



# **BCS 630WS Commander**

**Manufactured by BCS S.p.A.**

**Model 630WS**



## **Operating Instructions**

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

**PLEASE ALSO READ ORIGINAL  
BCS INSTRUCTION MANUAL**



**TRACMASTER**

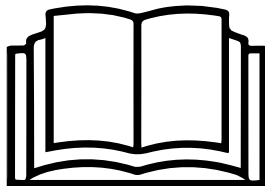
*The landscape machinery specialists*

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**IMPORTANT**



**READ CAREFULLY**

**No liability will be accepted for any damage caused to persons or property through failure to observe the operating and safety instructions.**

## Controls Description

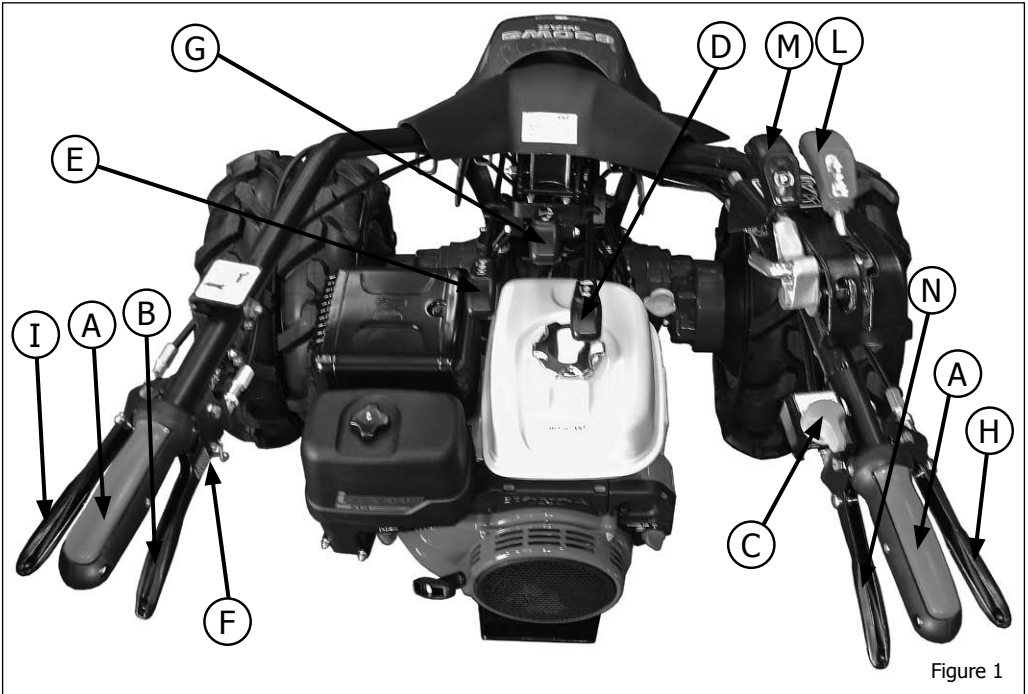


Figure 1

### CONTROL DESCRIPTION

- A. Operator presence control (OPC) lever (red). When released this cuts power to the engine. Note: on the diesel machine there is only one OPC lever located on the left handlebar.
- B. Clutch control lever.
- C. Throttle control lever.
- D. Speed control lever. The location of the different speeds is shown on the selector which is positioned on the control lever.
- E. PTO lever.
- F. Clutch lever locking clip.
- G. Handlebar height adjustment lever.
- H. Right steering clutch lever.
- I. Left steering clutch lever.
- M. Parking brake lever (black).
- L. Forward/reverse control lever (red).

## About the BCS Commander

### **General**

The BCS 630WS Commander has been developed to work in areas which are particularly difficult to cut such as steep slopes (Bank Commander only) or areas where there are obstacles such as trees etc.

The BCS 630WS is equipped with a central motor clutch and two side clutches (one mounted on each wheel axle), as well as steering brakes which are controlled by two independent levers located on each handlebar.

This particular set up enables the operator to manoeuvre and easily control the machine even on steep slopes or in confined areas.

The handlebars can be adjusted in height and are equipped with anti-vibration devices.

There are many implements available for the BCS 630WS Commander and Bank Commander, including a scythe cutter bar, rotary mowers, flail mowers, mulching mowers, hay rakes, scarifier, and mini baler.

### **Safety Features**

The BCS 630WS Commander is fitted with OPC levers (figure 1, A) allowing the operator to have complete control over the machine. Under difficult circumstances releasing the OPC lever will stop the machine immediately.

