DALBO®

TRIMAX Classic

EN
300 cm with fixed frame - 77033

MADE IN DENMARK

TRIMAX Classic

Type 300 cm

Congratulations on your new TRIMAX Classic. For **safety reasons** and to achieve optimum service from the product, please read the User Guide **before use.**

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The TRIMAX Classic has:

Type no.: _____ Serial no.: _____

Month of manufacture: _____ Net weight kg: _____

If contacting the manufacturer regarding spare parts or service, please state type and serial number. A spare parts list is included at the back of this manual.

EU DECLARATION OF COMPLIANCE

DALBO A/S
DK-7183 Randbøl

declares herewith that the above machine is manufactured in accordance with the provisions of directive 2006/42/EC, which replaced directive 98/37/EC and change directives 91/368/ECC, 93/44/ECC and 93/68/ECC on harmonisation of member state legislation concerning health and safety requirements related to the construction and manufacture of machines.

CE

This machine corresponds to the safety requirements in the European Safety Guidelines.

DALBO A/S Date: _____

Alessio Riulini, CEO

Table of Contents

Safety

This symbol appears in the instruction manual each time there is a safety warning concerning your safety, the safety of others or functionality of the machine. All safety instructions must be observed and made available to all users of the machine.

General

- Ensure you are familiar with all aspects of the machine before use
- There are safety stickers on the machine containing important instructions for the safety of yourself and others, and correct use of the machine.
- Do not carry passengers during operation or transport.
- Ensure there are no personnel within the machine's working radius before operating. Operate machine only from inside the tractor.
- Before leaving the tractor or making adjustments, performing maintenance or repairs on the machine, fully machine lower to the ground, apply tractor handbrake, switch engine off and remove ignition key to prevent accidental operation.
- Remember to secure top arm and lift arm (if relevant) with split rings.
- Never leave driver's seat whilst machine is moving.
- Always adapt speed to conditions.
- Do not use machine unless all safety devices are in place. Defective safety devices must be replaced immediately.

Hydraulics

- Ensure there are no personnel within the machine's working radius when activating the hydraulic system to avoid danger of crushing.
- Lower machine fully for any repair work on the hydraulic system. Relieve hydraulic pressure, switch engine off and remove ignition key.
- Clean hydraulic connections thoroughly before reconnecting. When connecting hydraulic hoses to tractor hydraulics, ensure they are not under pressure.
- Bleed the hydraulic system thoroughly after any repairs.

- Check hydraulic hoses regularly for defects such as cracks, splits, crimps, wear or breaks. Defective hoses must be replaced immediately.

- Avoid spilling oil on the ground. If oil is spilt, collect and deliver to a destruction point.

- Clean hands thoroughly after contact with oil and grease. Change oil-stained clothing immediately. Hydraulic oil can be harmful to the skin.

- Hydraulic oil released under high pressure can penetrate the skin and cause severe injury. In the event of injury, seek medical help immediately.

Assembly

- Danger of crushing! Ensure no personnel are between implement and tractor, or between the parts to be connected.

Maintenance and repair

- Ensure machine is adequately supported or fully extended for all repair and maintenance work. Ensure tractor and machine are properly braked, engine stopped and ignition key removed.

- Tighten all screw connections after a few hours use. Check all screw connections regularly and tighten as required. Check all split pins and bolts to avoid mechanical failure.

- Dispose of oil, grease and filters in accordance with local environmental protection rules.

Road transport

- All safety and warning precautions mandatory by law must be fitted and tested before transporting the machine on public roads. The driver is responsible for correct lighting and warning signs in accordance with traffic regulations.

- Check with local traffic authorities whether transport on public roads is allowed given the machine's dimensions.

- When transporting, ensure permitted total weight for tractor is not exceeded and that loading on tractor front axle is not less than 20% of tractor net weight. If this is the case, use weights on tractor front.

Correct use

- Correct use of the machine includes observing the manufacturer's operating, maintenance and repair instructions, and that original spare parts are always used.

- This product may only be used, maintained or repaired by personnel familiar with it and who are aware of the risks that can be involved.

- The manufacturer cannot be held liable for injury or damage arising from modifications made to the machine performed without prior permission from the manufacturer. Neither can the manufacturer be held liable for injury or damage arising from incorrect use. Such liability rests solely with the user.

- Do not add extra weight to the machine.

Technical data

TRIMAX Classic	
Size (cm)	300
HP (recommended)	130
Gross weight kg:	
Cage roller	X
Accessories	
T-rings	X
Flat steel crumbler	X
Terra-cut	X

Delivery

TRIMAX Classic is delivered complete on a trailer. The machine can be partially dismantled if exported.

