

HANDLING

THIN- AND MEDIUM-WALLED

DRIPPERLINES

LAYING, INSERTION, RELEASE/EXTRACTION AND RECOILING

HANDBOOK

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NOTE

All the drawings in this document are for illustration purpose only. The actual product details and infrastructure condition may differ in any actual application.



FOREIGN LANGUAGES

In the event that you are reading this manual in a language other than the English language, you acknowledge and agree that the English language version shall prevail in case of inconsistency or contradiction in interpretation or translation.

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USE OF SYMBOLS

The symbols used in this manual refer to the following:



WARNING

The following text contains instructions aimed at preventing bodily injury or direct damage to the crop, the dripperlines and/or the infrastructure.



CAUTION

The following text contains instructions aimed at preventing unwanted system operation, installation or conditions that, if not followed, might void the warranty.



ATTENTION

The following text contains instructions aimed at enhancing the efficiency of usage of the instructions in the manual.



NOTE

The following text contains instructions aimed at emphasizing certain aspects of the operation of the system or installation.



SAFETY FOOTWEAR

The following text contains instructions aimed at preventing foot injury.



TIP

The following text provides clarification, tips or useful information.

INTRODUCTION



CAUTION

Read the safety instructions below before performing any process in this handbook.

Aim of this document

The aim of this handbook is to provide entry-level knowhow on handling thin- and medium-walled dripperlines.

The processes are illustrated in a concise and comprehensible manner to guide the user in easy implementation of the following tasks:

- Laying dripperlines in above-ground applications;
- Inserting dripperlines in sub-soil (SDI) applications;
- Releasing dripperlines in above-ground applications;
- Extracting dripperlines in sub-soil (SDI) applications;
- Recoiling dripperlines for reuse;
- Recoiling dripperlines for recycling.

Many useful tips are offered to the user for easier and more cost-effective performance of various tasks, such as:

- Making a home-made dripperline laying device;
- Making a dedicated end-of-dripperline holding spike; and many others.

In addition, a variety of innovative, practical accessories, available from Netafim™, are presented:

- Reusable plastic drums for recoiling dripperlines for reuse
- Insertion shank and roller box
- Integral insertion tube and roller box (**New**)
- Dedicated connectors and end-of-line accessories; and more.

And finally, the handbook includes an essential guide for preventing sunburn on dripperlines laid under transparent plastic sheets in mulch bed applications.

Great effort has been invested in making this handbook practical and easy to use, in order to provide our clients with an enjoyable and useful reading experience.

Safety

All local safety regulations must be applied when installing, operating, maintaining and troubleshooting the Netafim™ drip irrigation system and its components.



WARNING

In an agricultural environment - always wear protective footwear and appropriate clothing.



CAUTION

When opening or closing any manual valve, always do so gradually, to prevent damage to the system by water hammer.

DRIPPERLINE CONNECTION

Connecting the dripperlines to the distribution line

There are many types of dripperline connections to the distribution line. The most common types are:

1. The distribution line is inserted in the soil and the dripperlines are connected to the distribution line using risers.

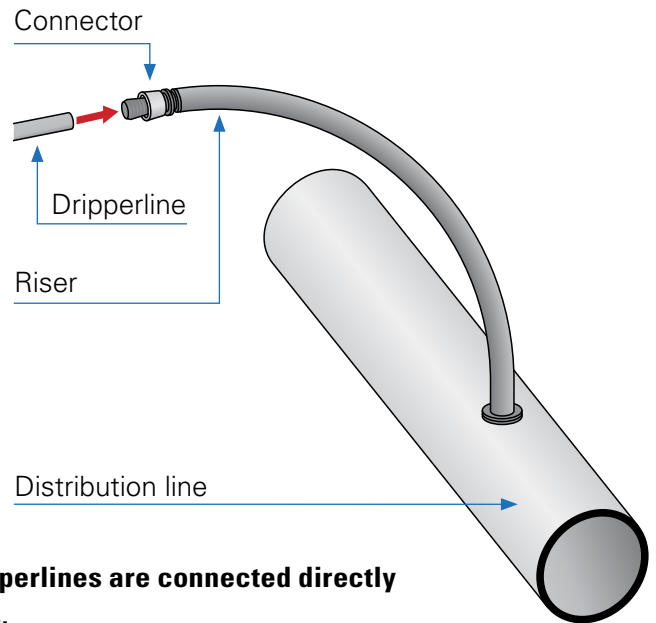


NOTE

To avoid kinks, the minimum recommended thickness of the riser wall is 1.0 mm. Preferably use Netafim™ specially designed Qflex™ piping.

Connect the dripperline to the risers with a dedicated connector.

Disconnect the dripperline from the connector to the risers, leaving the connector connected to the riser.

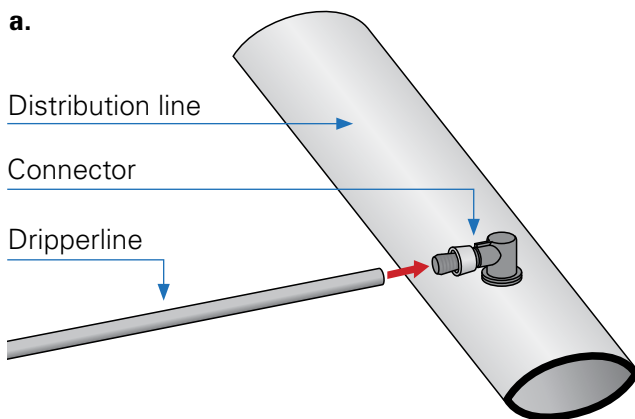


2. The distribution line is laid on the soil and the dripperlines are connected directly to the distribution line using dedicated connectors.

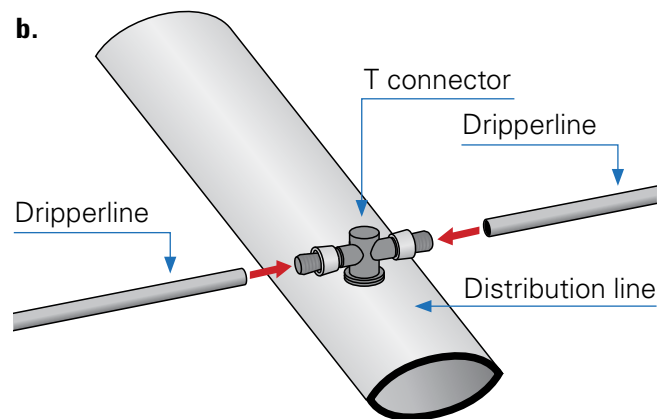
Connect the dripperline to the distribution line with a dedicated connector.

Disconnect the dripperline from the connector, leaving the connector connected to the distribution line.

a.



b.



After laying/inserting the dripperlines

Immediately after completing dripperline laying or insertion, connect all the dripperlines to the distribution line.



ATTENTION

To prevent penetration of dirt and/or small animals/insects, do not leave the dripperline ends open in the field.

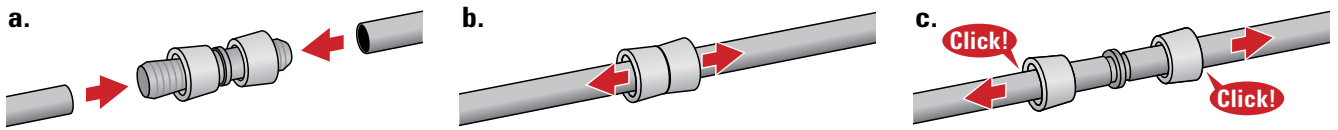
Before dripperline extraction or release

Before extracting or releasing a dripperline, disconnect all the dripperlines from the distribution line.

DRIPPERLINE CONNECTION

Dripperline-to-dripperline connection

Connect each dripperline to the previous one using an appropriate pipe connector.



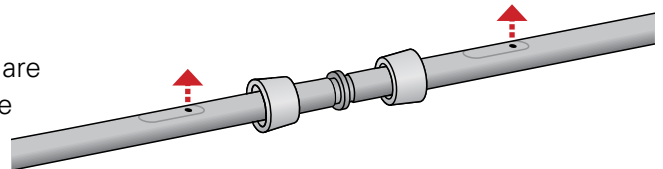
CAUTION

Make sure the drippers of the new dripperline are facing the same direction as the drippers of the previous one.



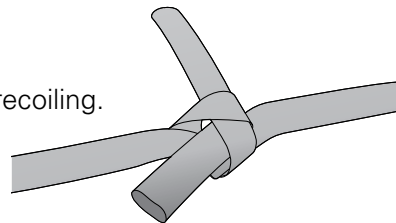
NOTE

When recoiling the dripperlines at the end of the season, pipe connectors can be detached by reversing the steps above, and kept for reuse.



