

# Potting machine TM 1610F



## Operating instructions

Issue date: 1<sup>st</sup> October 2020 / V1.1

Before the initial start-up, read and keep at the machine for future use.



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# 1 Product description

## 1 Intended use

The Mayer TM 1610F potting machine may be used for planting and replanting plants with a minimum of working force and of time.

Other means of use of the machine, besides the ones listed here, are not permitted – and they are not the usage for intended purpose.

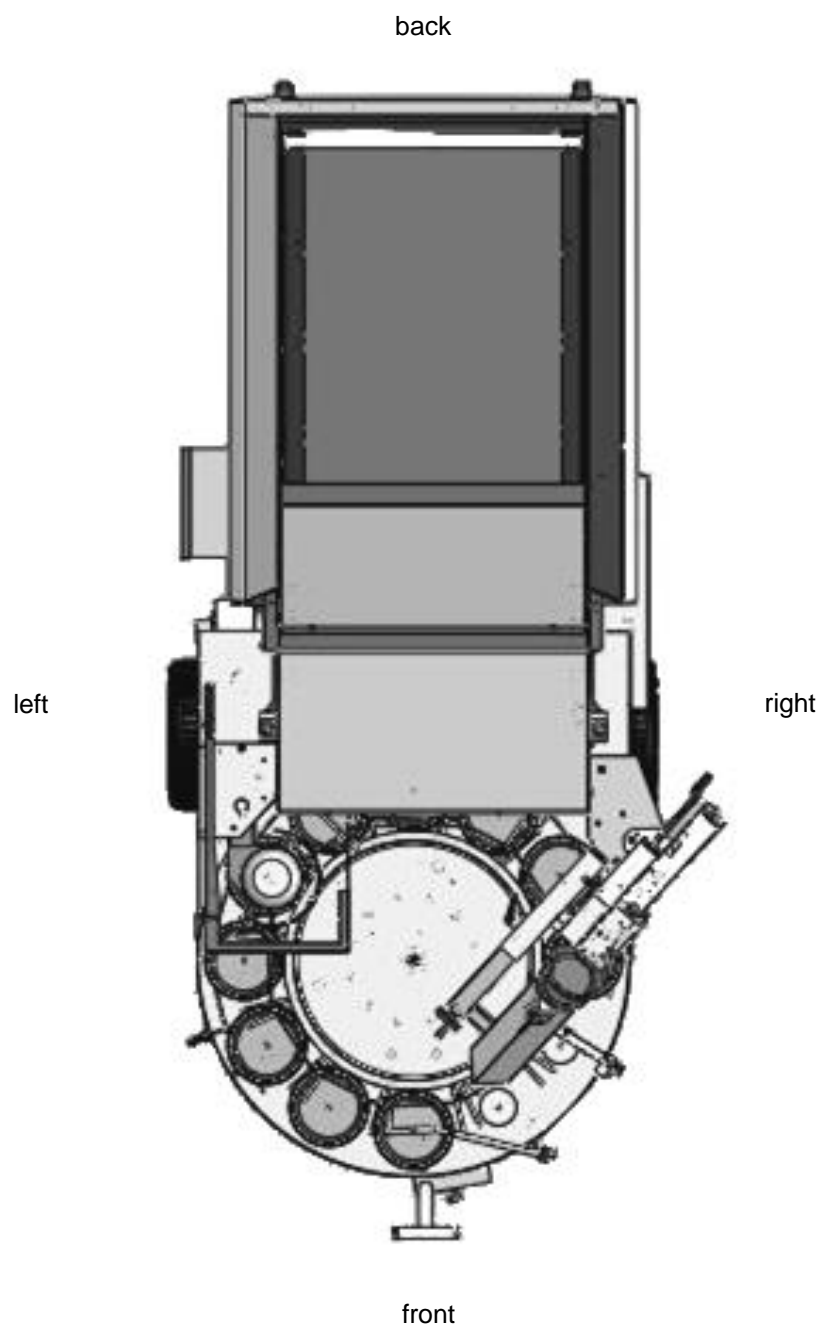
If the Mayer TM 1610F potting machine is not used in accordance with the regulations, safe operation of the machine is not guaranteed.

The usage for intended purpose involves reading of the operating instructions, and compliance with regulations, especially with safety regulations stated in them. Furthermore, every inspection and maintenance should be performed in specified time.

The manufacturer accepts no liability for damages resulting from improper use. The operator of the MAYER 1610F Potting machine is solely responsible for personal injuries or property damages.