If lifting the machine, we recommend the use of straps on the mid-section to maintain balance.

How to use this manual

The sequence of subject matter in this manual can seem illogical. Please refer to the table of contents for page numbers for individual items.

The manual is divided into main sections:

- Safety
- Starting routine and running
- Maintenance
- Repairs

The following symbols represent:

Points which are important to functionality and service life.

Points relevant to safety.

Uses

TRIMAX Classic is a powerful chisel plough used for tilling stubble and crop residue. Due to its high ground clearance and the distance between the tines, large volumes of crop residue can be tilled.

Fig. 1

The machine is designed to achieve full ripping, breaking up the growth of crops and weeds. The shape of the tines causes soil and crop residue to be thrown into the air and thoroughly mixed.

The machine consists of three bullet harrows followed by a row of angled plates which smooth and spread evenly after the tilling tines. At the back is the cage roller which controls depth, smoothes the soil and crushes clods. The cage roller is available with a tubular packer roller, or 60 cm T-rings.

A 400 mm diameter flat steel crumbler can be mounted behind the standard cage roller as an optional extra.

Advantages of TRIMAX Classic

TRIMAX Classic's advantages consist of:

- Exact depth setting between 4 and 20 cm.
- **No** supporting wheels to cause uneven packing.
- Full ripping resulting in fewer passes.
- Uniform mixing of crop residues.
- Retains soil humidity.

The TRIMAX Classic is therefore well suited for tilling the upper soil layer, where the highest rate of plant decomposition occurs. That's why the TRIMAX Classic is an efficient implement in a strategy for reduced soil-cultivation, as only one pass is needed to achieve full ripping with uniform mixing of crop residues and soil microorganisms. To retain humidity in the soil and improve the microclimate for soil organisms, the process is completed by packing the soil.

Connecting and disconnecting

Connecting

Attach lift arms first, followed by the top bar. Adjust top bar until the frame is horizontal.

- Remember to secure with a split pin.

Fig. 2

Disconnection

TRIMAX Classic can be disconnected whilst folded or extended.

Remember to depressurise hoses before disconnecting them.

Fig. 3

The ball cock for the hydraulic stone shaker must also be closed (*see fig. 8*).

Stand the machine on a firm, level surface. Detach top bar and lift arms.

Setting up

The machine is supplied with factory settings, but fine adjustment will always be required before use. Numerous adjustment options make the machine more flexible and ensure maximum use.

Depth

Depth is controlled by the cage roller at the back, in the form of a T-ring roller.

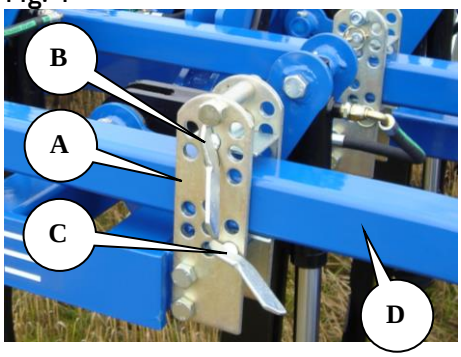
Tine depth is adjusted using pins in the brackets (A). The upper pin (B) determines depth and the lower pin (C) is for support, bearing the cage roller when the implement is lifted.

Depth adjustment may necessitate adjusting the top bar, as the frame must always be horizontal.

Deeper tilling

Setting deeper tilling is done by lifting the machine sufficiently from the ground that the arm (D) no longer presses on pin (B). The pin can then be withdrawn from the bracket and moved one hole higher. The lower pin (C) must be moved correspondingly, so that the support is as close to the arm (D) as possible.

Fig. 4

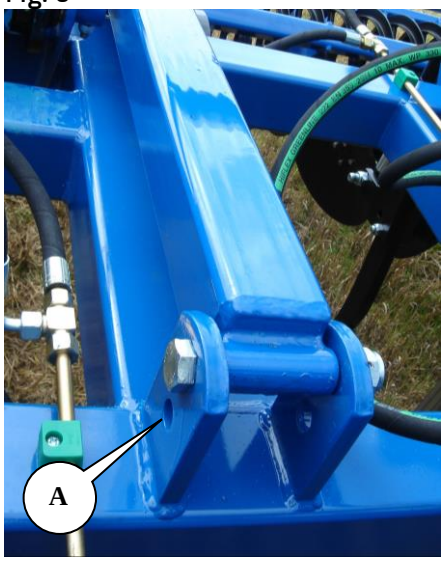


If depth is altered, it may be necessary to run the tines into the soil a little (or support the cage roller) to put pressure on the cage roller. The pin (C) can then be easily fitted into the hole closest to the arm (D).