When recoiling for recycling only

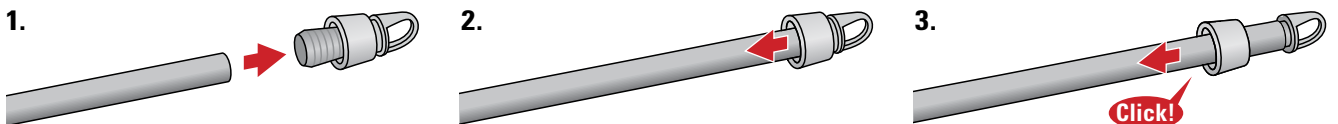
Tie each dripperline to the previous one and continue recoiling.



Closing the end of a dripperline

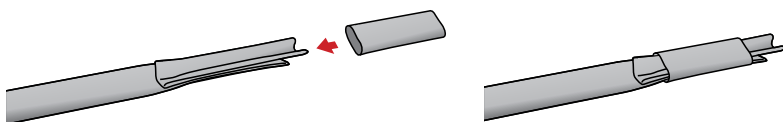
Netafim™ offers various accessories for closing the ends of dripperlines. Two basic methods for closing the ends of dripperlines are shown below:

End-of-dripperline closing accessory



Z-folded dripperline end

- 1 Cut a 5 cm (2") sleeve from the end of the dripperline.
- 2 Fold the end of the dripperline in the shape of a "z" and slip the sleeve over the end.



See all the types of pipe connectors and pipe accessories in the Connectors - Product Catalog and further instructions in the Drip Irrigation Handbook at <http://www.netafim.com/irrigation-products-technical-materials>.

PREPARATIONS

Unloading the pallets

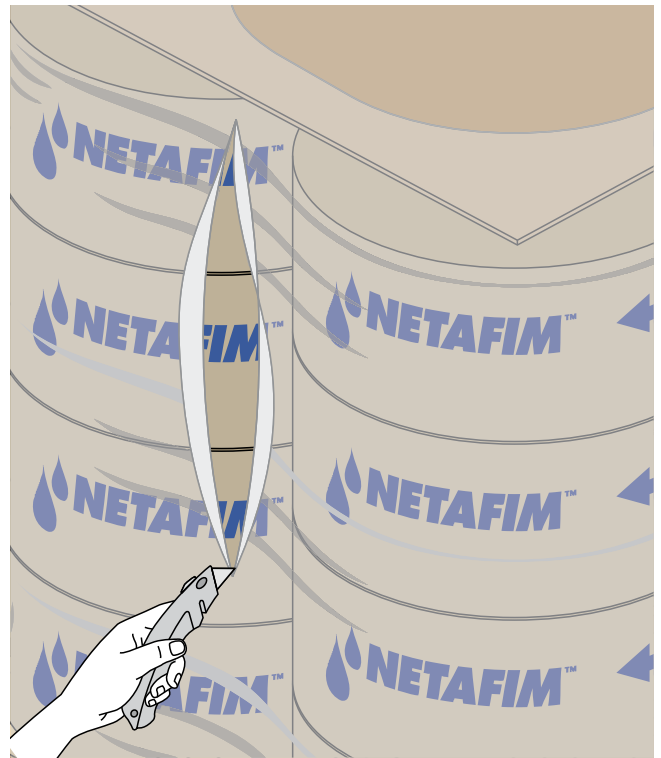
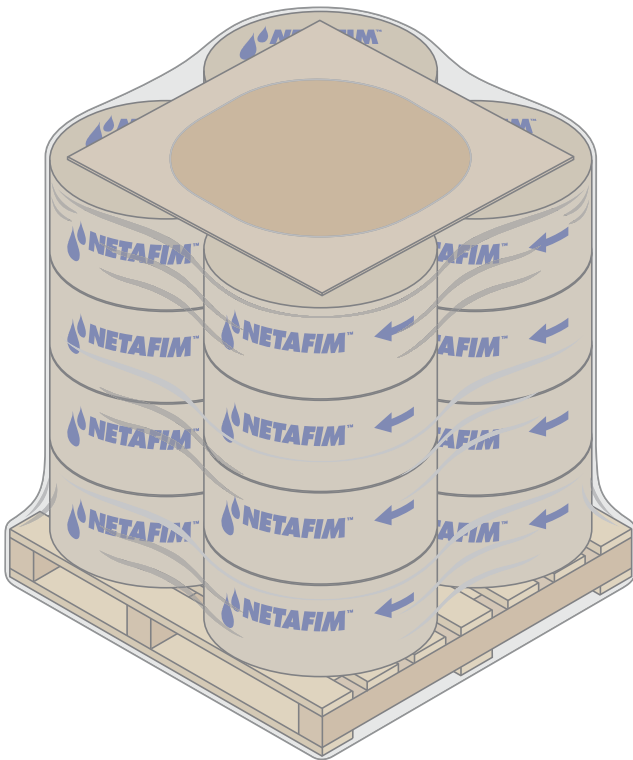


CAUTION

When using a cutting tool, take care not to damage the dripperline.

Pallet opening

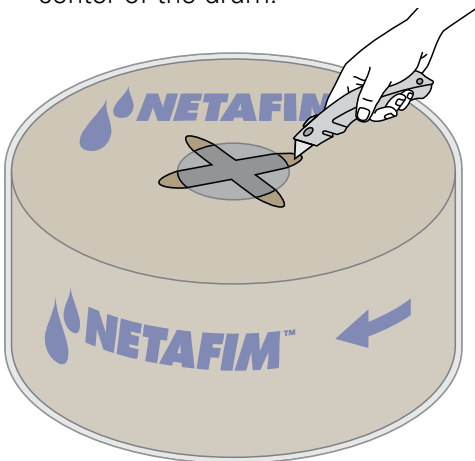
- 1 Cut the stretch wrap in the gap between the drums.



- 2 Remove the stretch wrap and the top cardboard.

Opening the dripperline drum

- 1 Carefully cut out a cross in the center of the drum.



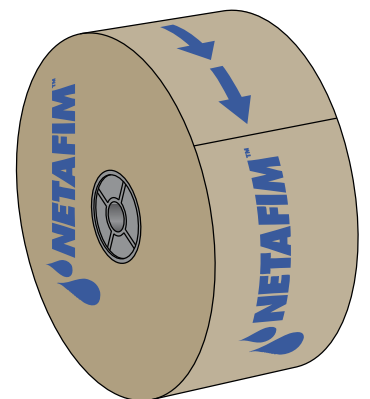
NOTE

Note the direction of the arrows on the surrounding corrugated cardboard. It indicates the direction in which the drum should be mounted on the coil holder of the device/machine so that the dripperline unwinds correctly.



NOTE

Each dripperline drum is labeled with a batch number identifying the dripperline. Keep the batch numbers for future reference.



- 2 Remove the stretch wrap from the drum.

MANUAL LAYING, EXTRACTION AND RECOILING



TIP

Home-made dripperline-laying device

It is easy to make a home-made dripperline-laying device.

Dimensions

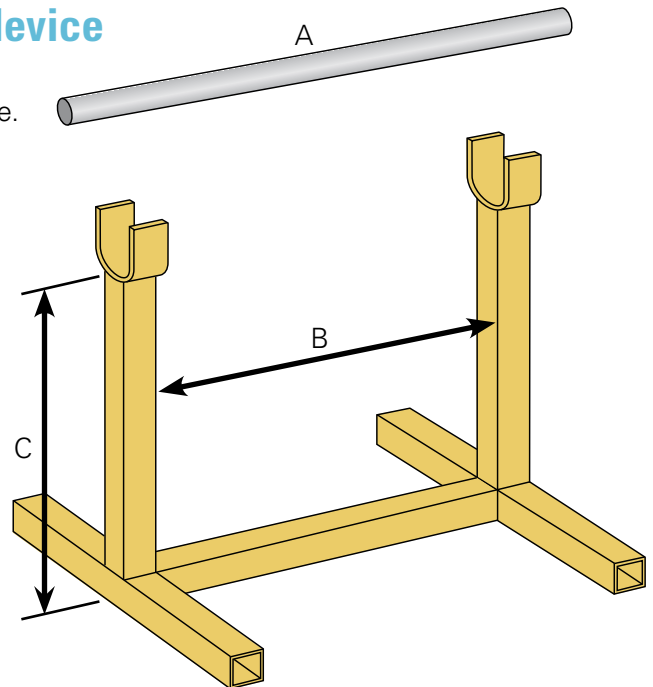
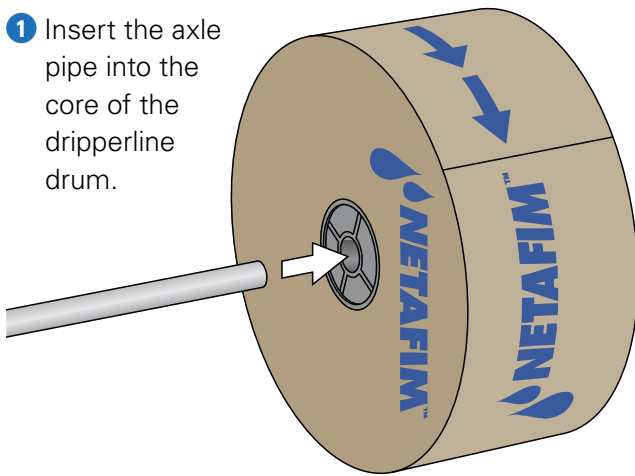
A. Axle pipe - \varnothing 38 mm, 70 cm length min.