To restart the machine follow the instructions on page 8.

# Assembly Instructions

After removing the machine from its box, follow the assembly instructions below.

## **Wheels**

To be fitted with the tread pointing away from the engine (figure 2).



Figure 2

## **Engine**

**Read the separate engine manual carefully.**

If the engine is fitted with an oil bath air filter fill to the indicated level with the correct quantity and quality of oil.

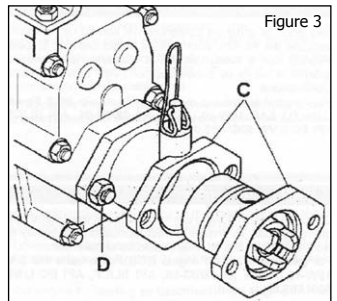


Figure 3

## **Implements**

Implements are mounted to the power unit either via the quick coupling assembly (figure 3, C) or directly onto the flange (figure 4, A).

**IMPORTANT:** Always ensure that the nuts (figure 3, D) which fasten the implement or quick coupling to the power unit are well tightened.

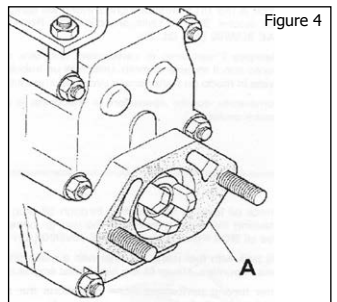


Figure 4

## **Quick Coupling Assembly**

The BCS Commander is supplied with the Quick Coupling Assembly as standard (figure 5). This allows implements to be changed quickly and without the need for tools.

It is composed of two parts - the Power Unit Coupler (figure 5, A) which is attached to the power unit and the Implement (or Additional) Coupler (figure 5, B) which is attached to the implements. For each subsequent implement an extra Implement Coupler is required.

Making sure that the fastening pin (figure 5, G) is lifted up, simply insert the Implement Coupler into the Power Unit Coupler and then drop the fastening pin.

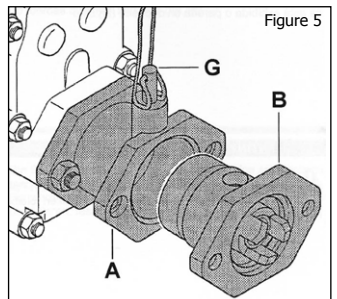


Figure 5

## Safety Precautions

**READ** and observe all warning labels on the machine and implements (figure 6).

**VISUALLY INSPECT** the machine before use - ensure all nuts and bolts are tight and not worn or damaged.

**ALWAYS** familiarise yourself with the machine's operation before commencing work and make sure you know how to stop the machine quickly and safely in an emergency.

**ALWAYS** start the engine in the open air.

**DO NOT** smoke when refuelling.

**DO NOT** mix OIL with the fuel.

**ALWAYS** stop the engine before making any adjustments, refuelling, moving or cleaning, or when the unit is unattended.

**USE ONLY** fuel from containers designed for this purpose - refuel outdoors only and replace the tank cap securely.

**IN CASE** of petrol spillage move the machine away from the area of spillage and allow the petrol vapours to dissipate before starting the engine.

**DO NOT** remove any safety guards that are fitted.

**DO NOT** touch any moving parts or attempt any maintenance whilst the machine is running - **KEEP HANDS AND FEET AWAY.**

**BEFORE** starting work clear the work area of any objects that could damage the machine.

**NEVER** interfere with any control settings on the engine.

**NEVER** select reverse gear with your back to a wall or other immovable object.

**ALWAYS** wear appropriate work clothes whilst operating the machine, always wear safety footwear.

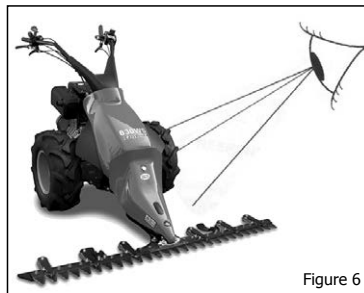


Figure 6

## Safety Precautions

**DO NOT USE** the machine near children or animals (figure 7).

**KEEP IN MIND** that the machine operator is responsible for any damage to persons or property.

**ALWAYS** walk with the machine - **DO NOT RUN**.

**NEVER** work on slopes of more than 20° (unless you are using the Bank Commander which is the only machine specifically designed for steeper slopes) and always work across the face of a slope (side to side), **NEVER** up and down. **NEVER** use the machine on a bank where there is a possibility of the machine sliding down the slope.