If very deep tilling is required, the cage roller arm can be moved downwards in the holes (A).

The machine must be lowered to the ground to support the cage roller before detaching.

Fig. 5



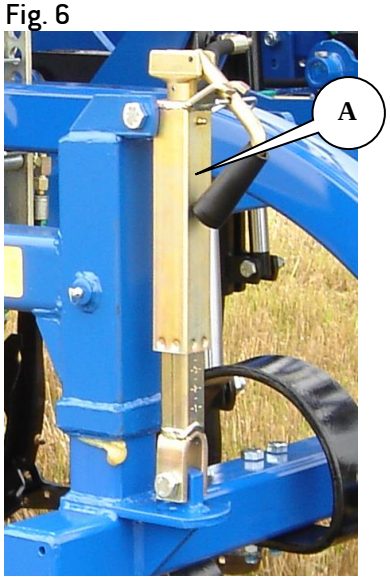
Flat tilling

Setting for flatter/shallower tilling is done by moving the pins downwards This will raise the chisel plough frame causing the tines to give flatter tilling. It may be necessary to run the tines into the soil a little to loosen the pin (C, fig. 4). Once the pin (C) has been inserted into a hole further down the flange, lift the machine to be able to place pin (B) as close to the arm (D) as possible.

Plate depth adjustment

The correct plate setting leaves a smooth field with no visible tracks from the harrow tines. Fine adjustment of the plates is performed using the crank (A) once the machine is ready for use on the field. The plates must be set to work on the surface, to throw a sufficient amount of soil back after the harrow tine.

Fig. 6

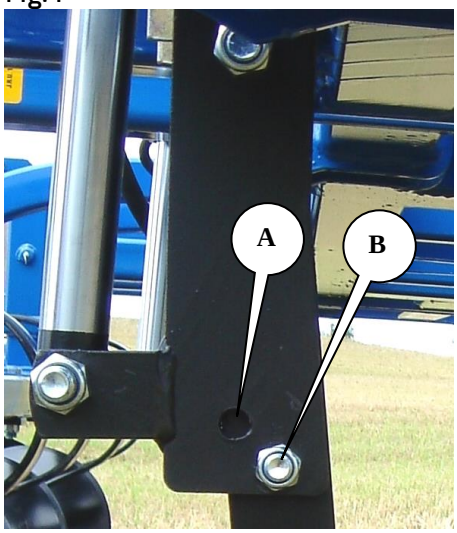


Tine angle

Setting the tine angle of attack in two different positions (A, B) means one tine will always be in contact with the soil.

The most aggressive setting should be chosen for very dry soil (A), and setting (B) is more suitable for light soil and in moist conditions. The stalk setting should not be more aggressive than necessary to avoid wear and excessive traction.

Fig. 7



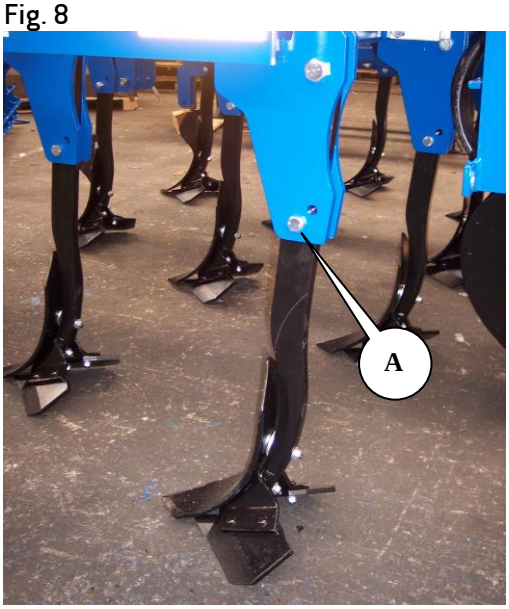
TRIMAX Classic with spring bolts

TRIMAX Classic is fitted with spring bolts to prevent stone damage.

When replacing spring bolts (A) always place the bolt in the same hole as for the other tines. Check tine angle. See relevant section.

Spring bolts must be:
quality 4.6

Fig. 8



Operation

Correct operation is vital for optimum use. This applies to working in the field and for safety. Always ensure you are fully familiar with all safety aspects of the machine.

We recommend running at a slight angle to the sowing direction for the best results.

TRIMAX Classic must be set up so that it is supported by the cage roller. The tractor hydraulic lift handle must be fully lowered when in operation to allow the lift to move with the movements of the machine. Depth will be controlled at the back by the cage roller and at the front by the top bar.