B. Inside width - 40 cm

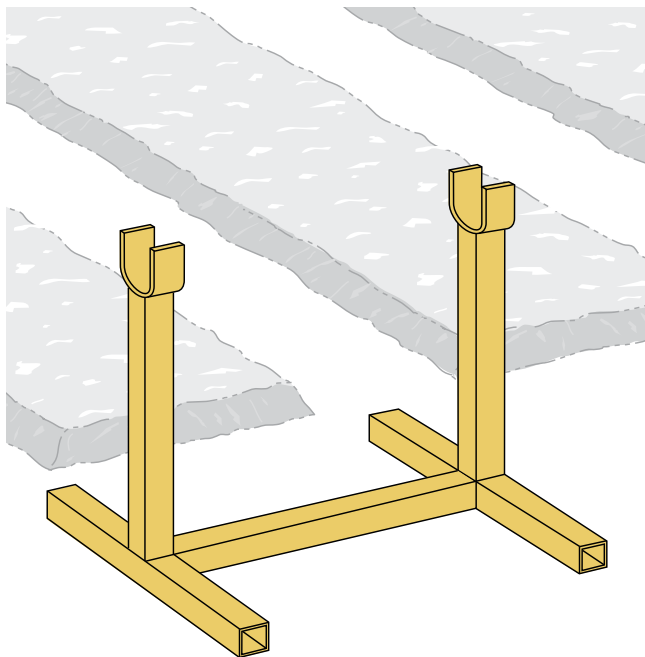
C. Height of axle pipe above ground - 40 cm

Using the dripperline-laying device

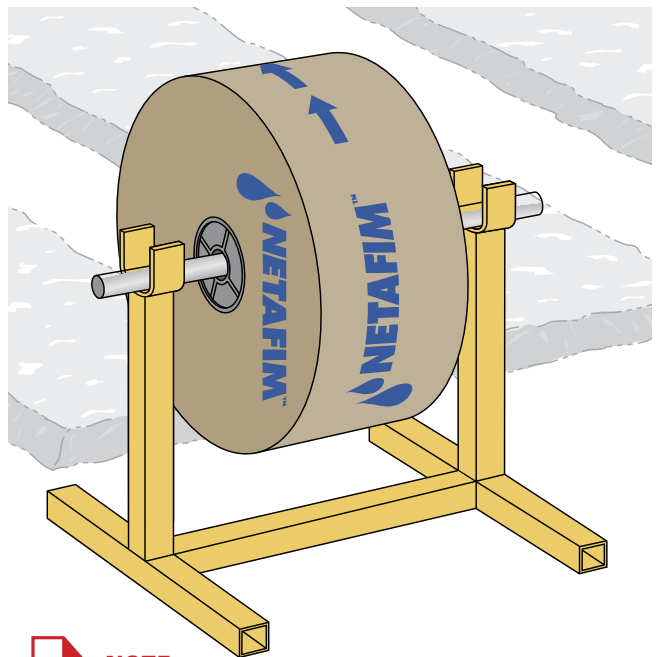
- 1 Insert the axle pipe into the core of the dripperline drum.



- 2 Place the device at the end of the bed.



- 3 Load the drum on the device.



NOTE

Make sure that the direction of the arrows on the surrounding corrugated cardboard matches the laying direction.

MANUAL LAYING, EXTRACTION AND RECOILING

- 4 Manually remove the surrounding corrugated cardboard from the drum.

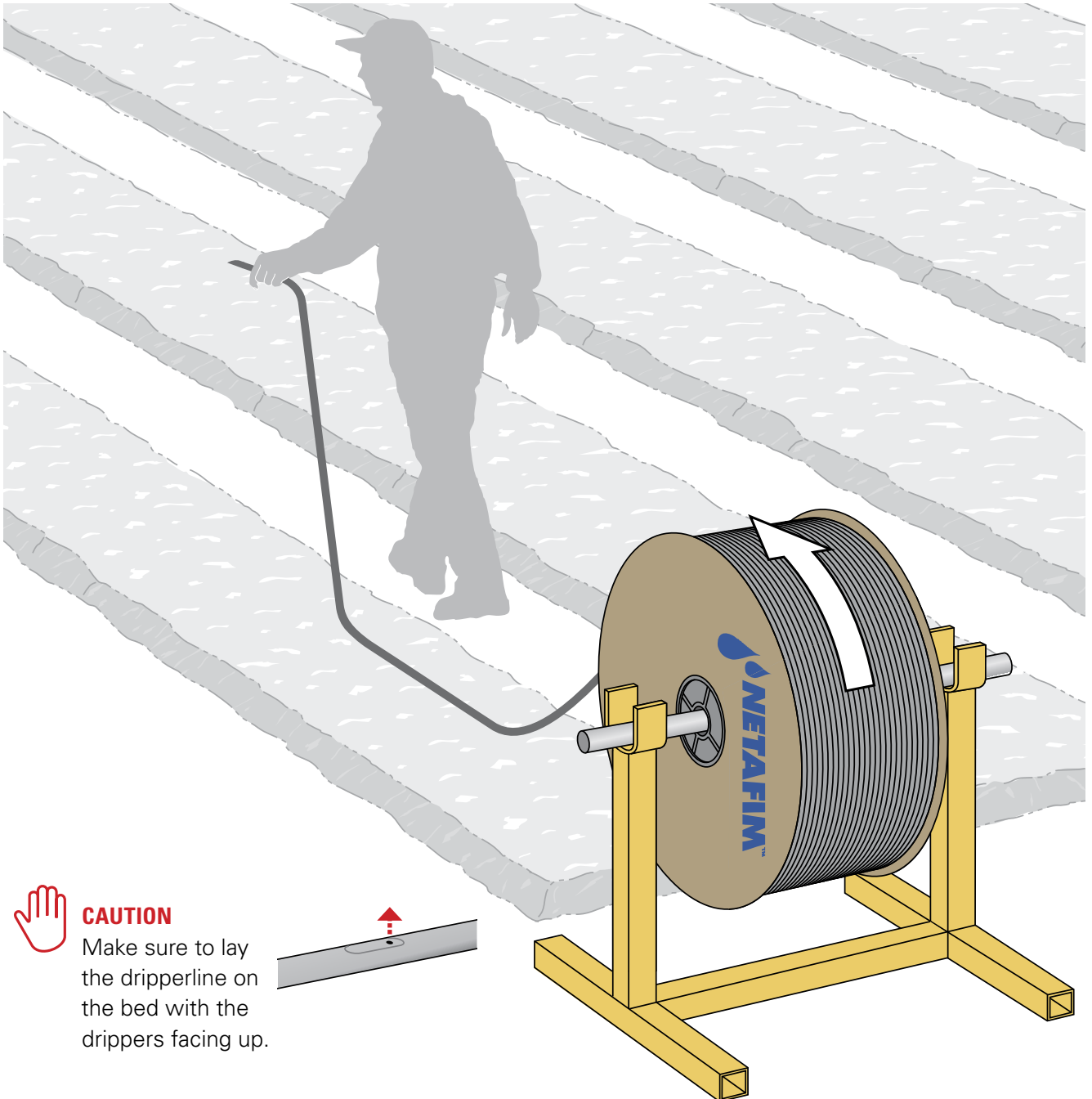


CAUTION

To avoid damaging the dripperline, do not use cutting tools.

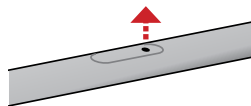


- 5 Start walking, pulling the dripperline end along the bed.



CAUTION

Make sure to lay the dripperline on the bed with the drippers facing up.



When there is no more dripperline on the drum:

- 1 Replace the empty drum with a full one.

