/EC**

and the National Laws and Regulations adopting these directives and other relevant directive.

Manufacturer: Tracmaster Ltd  
Sovereign Centre  
Victoria Road  
Burgess Hill  
RH15 9LR  
UNITED KINGDOM

Machine Description: Tiller

Type: CAMON C2000

Serial No: .....

Harmonised Standards applied: (including parts of):

**EN 12100-1:2003** Safety of Machinery: Basic Principles. Terminology. Methodology.

**EN 12100-2:2003** Safety of Machinery: Basic Principles. Technical Principles.

**EN 709:1997** Agricultural & Forestry Machinery – Pedestrian Controlled Tractors with mounted rotary cultivators, motor hoes, motor hoes with drive wheels.

**EN 13857:2008** Safety distances to prevent hazard zones being reached by upper and lower limbs.

Responsible Person: Jody Symons

Position in Company: Technical Director

Address: Tracmaster Ltd, Sovereign Centre, Victoria Road, Burgess Hill, RH15 9LR

Date: September 2012

Signature:  .....





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