## 2 Structure

### Plan view of potting machine TM 1610F



### 3 Functional description

#### a) Working without automatic pot dispenser

When there is no pot dispenser installed, empty pots are loaded by one person on the turntable located on the right side of the machine when it is viewed from front side.

The turntable is driven by a worm drive mechanism and is moved intermittently counterclockwise.

The pots are forwarded under the elevator.

Plates are fixed on endless chains located in the elevator housing which take the soil from the hopper. When the plates reach the upper turning point, soil falls into pots beneath.

There is a controlled conveyor belt installed into the soil hopper which forwards the soil always towards the elevator.

The turntable continues to turn and a drilling motor - synchronously with the inching mechanism - drills a hole into the soil using an exchangeable drill.

One or several person(s) standing around the machine may plant plants into the pots. Plant holding trays may be located either beside the machine or in a separate storing place or on top of the turntable.

A pot take-off is installed to remove the planted pots from the turntable and to push them on a conveyor belt connected to the machine.

**Warning!**

**When there is no automatic pot dispenser installed, special care shall be taken on section 2 "General safety instructions".**

#### b) Working with automatic pot dispenser

When there is an automatic pot dispenser installed, feeding by hand is not necessary and it saves manpower.

Further instructions are detailed in Operation instructions of pot dispenser.

#### 4 Technical data

<b>Make:</b>	<b>Mayer</b>
<b>Machine type:</b>	<b>Potting machine</b>
<b>Series:</b>	<b>TM 1610F</b>
<b>Length / width / height:</b>	296 / 130 / 195 cm
<b>Weight:</b>	780 kg
<b>Working height:</b>	approx. 85 cm
<b>Power connection:</b>	400V/50Hz, 5-pole
<b>Power input:</b>	2,05 kW
<b>Pot size:</b>	5 to 21 cm diameter for round and square pots
<b>Capacity of soil hopper:</b>	1 m <sup>3</sup>
<b>Production speed:</b>	max. 2800 pots/hour
<b>Drill sizes:</b>	3,5 -13 cm
<b>Noise level:</b>	73dB (A)

**Available accessories** (for an additional charge)

- fertiliser dosing dispenser
- pot dispenser with storage belt
- extension kit for soil hopper
- conveyor belts

**Important!**

**When placing repeat orders for accessories and spare parts, make sure to have information about the machine type and number at your hand!**

## 5 EU declaration of conformity

According to Appendix IIA of the EU Machinery Directive (2006/42/EC)

The manufacturer:

**Mayer Ipari és Kereskedelmi BT.  
Georg Mayer út 1. 9341 Kisfalud / Hungary**

**Mayer GmbH & Co. KG.  
Maschinenbau und Verwaltung  
Poststraße 30. 89522 Heidenheim/Germany**

hereby attests that the machine described in the following:

**Make: Mayer  
Model: Potting machine  
Series: TM 1610F  
Year constructed: from 2020**

fulfils the safety and health requirements of the following EU Machinery Directive:

**2006/42/EC**

*Harmonised standards applied:*

EN ISO 12100:2011	Safety of machinery. General principles for design. Risk assessment and risk reduction (ISO 12100:2010)
EN 60204-1:2010	Safety of machinery. Electrical equipment of machines. Part 1: General requirements (IEC 60204-1:2005, modified)
EN ISO 13849-1:2016	Safety of machinery. Safety-related parts of control systems. Part 1: General principles for design (ISO 13849-1:2015)
EN ISO 13850:2016	Safety of machinery. Emergency stop. Principles for design (ISO 13850:2015)
EN ISO 13855:2010	Safety of machinery. Positioning of safeguards with respect to the approach speeds of parts of the human body (ISO 13855:2010)
EN ISO 13857:2008	Safety of machinery. Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)
EN ISO 14119:2014	Safety of machinery. Interlocking devices associated with guards. Principles for design and selection (ISO 14119:2013)
EN 349:1993+A1:2008	Safety of machinery. Minimum gaps to avoid crushing of parts of human body.
EN 618:2002+A1:2011	Continuous handling equipment and systems. Safety and EMC requirements for equipment for mechanical handling of bulk materials except fixed belt conveyors
EN 619:2002+A1:2011	Continuous handling equipment and systems. Safety and EMC requirements for equipment for mechanical handling of unit loads
EN ISO 4414:2011	Pneumatic fluid power. General rules and safety requirements for systems and their components (ISO 4414:2010)
EN ISO 14120:2016	Safety of machinery. Guards. General requirements for the design and construction of fixed and movable guards. (ISO 14120:2015)



EN 1037:1995+A1:2008	Safety of machinery. Prevention of unexpected start-up
EN ISO 14738:2009	Safety of machinery. Anthropometric requirements for the design of workstations at machinery. (ISO 14738:2002, + Cor 1:2003 + Cor 2:2005)
EN 1005-2:2003+A1:2009	Safety of machinery. Human physical performance. Part 2: Manual handling of machinery and component parts of machinery
EN 1005-5:2007	Safety of machinery. Human physical performance. Part 5: Risk assessment for repetitive handling at high frequency.