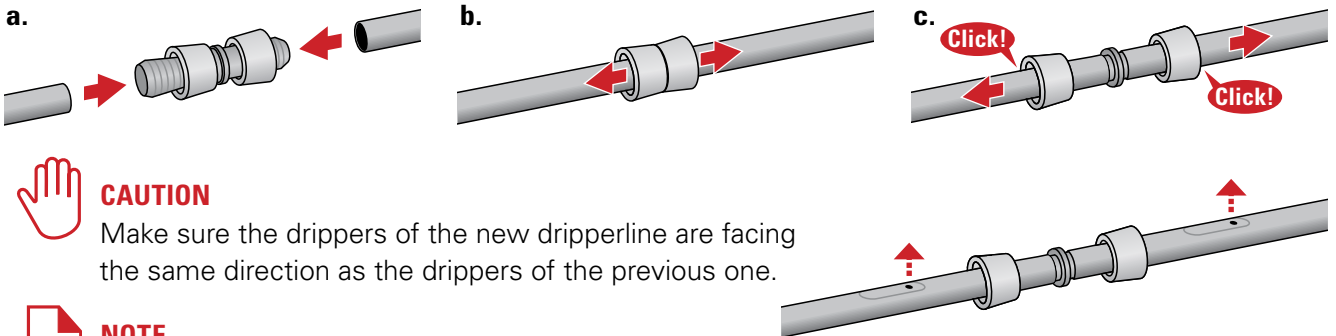


NOTE

Make sure that the direction of the arrows on the surrounding corrugated cardboard matches the laying direction.

MANUAL LAYING, EXTRACTION AND RECOILING

- 2 Connect the next dripperline to the previous one using an appropriate pipe connector and continue laying (See all the types of pipe connectors in the Connectors - Product Catalog at <http://www.netafim.com/irrigation-products-technical-materials>).



CAUTION

Make sure the drippers of the new dripperline are facing the same direction as the drippers of the previous one.



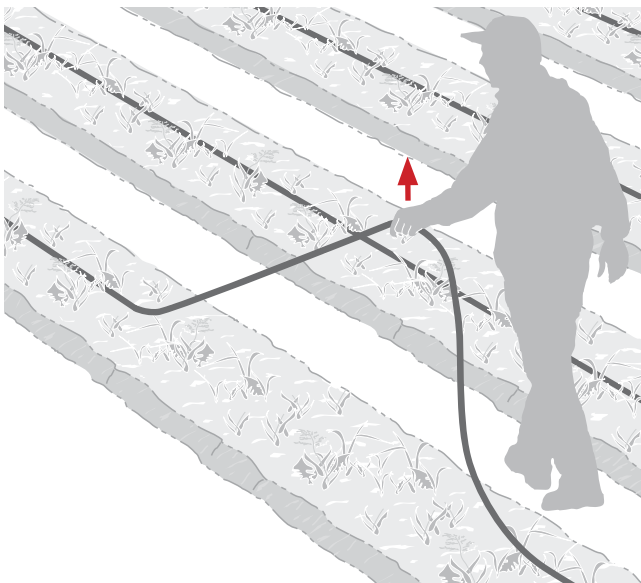
NOTE

The last 3 meters (10 feet) of dripperline unwound from a drum might appear to be crumpled, but it only looks that way. Once the dripperline is full of water under working pressure, it will appear uncrumpled.

Manual extraction/release of dripperline for recycling

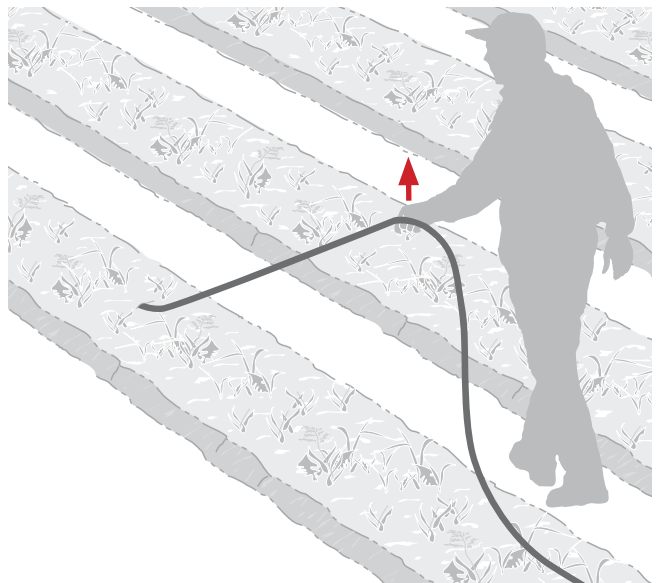
For dripperlines laid on the soil

- 1 Manually pull up and release dripperlines from the weeds.



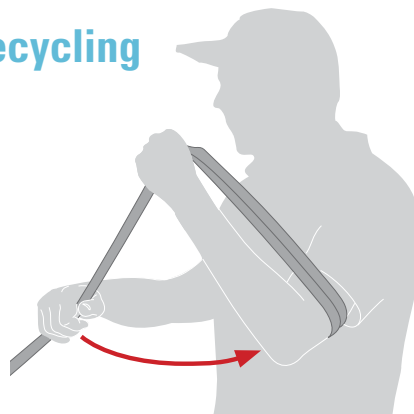
For dripperlines inserted in the soil

- 1 Manually pull up and extract the dripperlines from the soil.



Manual recoiling of dripperline for recycling

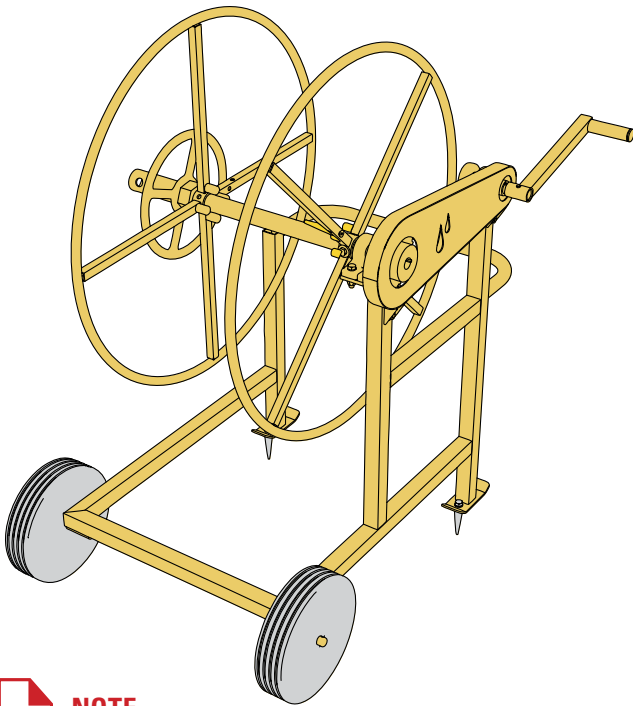
- 1 Manually recoil the dripperline on your arm.



MANUAL LAYING, EXTRACTION AND RECOILING

Manual recoiling device

Netafim™ catalog no. 77200-001000

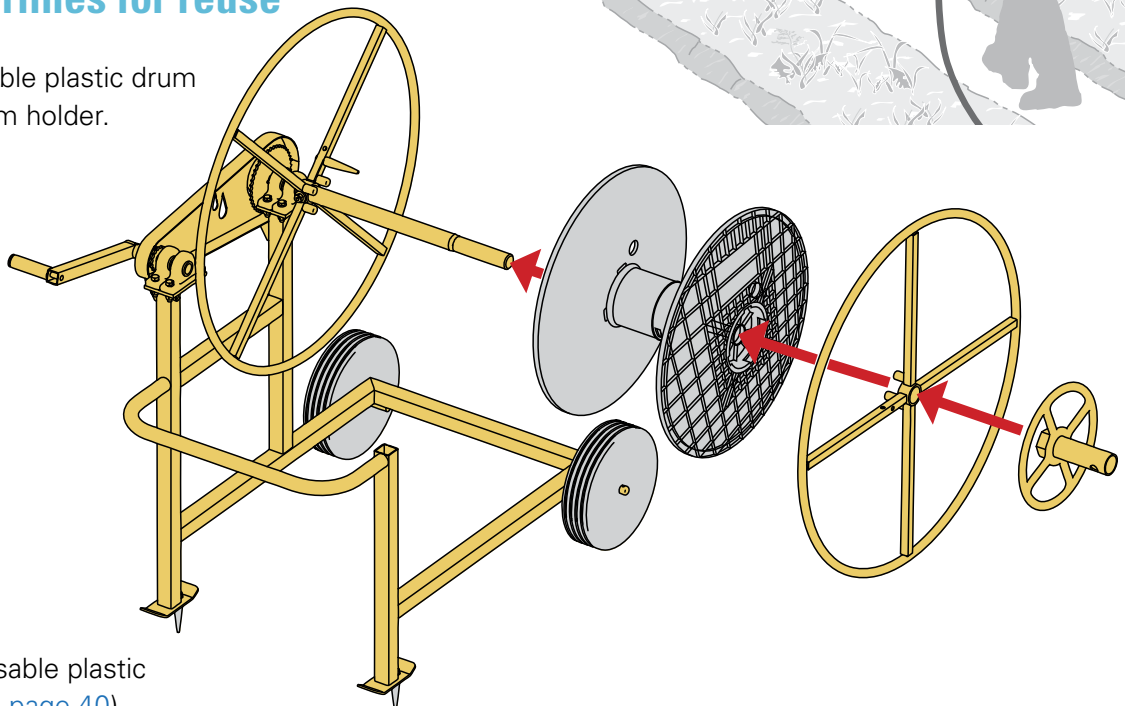


NOTE

The power transmission chain should be kept lubricated at all time. Lubricate the chain before each use and before storage of the device.