**ALWAYS** disengage the power take-off (PTO) when changing direction or location of operation.

**ONLY** qualified persons should operate the machine.

If any abnormal vibrations occur **STOP** the engine immediately and visually inspect the machine and implement for any signs of damage.

**IF A FAULT** develops DO NOT attempt any repair - immediately contact the supplier from whom the machine was obtained.

**ALWAYS** read the original manufacturer's manual first.

**IMPORTANT:** Read all machine and implement manuals thoroughly before using the machine.

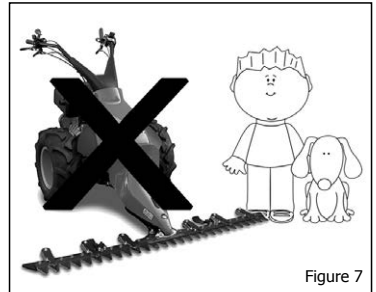


Figure 7

## Operation

**IMPORTANT:** Read all machine and implement manuals thoroughly before using the machine.

Check the fuel level - use either unleaded petrol or diesel, depending on your engine type. We recommend filling the fuel tank using a funnel with a mesh filter to eliminate impurities. Always remove the fuel cap slowly to release tank pressure and keep your face and eyes away from the tank.

Check the engine oil level (see separate engine manual for details).

Check the oil level in the gearbox. Remove oil plug (figure 8, A) and check that the oil level is between the two grooves (figure 8, B & C). If necessary top up with SAE 80w/90 (API GL-5) oil.

### To start the engine and machine

Ensure gear lever is in neutral position (figure 1, D).

Pull in the clutch lever and secure with locking clip (figure 9, B & F).

Ensure PTO lever is disengaged (figure 1, E).

Turn the fuel tap to 'ON' position - if the engine is cold turn on the choke (petrol engine only).

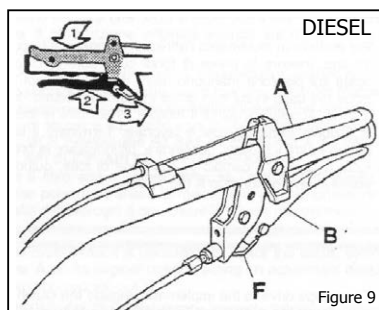
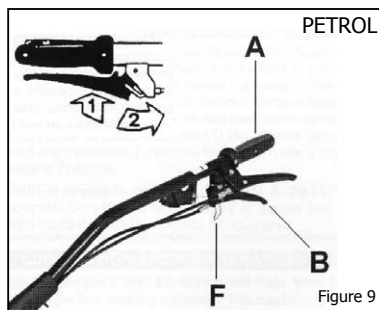
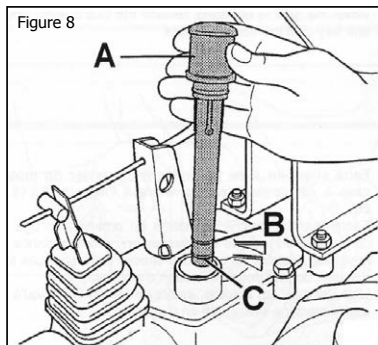
Apply half throttle.

Gently pull the recoil starter handle until resistance is felt and then give a good strong pull to start the engine. **IMPORTANT:** The recoil should be pulled using one hand only to prevent the engine "kicking back" (figure 10).

Push the choke back in (petrol engine only) and return the throttle to idle speed.

Allow the engine to run for a few minutes to allow the oil to lubricate all moving parts.

Figure 8





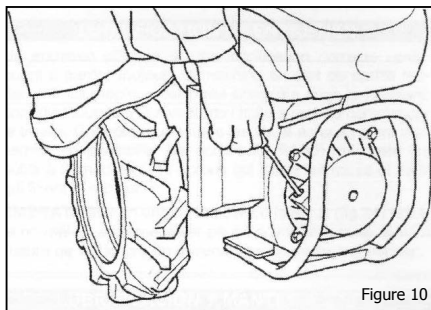
# Operation

## Operating the machine

Pull the clutch lever up to the handlebar to release the locking clip (figure 1, B & F).

Ensure that you do not release the OPC lever (figure 1, A) as this will stop the engine.

Ensure forward/reverse lever (figure 1, L) is in the forward position.