**Any design alterations that effect the technical specifications given in the Operating Instructions or the intended use, i.e. change the machine substantially, will invalidate this EU Declaration of Conformity.**

Heidenheim, 1st October 2020

.....  
Geschäftsführer | Managing Director



## 2 General safety instructions

### 1 Due diligence of the operating company

The Mayer TM 1610F potting machine was designed and built with taking a danger analysis into consideration and after careful selection of the harmonised standards to be complied with as well as other specifications. It therefore meets the state-of-the-art of techniques and guarantees a maximum degree of safety.

However, this safety can only be achieved in actual operational practice only if all necessary measures are taken. Planning these measures and checking their implementation is subject to the operating organisation's duty to take due care.

#### **The operating organisation must in particular guarantee that:**

- ... the machine is only used in accordance with its intended use (cf. section Product description).
- ... the machine is only operated when in flawless working order and, especially, that the working order of the safety equipment is regularly checked.
- ... the Operating Instructions are always available in legible condition and complete at the location where the machine is used.
- ... only sufficiently qualified and authorised personnel operate, service and repair the machine.
- ... these personnel are regularly instructed about all relevant matters concerning industrial safety and environmental



protection and that they know the Operating Instructions and especially the safety instructions they contain.

- ... none of the safety and warning signs attached to the machine are removed and that all remain legible.
- Users must obligate themselves only to ever operate the machine when it is flawless condition.
- No unauthorised conversions or alterations are allowed that influence the machine's safety.
- Only when the machine has stopped must any work ever be carried out on it.

- Before beginning with any work on the machine, secure its drives and accessory parts against being switched on unintentionally.
- The protective devices may only be removed when the machine has been stopped.
- Local safety and accident-prevention regulations always apply to any operation of the machine.
- The machine may not be started if any safety devices are removed.
- In the working area the operator is responsible for other people.
- **In case of non-compliance with any one of the points cited above, the manufacturer shall be released from all liability.**

## 2 Explanation of the safety symbols

The safety symbols along with the text of the safety instructions are meant to point out unavoidable residual dangers that exist when dealing with this machine. These residual hazards relate to:

- People
- The machine
- Other things and objects
- The environment

The following safety symbols are used in these Operating Instructions:

This symbol indicates that there are dangers to the machine, things and the environment, but that no dangers to people are to be expected. If these instructions are not followed, it might result in malfunctions and damage to the machine. Property damage and environmental damage might also come about.



This symbol identifies instructions contributing to better understanding of the machine information that helps you to use the machine in optimum fashion. This symbol does not identify safety instructions.



This symbol warns against the danger of electric shock.



Be sure to also note that a safety symbol can never replace the text of safety instructions — the text of safety instructions must therefore always be read completely!

### 3 Basic safety precautions

**Always be sure that:**

- ... tight-fitting working clothes are worn at all the workplaces.
- ... it is not allowed to wear chains, rings, bracelets or wristbands.
- ... for operationally relevant reasons, it is not possible to completely cover the compost hopper.
- ... it is not allowed to reach into the compost hopper (to push in more soil, for example), because when doing so, there would be a danger of getting caught by the scraping chain.
- ... it is not allowed to get into the compost hopper while the machine is running.
- ... it is not allowed to reach into the turntable or pot dispenser while the machine is running.
- ... it is not allowed to reach into the drilling stand while the machine is running.
- ... it is not allowed to reach into the pot transfer while the machine is running.

## 4 Machine-related safety precautions

The workplaces are spread over various areas of the potting machine.

a) Feeding pots into the rotating assembly (for a machine without pot dispenser) or feeding pots into the pot dispenser (for machines with pot dispenser) on the right side of the panel.

b) Filling the soil hopper with substrate from the rear or from the right or left side.

c) Potting plants on the front left of the panel, between drilling stand and pot transfer.  
Alternatively, they can also be potted on the conveyor belts.

Responsibilities for the various activities must be clearly defined and complied with.  
Unclear competencies represent a safety risk.