Using a manual recoiling device to recoil dripperlines for reuse

- 1 Load a reusable plastic drum onto the drum holder.



NOTE

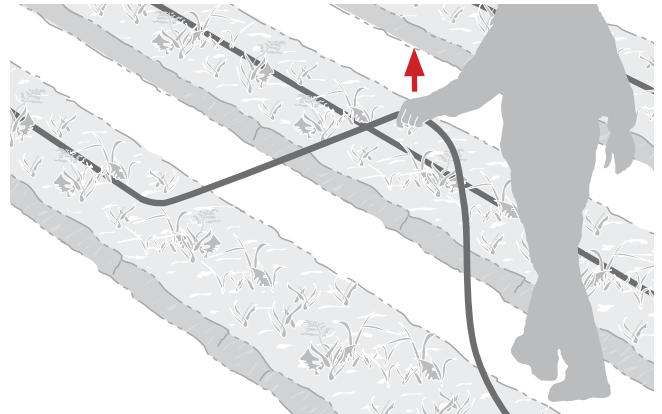
Use a reusable plastic drum (see [page 40](#)).

Dripperline extraction/release

- 1 Before recoiling, extract/release the dripperlines.

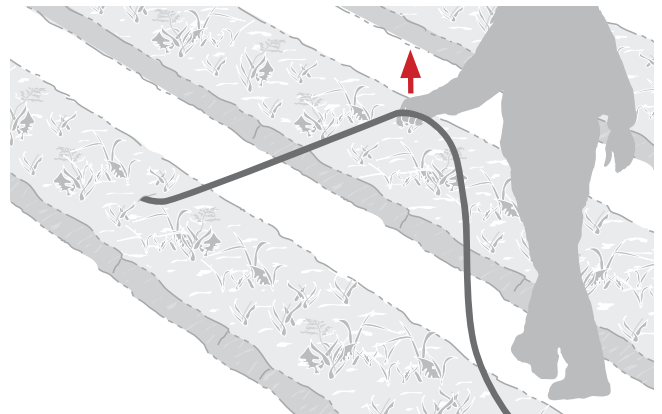
For dripperlines laid on the soil

Manually pull up and release dripperlines from the weeds.



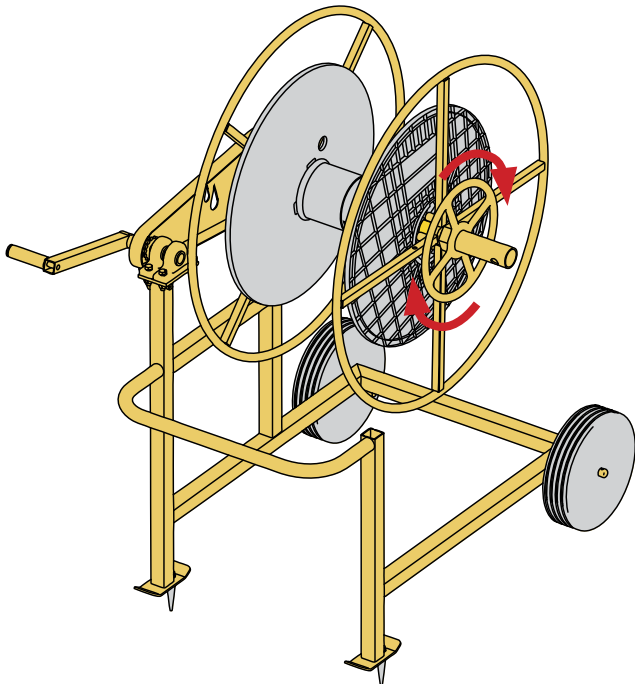
For dripperlines inserted in the soil

Manually pull up and extract the dripperlines from the soil.

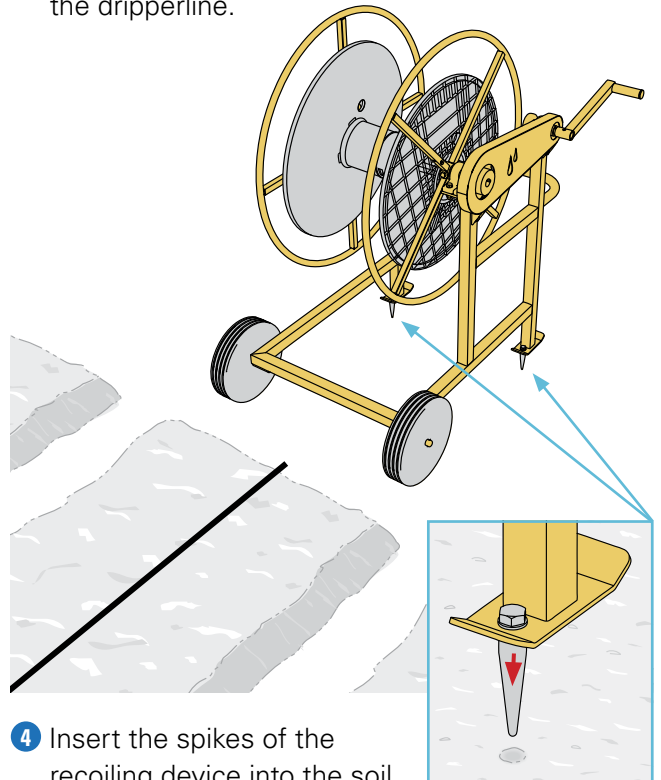


MANUAL LAYING, EXTRACTION AND RECOILING

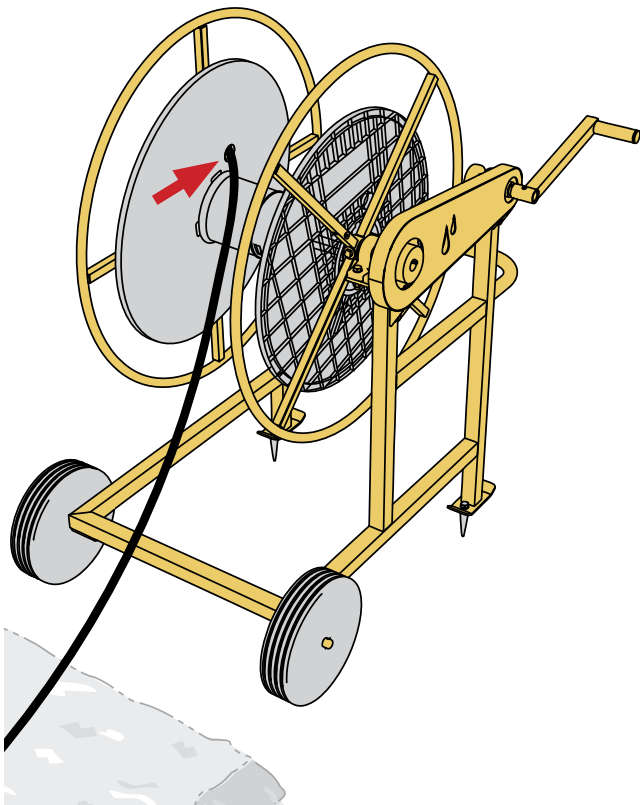
- 2 Fasten the locking nut on the drum holder.



- 3 Place the recoiling device opposite the end of the dripperline.



- 5 Insert the end of the dripperline into the hole next to the core of the plastic drum.