Select the required working speed by pulling up the clutch lever (figure 1, B) and moving the gear speed lever (figure 1, D) to the required position. If the gear does not engage immediately, release the clutch lever slightly and "feel in".

**IMPORTANT:** 4th gear is only used for transportation and must not be used for working.

Engage drive to the implement by pulling up the clutch lever (figure 1, B) and pushing the PTO lever (figure 1, B) forward. If engagement is not immediate, release the clutch lever slightly and "feel in".

Increase engine speed (NOT if using the scythe cutter bar attachment - this should only be used on a maximum of  $\frac{1}{4}$  throttle) and release the clutch lever slowly and fully to commence operation (figure 1, C & B).

Steer the machine by pulling in the steering clutch levers fully and releasing the lever fully as required (figure 1, H & I).

**NOTE:** Gear lever (figure 1, D) and PTO lever (figure 1, E) must only be operated with the clutch lever pulled up and the engine on tick over.

Never change wheel speed when driving the machine - ALWAYS stop first.

DO NOT operate both steering levers together to stop the machine - ALWAYS pull up the clutch lever (figure 1, B).

Engage the parking brake lever (figure 1, M) if leaving the machine unattended and when storing the machine.

# Operation

## **Reversing the machine**

The machine can be reversed in gears 1, 2, or 3 but not in 4th gear (figure 1, L).

First, pull in the clutch lever (figure 1, B) and lower the engine speed to idle (figure 1, C).

Pull the forward/reverse lever (figure 1, L) over towards you.

Slowly release the clutch lever (figure 1, B) and the machine will reverse in the gear previously selected for the forward motion.

With the clutch lever pulled in it is possible to engage an alternative gear speed before reversing.

To revert to the forward speed, pull in the clutch lever and push the forward/reverse lever away from you, then slowly release the clutch lever.

**WARNING:** Never move the forward/reverse lever without first pulling in the clutch lever as damage to the gearbox may result.

Never engage reverse gear with your back to a wall, fence or other immovable object.

## **To stop the engine and machine**

Pull in the clutch lever (figure 1, B).

Close the throttle (figure 1, C).

Select neutral position with the gear lever (figure 1, D).

Disengage the PTO drive to the implement (figure 1, E).

Release the clutch lever slowly and fully (figure 1, B).

Fully release the OPC lever (figure 1, A).

Apply the parking brake (figure 1, M).

Pull up the clutch lever and lock it with the clutch lever locking pin (figure 11, C).

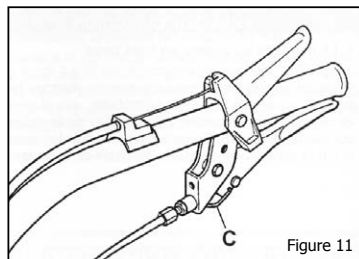


Figure 11

**IMPORTANT:** If you are working on a slope, always work across the slope - never up or down.

**WARNING:** If any abnormal vibrations or sounds occur, STOP the engine immediately and check the machine and the cutter bar. If you have any concerns contact your supplier.

# Maintenance

Proper maintenance will help keep your machine in good working order. Upon delivery your machine will have plenty of lubrication, however before starting work, always check oil levels in both the engine and the gearbox.

## General

Check that all screws, nuts and bolts are well tightened, particularly the nuts that fix the implement and/or quick coupling assembly (figure 3, D) to the machine and the nuts that fix the wheels.

## Clutch

As the clutch wears over time, the cable will tighten up (figure 12 A). To ensure there is sufficient free play in the cable move the adjusters (figure 12, B & C). On no account should the cable be tight - the cable end float should be approximately 2-3mm.

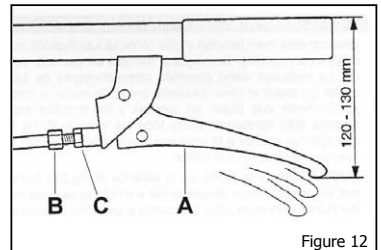


Figure 12

## Steering Clutches

Steering clutch cables act on the long black levers on the side of the wheel hubs. Ensure the end float of these cables is 2-3mm. If necessary screw in the adjuster on the steering clutch lever to increase free play (figure 12, B & C).

## Engine

For engine maintenance please refer to separate engine manual.

After every hour of operation stop the engine and remove the spark plug cap. Check engine oil level (recommended oil SAE 15w/40). Before checking the oil level ensure the machine is level. Replace the spark plug cap.