Persons who are engaged in putting single pots into the rotating assembly must have been given separate training, during which it was pointed out to them that there is a potential danger of being drawn into the machine if they got stuck at the rotating assembly.

For procedural reasons it is not possible for the rotating assembly to be covered.

When potting at the rotating assembly, there is a potential hazard of getting stuck in there due to carelessness or wearing further additional clothing or jewellery.

In case of malfunctions during the workflow, it is forbidden to touch the running machine in order to resolve the malfunction.

It must always be possible to access the emergency cut-off switch.

The emergency cut-off switch should always be located on the relevant workplace (during normal operation preferably on the panel, next to the right of the worker).

It is forbidden to climb onto the running machine.

The machine must be set up on even and solid surface so that it stands securely in place.

There is danger of life in case the machine is falling over.

The floor (workplaces at the machine and traffic routes) must be regularly cleaned from dirt and water in order to avoid danger of slipping.

Stumbling blocks in the form of cables connected to the energy supply systems must be avoided.

All feed lines to the machine must be protected against damage.

Only a skilled electrician is allowed to carry out works on the electrical equipment.

Protection devices

- are fitted for the safety of operating personnel
- must in no case be changed, removed or evaded by modifications to the machine.

## 5 Demands on operating personnel

The machine may only be operated by personnel who have been trained for such, shown what is involved and are authorised to do so. These individuals have to know and act in accordance with the Operating Instructions. Respective authorisations for the operational personnel must be clearly prescribed.

In addition, special qualifications are required for the following activities:

Operational personnel being trained may at first only work with the machine under the supervision of an experienced individual. It should be confirmed in

writing that the training has been successfully completed.

Only trained personnel may ever operate any of the control and safety equipment.

All individuals that carry out any activities with the machine have to read the Operating Instructions and confirm by their signature that they have understood the Operating Instructions.

## 3 Transport

**To prevent damage to the machine as well as injuries while transporting the machine, it is absolutely necessary to comply with the following points:**

- Transport work may only be carried out by individuals qualified to do so, complying with the safety instructions.
- The machine may only be lifted by the supporting points provided for such.
- Only the load-lifting devices and tackle specified here may be used to transport the machine.

- Be sure to also read the "General Safety Instructions" section.

**When transporting the machine, the following special dangers must be expected:**

- Suspended loads can drop, which would be a lethal danger – never go under suspended loads!
- If load-lifting equipment other than that specified here, severe damage to the machine may result.

## 1 Transport

When the machine is transported, special care shall be taken to avoid damage of the machine during loading or unloading.

During transport fixings according to type of transport shall be implemented.

Moisture condensation caused by temperature difference during transport as well as shocks during transport shall be avoided.

The machine shall be operated with usual care.

It is recommended to use a relevant attachment when loading or unloading the machine by means of a forklift.



## 2 Handling

The potting machine is fitted with 2 pneumatic tyres on one axle on the front and 2 castors with handbrake on the soil hopper. The weight of the empty machine is balanced on the axle.

When the machine is moved, pay particular attention to the supply lines to the machine to prevent that the lines are damaged and/or ripped out of their couplings if the machine runs over them with the front wheels.

If the machine is to be moved over an inclined plane, it is necessary:

- to completely empty the soil hopper,
- to make sufficient safety precautions in order to prevent the machine from accidentally rolling away.

Such precautions may include:

- enough personnel
- to secure the wheels using a wedge
- and so on.



## 3 Storage

When the machine or its parts are not reassembled right after transport, then they shall be carefully stored in a protected place. It shall properly be covered and protected against dust and moisture.

Tasks for putting out of operation are detailed in section 6.3.



## 4 Installation

### 1 General notes

a)

To protect the machine against weather caused damages it is suggested to use and store it inside.

b)

Electrical connection: 400V/50Hz, 5-pole.

Connection is permitted only to socket-outlets protected by means of a 0,03 A current-operated protective device.

c)

Be sure that enough space is assured for feeding and filling pots. Same care shall be taken in case machines are connected in front of or behind it.

d)

In order to utilise the machine's maximum performance, it is suggested to prepare soil mixture, seedling, plants, pots, trays on the best place and in sufficient quantity.

Do not under-estimate the task of removing and transporting filled pots, since an insufficient solution may considerably decrease the efficiency of the machine.



## 2 Installing the machine

A hard soil surface shall be provided under the machine to prevent the wheels from sinking into the soil.



## 3 Measures for the machine's stability against overturning

There is no need to carry out other activity for erecting the machine than it is described in section 4.2.

## 4 Disassembly and disposal of the machine

After completion of its full time of operation, the machine must be duly separated from energy supply systems and disposed according to valid legal regulations.