When changing the depth, adjustment of the plates may be necessary. The plates must work on the surface, but perform any tilling apart from smoothing out after the tines, to ensure a suitable amount of soil is thrown back after the harrow tine.

Operating speed

To achieve optimum tilling, a speed of between 8 and 12 km/h is required. **But always work according to the conditions**.

Please note that wear increases significantly in line with the speed. The cutters can also be damaged if operating at excessive speeds in unfavourable conditions.

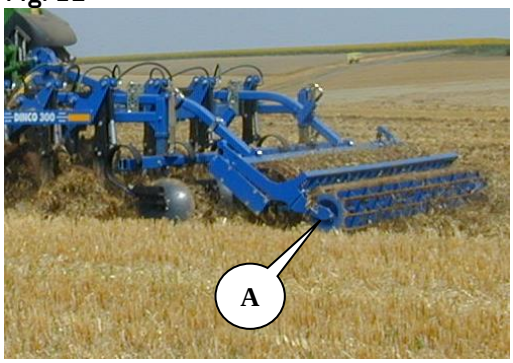
Wear on the tines will increase significantly at high speeds, particularly under dry conditions.

Accessories

The TRIMAX Classic can be fitted with a range of accessories to suit requirements.

Flat steel crumbler

Fig. 12

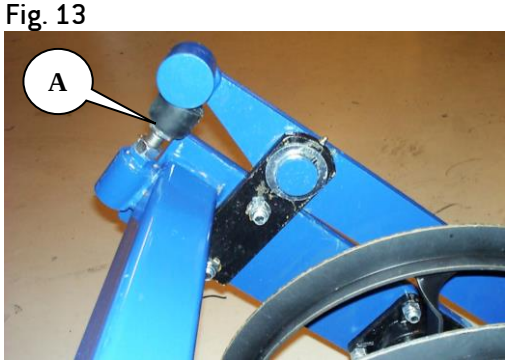


The flat steel crumbler (A) is fitted after the cage roller to further even out the soil. It is designed as a roller with a smaller diameter than the cage roller, which provides faster rotation and thus a better crushing effect on clods. It will also provide an extra packing action to the topmost soil layer, helping retain soil humidity.

Operation and adjustment

The flat steel crumbler is **not** designed to support the TRIMAX Classic, but is purely intended to crush, crumble and even the soil after the TRIMAX Classic, as depth is determined by the cage roller.

Fig. 13



The flat steel crumbler works on the upper soil layer. Pressure is set using the bolts (A). If the bolts are extended, the flat steel crumbler's pressure on the soil is increased. If the bolts are retracted, the pressure is reduced.

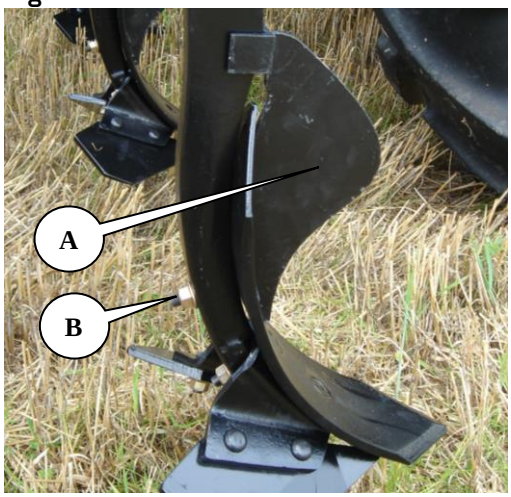
The flat steel crumbler must **not** be set to support the machine, as the larger cage roller is intended for this purpose.

Terra-cut

To part the soil flow thrown up from the tip, a Terra-cut (A) can be fitted.

The Terra-cut is fitted to the centre hole (B) of the tine, and is supported by the stalk higher up.

Fig. 14



Maintenance

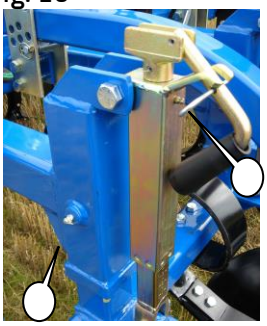
Good maintenance ensures long service life and optimum use. Grease nipples are fitted where wear is heaviest.

Tighten all screw connections after first working day. Check all split pins and bolts to avoid mechanical failure. Check hydraulic system for leaks.

All maintenance and repair work can only be performed when the machine is lowered to the ground, the tractor is braked, engine stopped and ignition key removed to prevent accidental start and crushing.