For the oil bath air filter, if you work in dusty conditions, wash the filtering tank and add oil every 8 hours. Use the same oil as for the engine.

## Gearbox

Every 50 hours check the oil level in the gearbox. Remove oil plug (figure 8, A) and check that the oil level is between the two grooves (figure 8, B & C). If necessary top up with SAE 80w/90 (API GL-5) oil.

## Forward/Reverse

The cable may stretch after initial use and may need adjusting by unscrewing the adjuster (figure 13) to take up the free play.

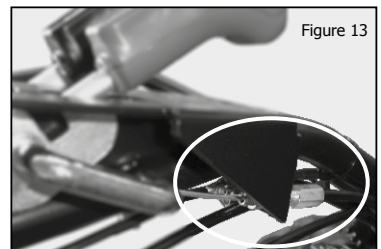


Figure 13

## Troubleshooting

PROBLEM	REMEDY
Engine does not start  PETROL engine only	Make sure the fuel tank is at least half full.
	Check that the fuel tap is open/on.
	If the engine is cold, apply the choke.
	Make sure fuel reaches the carburettor.
	Check that the breather hole in the fuel tank cap is not clogged.
	If fitted, check that the carburettor filter is clean.
	Check that the spark plug is sparking. Take out the plug, reconnect it to its wire, touch the metal part of the plug to the metal part of the machine and pull the engine recoil. If a spark is not seen between the plug and the electrodes check that the wire connections are tight. If the current still doesn't reach the electrodes then replace the spark plug.
If, following the above checks and a new spark plug, the engine still does not start then the most likely problem is with the electrical system. In this instance the engine should be checked by an authorised service professional only.	
Engine does not start  DIESEL engine only	Check that the breather hole in the fuel tank cap is not clogged.
	Make sure the fuel tank is at least half full.
	Check that the fuel tap is open/on.
	Check the fuel lines and if necessary purge them of air - instructions for this can be found in the separate engine manual.
If, following all the above checks the engine still does not start, then it should be checked by an authorised service professional only.	
Gears do not engage	Adjust the clutch. Unscrew adjusting screw (figure 12, B) until the clutch disengages properly.
Machine does not move forward in a straight line	If the machine is pulling left or right when steering clutch levers (figure 1, H & I) are released it is likely that the tyre pressures are incorrect in one of the tyres. Tyres should be inflated to 1.2 bar or 17psi.
The wheel does not lock when activating the control	If the wheel does not lock when you have the relative steering clutch lever (figure 1, H & I) pulled to its maximum limit then it is necessary to adjust the adjusters on the cable to tighten tension of the control cable.

## Risk Assessment

HAZARDS	RISK LEVEL	ACTION NEEDED
Machine tipping over	Low	Do not use on slopes over 20° (unless you are using Bank Commander which has twin wheels and special engine). Work across slopes, never up and down.
Machine running away	Low	The OPC lever (figure 1, A) stops the machine driving if the operator releases the handlebars. Always check operation before use.
Machine reversing and jamming the operator against an immovable object	High	Never reverse the machine with your back to a wall or similar object.
Burns	High	Be very careful of a hot exhaust. Turn off the machine before re-fuelling. Allow 1" air space in fuel tank.
Foot injuries	High	Never let anyone stand in front of the machine when it is operating. Keep all pets and animals away.
Handlebar adjustment	Low	Always set the height and sideways position before operating the machine – never while it is moving.

## How to Replace the Clutch

1. Mount the clutch on the engine.
2. Mount the engine with the clutch to the gearbox and secure it, taking care that the two teeth of the thrust bearing are positioned at the bottom (figure 14, B) as indicated.
3. Connect the clutch driving cable.
4. For adjustments to the clutch refer to the instructions page 11.

After replacing the clutch it is recommended that you leave the machine with the clutch disengaged - pull up the clutch lever (figure 15, C) and lock it with the clutch lever locking pin.