## 5 Initial start-up

It is absolutely necessary to comply with the following safety instructions for the initial start-up of the machine. This will prevent injury to individuals, damage to machinery and other property damage.

- The initial start-up may only be carried out by qualified individuals, complying with the safety instructions.
- Before the first start-up, check whether all the tools and parts not belonging to it have been removed from the machine.
- Before the first start-up, check the electrical connections.
- Activate all safety equipment and EMERGENCY SHUT-OFF switches before the initial start-up.
- Also read section "General Safety Instructions".

### 1 Check prior to first start

Prior to starting up the machine, the following must be checked:

- are all safety devices available?
- was the machine damaged during transport?
- all visible bolted joints must be checked for tight seat.
- Prior to putting the machine into operation, the machine's connecting cable and the cable of the pedal switch for start/stop must be checked for damages.



## 2 Starting the machine for the first time

After reassembly, the machine shall be checked as per the following:

a)

Be sure no foreign materials or tools, are left in the soil hopper, in the elevator or on the turntable.

b)

Put the main switch of the machine to OFF („Zero”) position before the plug of the connection cable is connected to the socket.

c)

When the machine is connected, put the switch to „1 ON” position.

d)

Now turn the switch for "soil" to position "2" and then turn the switch for the "drill" to "2" also. Press pushbutton „Start” on „Start-Stop” switch of the swinging cable and the turntable starts to rotate counterclockwise.

If it rotates clockwise, call an electrician to change phases at the connecting cable.

Plates of the elevator shall be forwarded from the bottom towards the top seeing from the side of the soil hopper.

Pay attention to the following:

Reversing switch “Soil”:

- switch position “2”: the turntable, the elevator and the conveyor belt move in working direction.
- switch position "1": the turntable and the elevator move against working direction, the conveyor belt moves in working direction.

Reversing switch “Drill”:

- switch position “2”: drill rotates clockwise  
> it excavates the soil.
- switch position "1": drill rotates counterclockwise  
> it compacts the soil.

Reversing switch “Turntable”:

- switch position "1": the turntable moves in working direction.

e)

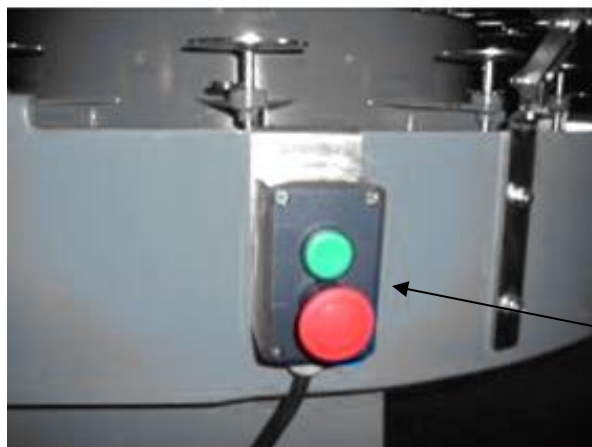
In case there were no problems found or unusual noises heard during test operation, the machine may be put into operation as it is described in section „Operation”.



Emergency stop



Main switch



Flexible start/stop with emergency cut-out

### **3 Stopping the machine**

There are two ways to switch off the machine.

a)

In normal case by switch "Stop" mounted on the swinging cable.

b)

In emergency case by „Emergency Stop" switch.

**Note:**

**See also section "6.2 – Shutting down the machine"**

## 6 Operation

### 1 Normal operation

#### a) Before starting operation the following shall be checked:

- Are pots, plants and soil mixture available in sufficient quantity?

Take care of the following:

- Soil transport
- Delivery and removal of plants
- Pot preparation
- Using the shortest transport routes

#### b) Adjusting or shifting the pot turntable

- Release clamping lever below the box support.
- Open the pot receptacle by moving the pot holding disk.



- Place the required pot on the pot support.
- Adjust the pot support height so that the clips of the pot holding disk are a little below the pot edge.
- Adjust the rear stop so that the pot is in the middle of the pot support.
- Move the pot holding disk again to close the pot receptacle so that there is a little space left on the sides between the pot and the clips of the pot holding disk.
- Retighten the clamping lever.
- Adjust pot scraper in such a way that excessive soil is scraped from the pot.
- Adjust lower scraper brush in such a way that it cleans the pot support.
- Adjust upper scraper brush in such a way that it cleans the clamps of the pot holding discs.