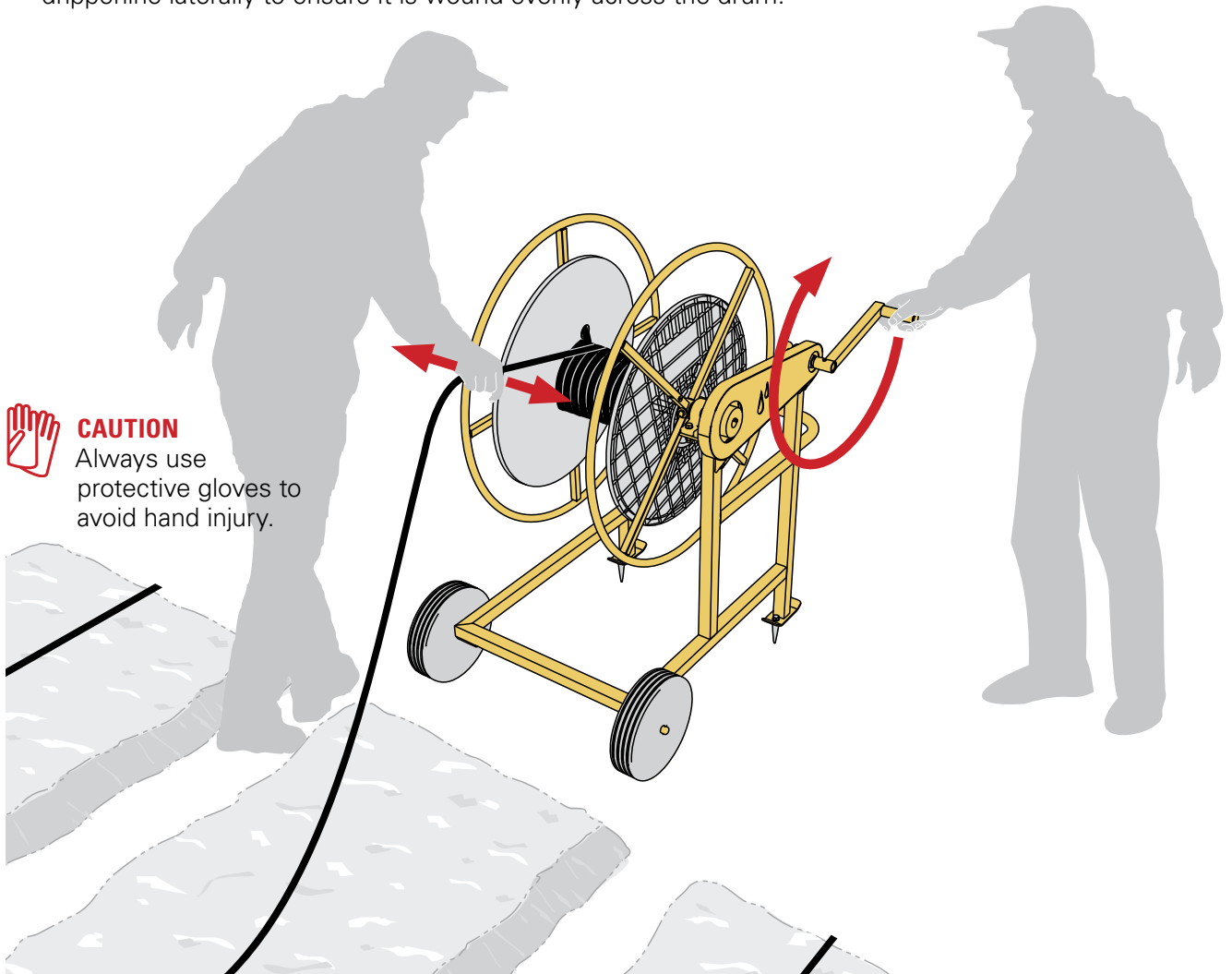
ATTENTION

When recoiling a dripperline for reuse, make sure that the dripperline is recoiled on the drum with the drippers facing out.

MANUAL LAYING, EXTRACTION AND RECOILING

- 6 Recoil until the drum is completely full.

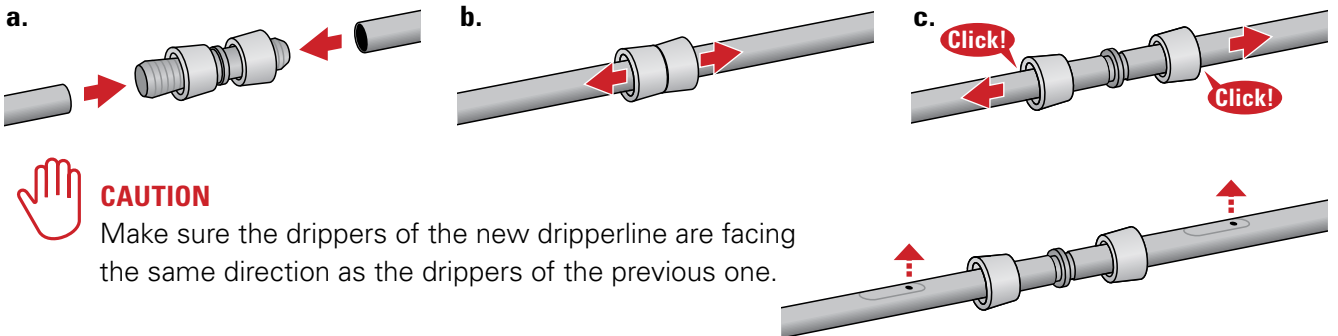
When recoiling a dripperline with a manual recoiling device, another worker should move the recoiled dripperline laterally to ensure it is wound evenly across the drum.



- 7 When the drum is full, unload it from the device and load an empty one to continue recoiling.

When a dripperline is completely recoiled:

- 1 Connect the next dripperline to the previous one using an appropriate pipe connector and continue recoiling (See all the types of pipe connectors in the Connectors - Product Catalog at <http://www.netafim.com/irrigation-products-technical-materials>).



MANUAL LAYING, EXTRACTION AND RECOILING

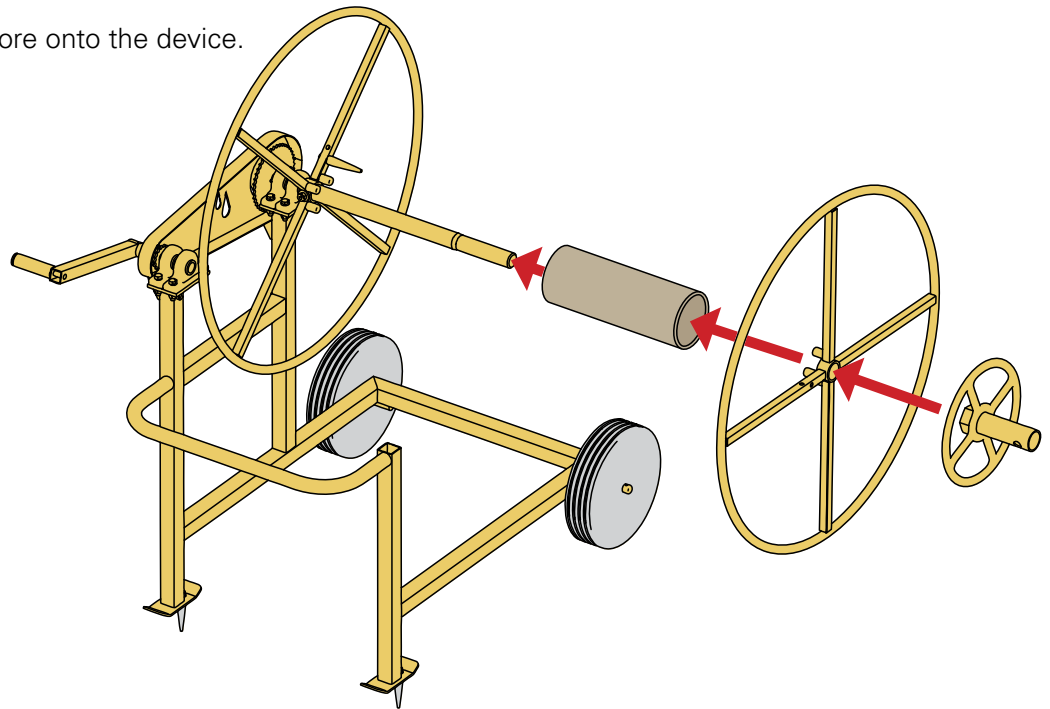
Using a manual recoiling device to recoil dripperlines for recycling



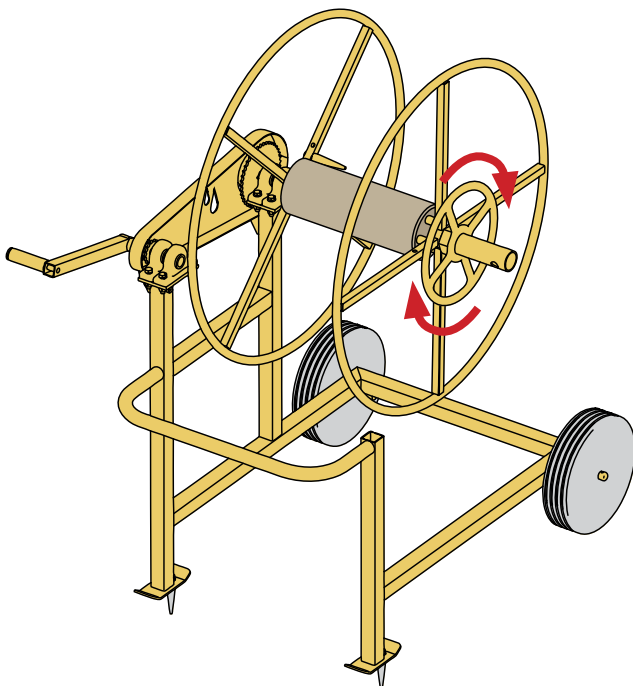
TIP

After laying or inserting dripperlines, dismantle the corrugated cardboard drums and keep their cardboard cores. They will be used for future recoiling for recycling.