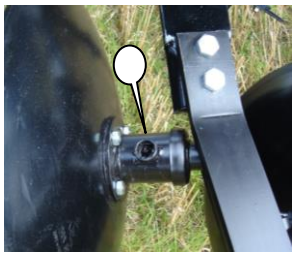
Lubrication

Fig. 15



A

B



C

Lubrication points	Lubrication intervals, hours	Illustration
Crank/telescope	100	A
Cage roller bearings	50	B
Plate bearings	50	C

Lubricate all lubrication points at least once annually.

Hydraulics

Check all hydraulic hoses for wear or cracks. Check all hoses for crimping.

Lubricate exposed rams with oil or pressure-resistant grease to avoid rust forming when storing for long periods. Remember to remove before use.

Plate hubs

Tighten all plate hubs once annually or as required.

1. Remove plates.
2. Remove split pin from hub nut.
3. Tighten hub nut a 1/4 turn, or until there is no play in the hub.

Fig. 16

Wear parts

The tips of the tines are reversible and must be turned before the brackets they are mounted on are worn.

Replace the wings when they are worn to the extent that they no longer work properly, or before wear is caused to the bracket.

Replace the plates when they are worn to the extent that they no longer work properly, or before wear is caused to the bracket.

Replacement andrepairs

Safety is vital for **all** repair work on the machine. Always observe the following points, plus those under Safety First in the instruction manual.

All maintenance and repair work can only be performed when the machine is lowered to the ground, the tractor is braked, engine stopped and ignition key removed to prevent accidental start.

Particular attention must be paid to safety when repairing hydraulics. Depressurise the hydraulic system before starting work.

When replacing cylinders, always fill new cylinder with oil before pressurising system. We recommend fitting cylinder to frame first, fill with oil, before completing fitting at top.

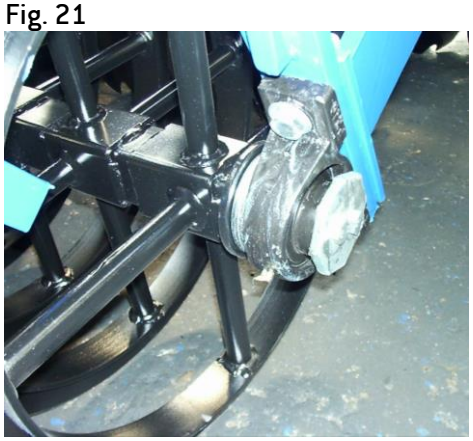
Always ensure hydraulic system is bled after repairs and before use to prevent mechanical breakdown and injury to person.

Replacing axles, bearings and T-rings

Lower machine to the ground. Support cage roller if necessary.

Beware of accidental rolling when the bearing bolts are removed.

Fig. 21



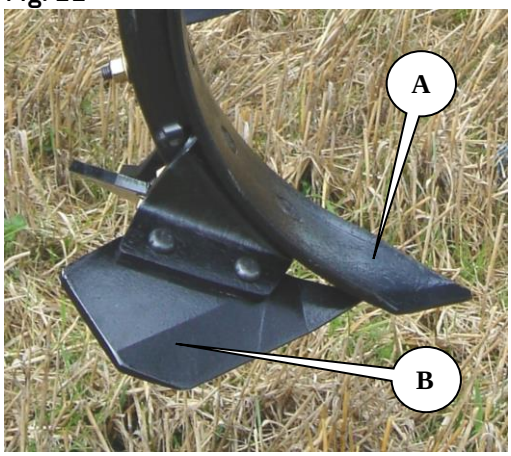
1 Remove bearing bolts.
2 Roll the T-ring axle away from the frame.
3 Slacken bearing screws and remove bearings from axle.
4 The T-rings and steel tube can now be pulled off the axle.
5 Reverse order to reassemble
6 Apply Loctite to bearing screws.

When fitting axles with bearings, remember to ensure the bearing lubrication nipples face backwards. This gives easy access for lubrication and protects the nipples from stones.

Replacing wear parts

Support implement securely to avoid danger of crushing or falling

Fig. 22



Tine tips (A) are reversible and secured by three bolts. Turn or replace tips before bracket becomes worn, whereupon retain tip and wings (B).

When turning tips, old bolts can be reused, but when replacing them, use new bolts. Remove any accumulated soil between stalk and tip.

- **12 x 70 mm plough bolt, size 10.9 for securing tip**
- **12 x 35 mm plough bolt, size 10.9 for securing wings**

Replace the wings when they are worn to the extent that they no longer work properly, or before wear is caused to the bracket.

Scrapping

Beware of the weight of any given part when removing or disassembling. All parts **must** be supported or lifted to avoid danger of falling.

Disconnect hydraulic hoses and cylinders and drain oil. Collect oil in container to avoid pollution. Send oil and hoses for destruction.

All iron used in the machine can be recycled.

Spare parts