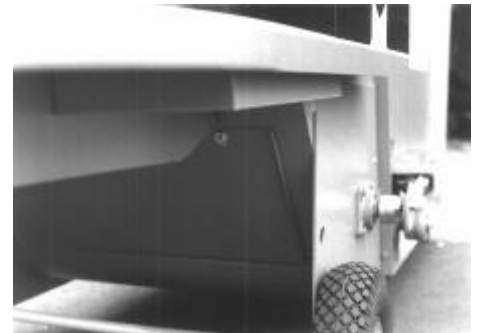
### **c) Soil feeding and emptying the machine**

The soil hopper contains 1000 litres and can be fed in various ways without disturbing or interrupting the workflow at the machine.

Feeding can take place:

- manually by means of a shovel
- using a wheelbarrow
- using a conveyor belt
- using a shovel loader

The remaining soil can be removed from the machine by opening the soil flap. If the soil heap gets too high in front of the soil flap, the potting machine must be pulled back a bit. Cleaning of the elevator deflection is also carried out by opening the soil flap.



### **d) Adjusting drill depth and pressure intensity of plates**

After fixing the size of the soil drill and the matching plate, drilling depth must be set according to the bale's height of the product to be potted.

Proceed as follows:

- Screw on plates to the plate rod using self-locking nuts.



- Set the drilling slide to the lowest position.



- Apply a suitable spindle on the drill and slide them on the shaft of the motor then fix them with threaded pins.
- Set the required drilling depth roughly by using an empty pot.



- Drilling depth may be adjusted by shifting the rod in the sleeve and fixing them to each other with the threaded pin.
- Then make a drilling test with pots filled up with soil and check the drilling depth, readjust if necessary.



- When using soft plastic, grided or Jiffy pots, pressing force of the press plate shall be set by using clamping pieces.

### e) Adjusting the speed of operation (hourly output)

In standard construction of the potting machine, a filling capacity of 1000-2800 pots per hour may be reached by using an **infinitely variable drive**.

The infinitely variable drive unit may only be set when the machine is switched on by turning the potentiometer according to the scale from 1 to 10 to slower or faster.

For initial work with the potting machine, we recommend starting with a low hourly output until all workers have complete command of individual work steps.



### f) Adjusting the soil amount

Soil is supplied from the soil hopper to the elevator by means of a continuous conveyor belt which runs on carrier rollers in the soil hopper.

The speed of the belt may be increased or decreased by rotating the star grip as marked.

Before setting is started, the clamping lever of the spindle of the star grip shall be loosened and when the required speed is set, it shall be tightened.

Thus, the shovels of the constantly running elevator carry larger or smaller quantity of soil.

When the quantity of soil is set, always make a turn or two and then wait until 40-50 pots are filled. You should only make further corrections after this time has elapsed.



#### **Please note:**

Make sure that only the amount of soil required is set, this relieves the elevator drive and ensures a longer service life.

**g) Setting compactness of the soil (in the pot)**

A special feature of Mayer potting machines is the fine regulation of soil density in the pots. This depends on:

1. Drilling in or out the soil mixture
2. Setting the filling quantity by setting brush
3. Type and size of pressing plate

**Comment to 1:**

Depending on the relevant setting of the drill motor's reverse switch, you can operate a clockwise or counterclockwise rotation of the drill.

When it rotates clockwise, it drills out the soil, and when it rotates counterclockwise, it drills in the soil (compacts). The cross shaped plate of the standard drill tip distributes the soil in the pot evenly. The standard drill may be used in both directions.

Special drills may only be used for drilling out. The flat plate of the drill tip and the deeper groove are especially favourable for thick soil mixtures, coniferous soil and for loose filling.

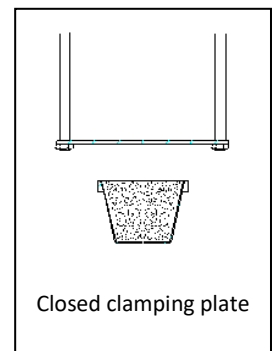
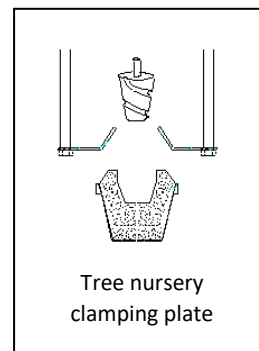
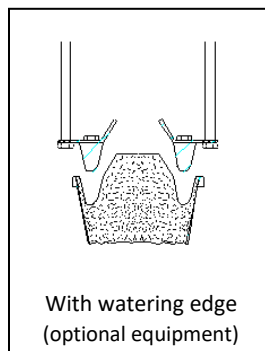
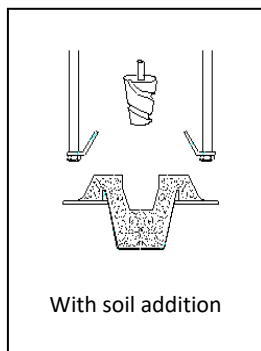
**Comment to 2:**

The height adjustable pot stripper enables a regulation of filling quantity. Larger quantity of soil results in firm filling, while soil stripped at the edge of the pot results in loose filling.