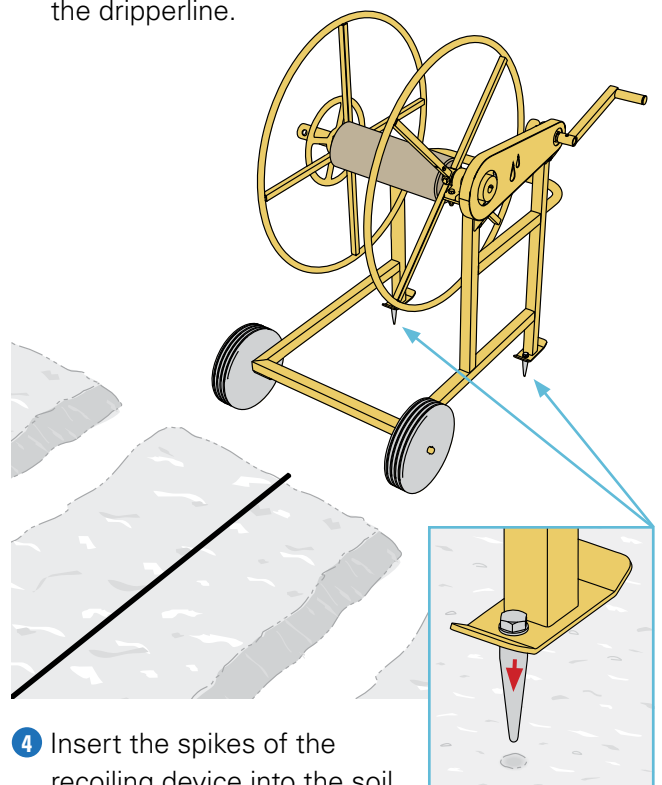
- 1 Load a cardboard core onto the device.



- 2 Fasten the locking nut on the drum holder.



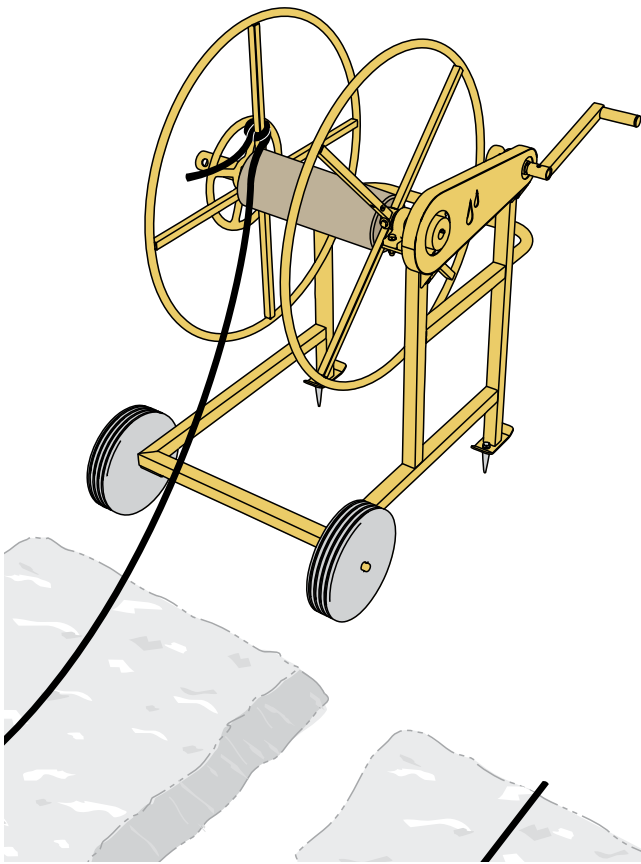
- 3 Place the recoiling device opposite the end of the dripperline.



- 4 Insert the spikes of the recoiling device into the soil.

MANUAL LAYING, EXTRACTION AND RECOILING

- 5 Tie the end of the dripperline to the reel bar.



TIP

When recoiling for recycling, it is possible to recoil more than one dripperline at once.



ATTENTION

When recoiling more than one dripperline at once, consider the force required to manually rotate the crank and take care not to tear the dripperlines.

It is not advisable to recoil more than 3 dripperlines at once.

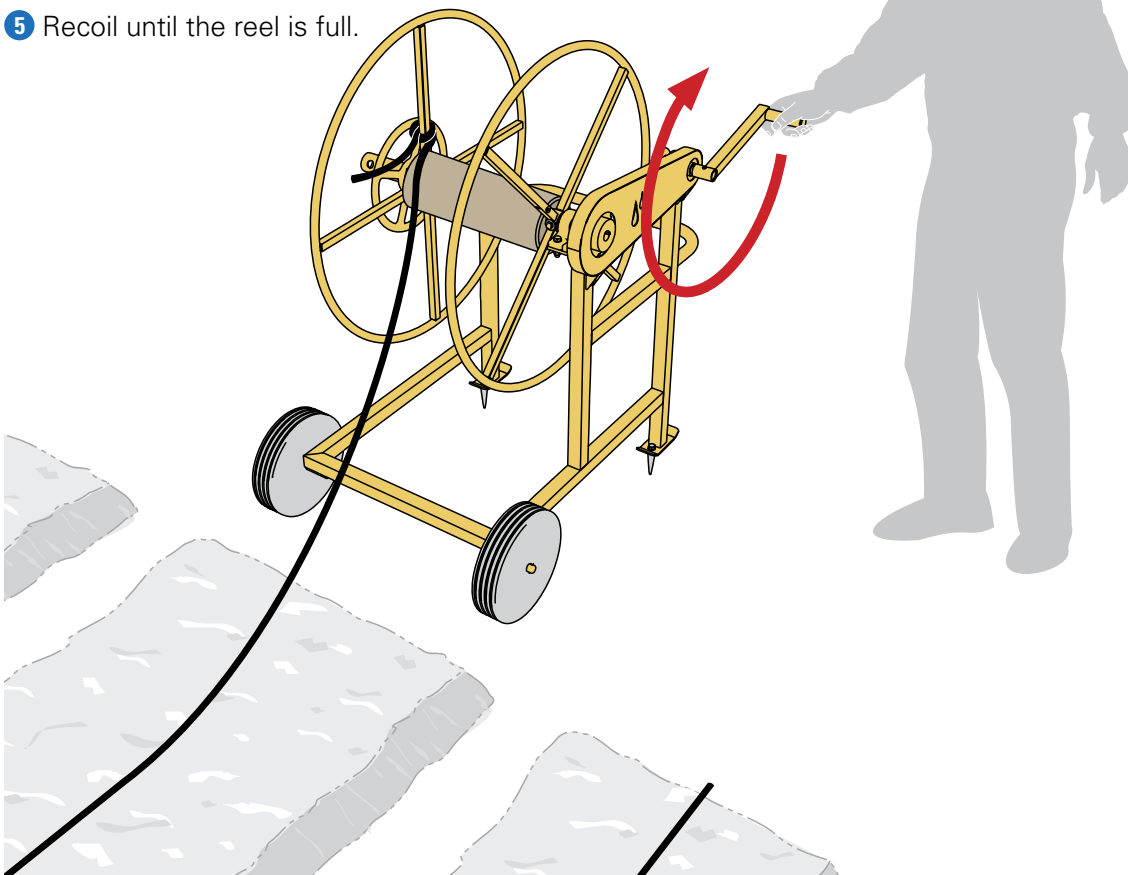
Above ground (DI):

The dripperlines should be properly released from the soil in advance.

Sub-surface (SDI):

The dripperlines should be properly extracted from the soil in advance.

- 5 Recoil until the reel is full.



MANUAL LAYING, EXTRACTION AND RECOILING

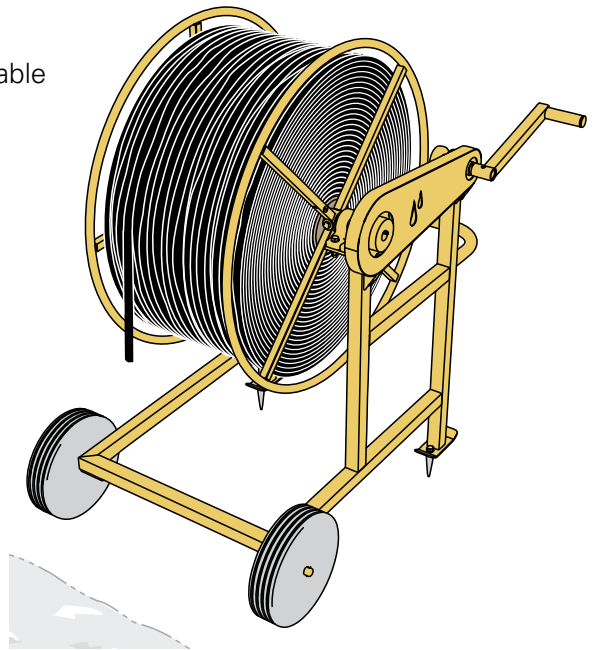
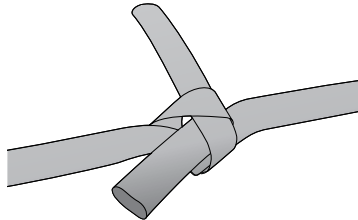


ATTENTION

Do not overfill the reel. Leave 5 cm (2 in) free to enable tying the dripperline roll before unloading it.