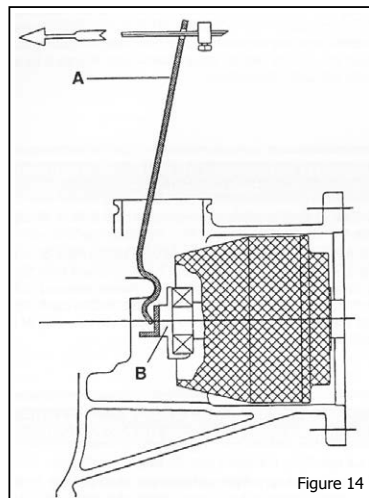


Figure 14



### **IMPORTANT!**

**NEVER** disassemble the inner parts of the clutch.

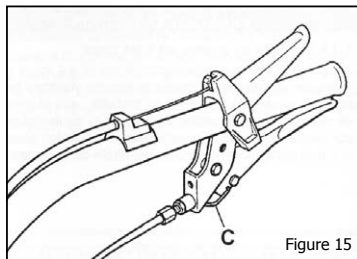


Figure 15

## Steering Clutch Regulation

This current system means it is easy to adjust the steering brakes.

There is no need to add shims between the clutch bell housing and the gearbox flange and it can be adjusted without removing the clutch/brake.

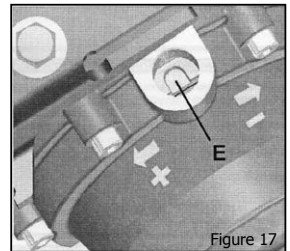
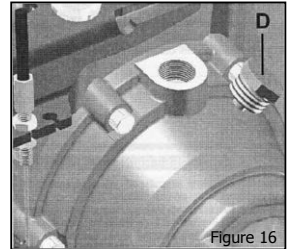
To adjust play follow the steps below:

1. Unscrew cap (figure 16, D).
2. Turn the inner ring (figure 17, E) clockwise to reduce play (-) and increase braking, or anti-clockwise to increase play (+) and reduce braking.
3. Position the ring (figure 17, E) so that a new notch is in the centre of the hole, refit the cap (figure 16, D) ensuring that it is tightened properly.

Each notch adjusts the axial play by approximately 0.06mm.

**IMPORTANT:** The steering units are dry - no oil is required. DO NOT place any lubricant through the cap (figure 16, D).

Overheating, seizure of the transmission and early wear may occur if there is too little play. Excessive wear on the steering clutches reduces braking efficiency and response speed.



## Vibration & Sound Levels

Power Unit	Petrol Engine		
	L <sub>Aeq</sub> (1)	L <sub>wA</sub> (2)	m/sec <sup>2</sup> (3)
BCS 630WS MAX (petrol)	84	n/a*	3.10

(1) L<sub>Aeq</sub> - ACOUSTIC PRESSURE: values expressed in equivalent dB(A).

(2) L<sub>wA</sub> - ACOUSTIC POWER: values expressed in dB(A).

(3) m/sec<sup>2</sup> - VIBRATION: average square value calculated at handlebars according to UNI EN 12733.

\*When L<sub>Aeq</sub> is lower than 85dB(A) it is not necessary to indicate the acoustic power level (L<sub>wA</sub>).



### **IMPORTANT!**

**When using machines with a sound level in excess of 85 dB(A) ear defenders that conform to BS EN 352 must be worn.**



## Storage

If the machine is not going to be used for a long period of time it is recommended that you undertake the following procedures before storage of the unit.

1. Lubricate the cylinder by pouring a spoonful of oil (AGIP F1 GAMMA SAE 20) through the plug hole and turn the engine over several times without starting it.

For diesel engines, remove the injector by unscrewing the two bolts which fasten it to the head and pour a little oil into the hole.

2. Clean the motor and engine thoroughly (see separate engine manufacturer's manual).
3. Protect any implements you have according to the instructions in the relevant manuals.
4. Apply the parking brake (figure 1, M).
5. Pull up the clutch lever and lock it with the clutch lever locking pin (figure 18, C).

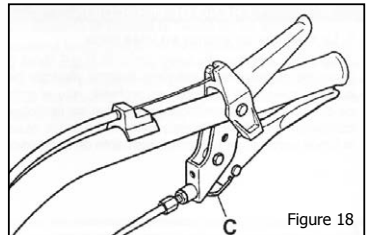


Figure 18

**IMPORTANT:** Prior to using the machine for the first time following storage, always check that the safety devices are working correctly then follow the operating procedures on page 8.

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## Manufacturer Information

This machine is manufactured in Italy by BCS S.p.A.

Tracmaster Ltd is the UK distributor for this model, the BCS 630WS.

BCS S.p.A. has been at the forefront of developing cutting edge agricultural machinery since its formation in 1943, when their founder developed a self-propelled motor mower. Tracmaster Ltd has been the UK distributor for BCS pedestrian equipment since 1984.

Please ensure you read the original manufacturer's manual before operating this machine.



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