**Comment to 3:**

Function of the pressing plate is to hold down the pot and the remaining soil during the drilling process. When the gap is small between the outer diameter of the drill and hole diameter of the pressing plate (e.g., 6 cm dia. drill with pressing plate hole dia. of 7 cm), then only a small quantity of soil can be drilled out and the filled soil is more compact. When this gap is larger (e.g., 6 cm dia. drill with pressing plate hole dia. of 9 cm), larger quantity of soil can be drilled out and the filled soil is less compact. The pressing plate with soil addition leaves a soil heap on the pot which may be compacted by repressing. Special accessories shall be used for special tasks and for special pots.

**Various designs of plates:**



## 2 Shutting down the machine

There are two ways to switch off the machine.

a)

In normal case by switching „Stop” on the “Start-Stop Switch” mounted on the swinging cable.

In this case the machine may be restarted by pressing switch “Start”.

b)

In case of emergency, the machine can be switched off by the “**Emergency Stop**” switch.

If the “Emergency Stop” is pressed, the machine stops immediately and remains stopped. After “Emergency Stop” is eliminated, the machine can be started by pressing push button “Start”.

## 3 Measures prior to and after a longer shutdown

### a) Before a long shutdown

- Clean carefully the machine.
- Grease and oil certain parts of the machine according to maintenance plan.
- Protect the machine against dirt and moisture (it should be covered)
- Disconnect the machine from power lines (electricity, compressed air)

### b) After a long shutdown

- Grease and oil certain parts of the machine according to maintenance plan.
- Visually check the machine.
- Connect the machine to required energy sources.
- Start the machine as described in section „Initial start-up”.

## 7 Malfunctions

To prevent damages to the machine as well as injuries while eliminating malfunctions at the machine, it is absolutely necessary to comply with the following points:

- Eliminate a malfunction only if you have the qualification specified to do so.
- Also read section "General Safety Instructions".
- When eliminating malfunctions at the machine, following special dangers have to be expected:
- Accidentally switching on the power sources can result in injuries to people as well as damage to the machine.
- In case of unprotected manual operation, there is an increased risk of injuries through bruising.

### 1 Behaviour in case of malfunctions

If any malfunctions occur while the machine is in operation, proceed as follows:

1. Stop the machine either using the STOP button or EMERGENCY CUT-OFF, depending on the situation.
2. For personnel or machine security, unplug the machine from the energy supply immediately.
3. Troubleshooting > If necessary, then by qualified personnel
4. Error correction > If necessary, then by qualified personnel
3. Starting up the machine

## 2 Possible malfunctions and trouble shooting

### a) Mechanical malfunctions

Failure/Malfunction	Cause	Trouble shooting
Noise in the elevator	Jammed stone or wooden piece	Remove cause for malfunction. Possibly by running elevator backwards (turn switch to the left to position "1" or "2")
Rotating assembly has too much clearance.	Worn shifting roll or carrier bolt	Replace shifting roll or carrier bolt.
	Chains are too loose	Retighten chains.
Uneven filling of pots	Object in elevator	Remove source of interference.
	Soiled, dirty shovel	Clean shovels.
No soil supply	Soil hopper empty	Fill hopper.
	Broken return spring at switch neutral gear	Replace spring.
	Free wheel hub is defective	Replace free wheel hub
Pot supply interrupted	Incorrect settings	Check settings.

### b) Electrical malfunctions

Failure/Malfunction	Cause	Trouble shooting
Motor protection switches off	Fault in electronics	Electronic parts shall be checked by a skilled electrician
	Mechanic overload	Remove foreign material causing overload

## 8 Maintenance

When carrying out maintenance for the machine, it is essential to comply with the following safety instructions. Doing so will prevent injuries to people, damage to the machine and other damage to property as well as the environment.

- **Cleaning, lubricating and maintenance work may only be carried out by authorised operating personnel. The Operating Instructions must be complied with exactly.**
- Only trained electricians may ever carry out any of the work on the machine's electrical equipment.
- Switch off all power supplies and secure power supplies against being accidentally switched back on.
- Release pressure of every unit that is under pressure.
- All interventions in the control programme of the machine may only be carried out by Mayer GmbH & Co. KG.
- All un-recycled operational materials, lubricants and supplies must be disposed of in an environmentally friendly manner.
- Also read section "General Safety Instructions".

When carrying out maintenance on the machine, the please note following special dangers:

- Installing incorrect spare parts or worn parts can cause severe damage to the machine.
- Accidentally switching on the power source can result in severe bodily injuries and damage to the machine.
- There is a danger of getting injured on sharp-edged machine parts/tools.
- Leaked lubricants or fertilisers can cause burns if they in direct contact with the skin.
- In case of unprotected manual operation, there is an increased risk of injuries through bruising.

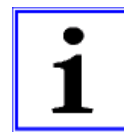


## 1 General notes

**We recommend an annual inspection of the entire machine by our customer service.**

**For service or repair work, order our customer service at one of our service workshops.**

**Spare parts have to meet the technical requirements of the machine's manufacturer. This is guaranteed with original spare parts from Mayer.**



## 2 Inspection and preventative maintenance

### 2.1 Elevator chains

Chains may be retensioned by means of tensioning bearings located on the sides of the elevator. Check regularly if the chains are tensioned properly. When the chain is too loose, the plates may jam with edge of the housing.

Overtensioned chain requires an excess of driving power and causes too quick wear. When the chains are retensioned, both of them shall have the same tightness. With the soil hopper being completely empty and the elevator being at the height of the pot holder, normal tension is available when the chain can be moved about 3-4 cm by hand.



**Grease elevator chain prior to a longer shutdown!**



## 2.2 Conveyor belt

**Generally the conveyor belt requires no retensioning.**

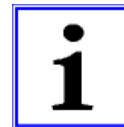


If the belt need readjustment caused e.g. by remedy works carried out on the machine, proceed as follows:



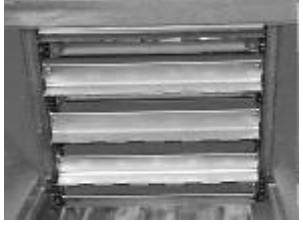


Tensioning of the belt may be adjusted by means of tensioning nuts located at the end of the soil hopper. Retensioning evenly is particularly important so that the belt does not run on one side.

It must be ensured the groove of the driving and deflecting roller of the conveyer belt is not filled up with soil. Regularly clean the grooves.

**Follow maintenance schedule.**



### 3 Maintenance schedule

Description	Interval	
Grease groove of controller drum	quarterly	
Grease holding-down bar at drill	monthly	
Clean and grease elevator chain, e.g. with WD-40 or Caramba	monthly	
Grease the brake (grease nipples on the back side of turntable)	quarterly	
Grease all bearings fitted with grease nipples	yearly	

## 9 Part list

## **10 Circuit diagrams for electric and pneumatic system**

## 11 Guarantee

### **Horticultural machinery and special machinery**

We will accept liability for faults in the supplied goods and for any failure to provide features for the existence of which an express assurance had been given. In such a case we undertake – to the exclusion of all further claims – to improve or re-supply (at our discretion) free of charge any parts which have revealed themselves to be unserviceable or subject to a not inconsiderable impairment in serviceability due to faults in their material, manufacturing process or design within twelve months (or within six months for multi-shift operation) of their arrival on the customer's premises. For parts which we do not manufacture ourselves (e.g. motors), we can only accept liability for the same scope and length of time which the subcontractor has accorded to us.

Any replaced parts shall become our own property. No warranty claims can be accepted if the fault occurs as a result of the customer having mistreated or neglected the products delivered by us, made modifications or undertaken repairs incorrectly or without our prior approval, or had third parties undertake such work.

The customer's entitlement to assert claims due to faults shall in all cases lapse six months following a complaint made within the required time period, however no sooner than the end of the compulsory warranty period. We are not responsible for correcting faults unless the customer has fulfilled its obligations due to us up to the point when the fault became apparent.



## **Changes in the design and shape of horticultural machinery and equipment**

We reserve the right to make changes in design and shape, in particular with regard to deviations from the drawings and descriptions etc. during the delivery period, provided that the purchased object is not thereby significantly altered, rendered less effective or reduced in value and the customer can reasonably be expected to accept the modifications.

**You have chosen to purchase a product of true quality.**

**We wish you every success with your product.**

**We would be most grateful if you would recommend our products to others.**

**Thank you.**

**Your MAYER TEAM**