When a dripperline is completely recoiled:

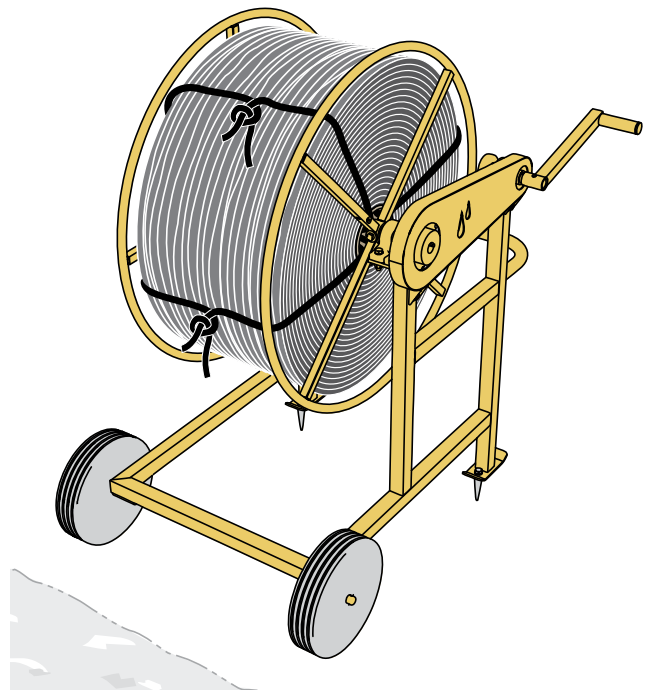
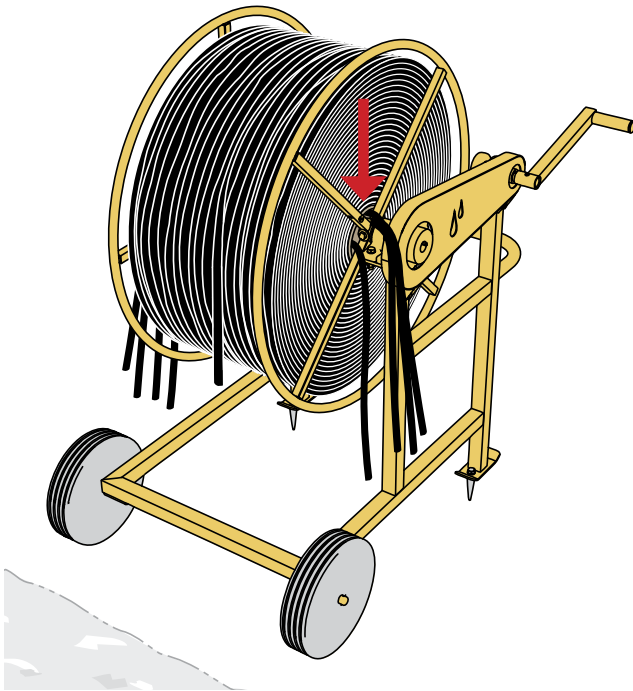
Tie the next dripperline to the previous one and continue recoiling.



When the reel is full:

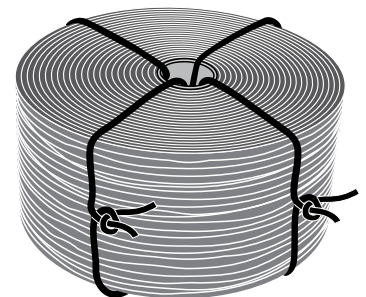
1 Thread 4 pieces of scrap dripperline, 2 m (7 feet) each, through the cardboard core.

2 Tie the 4 pieces of scrap dripperline around the dripperline roll and unload it.



ATTENTION

Make sure not to tie the pieces of scrap dripperline around any part of the device. This will prevent the unloading of the dripperline roll.

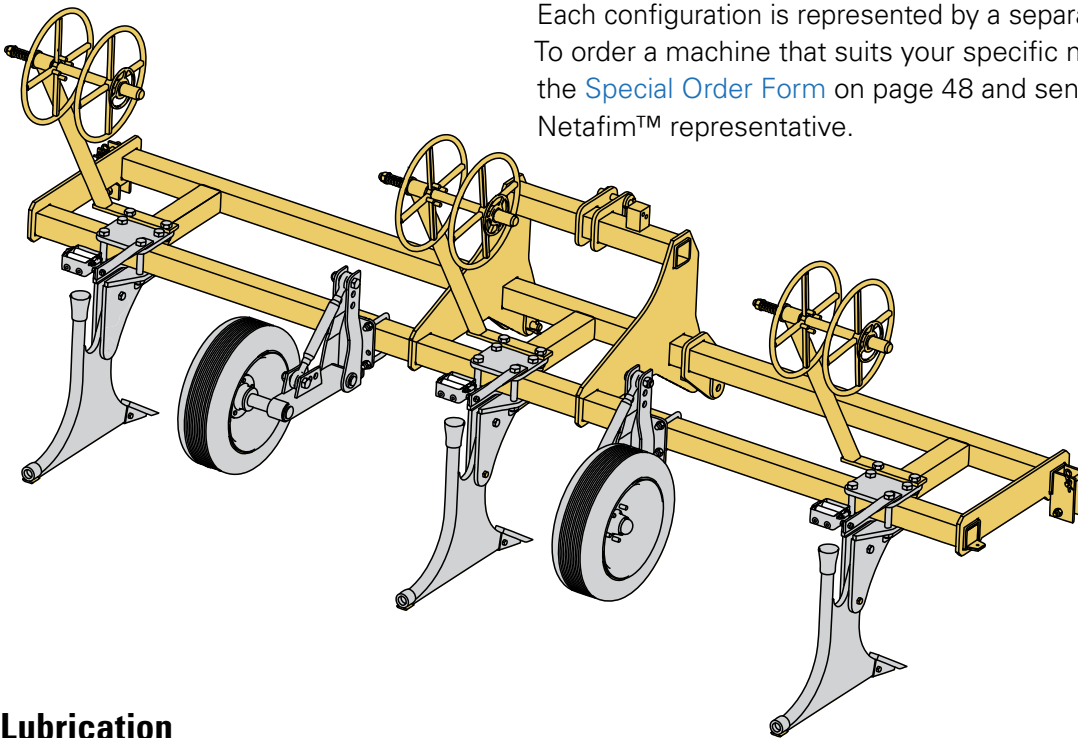


MECHANIZED LAYING AND INSERTION

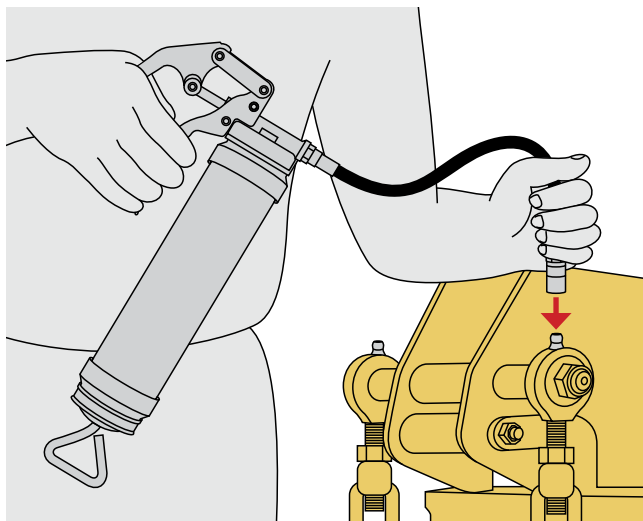
Machine for laying and inserting dripperlines

Netafim™ catalog no. 77200-001280*

* The catalog number presented here is for one configuration of the machine. However, the machine is available in many configurations, with a variety of accessories to meet any needs. Each configuration is represented by a separate catalog number. To order a machine that suits your specific needs, fill out the [Special Order Form](#) on page 48 and send it to your local Netafim™ representative.



Lubrication



ATTENTION

All the machines and devices for laying, insertion and recoiling dripperlines require lubrication before each use. Apply grease with a portable grease gun to all the grease nipples of the machine/device.

Make sure the inside of the insertion tube is clean



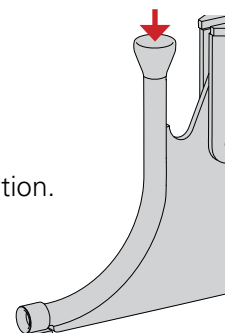
NOTE

A dirty or partially obstructed insertion tube will damage the drippers during insertion.



TIP

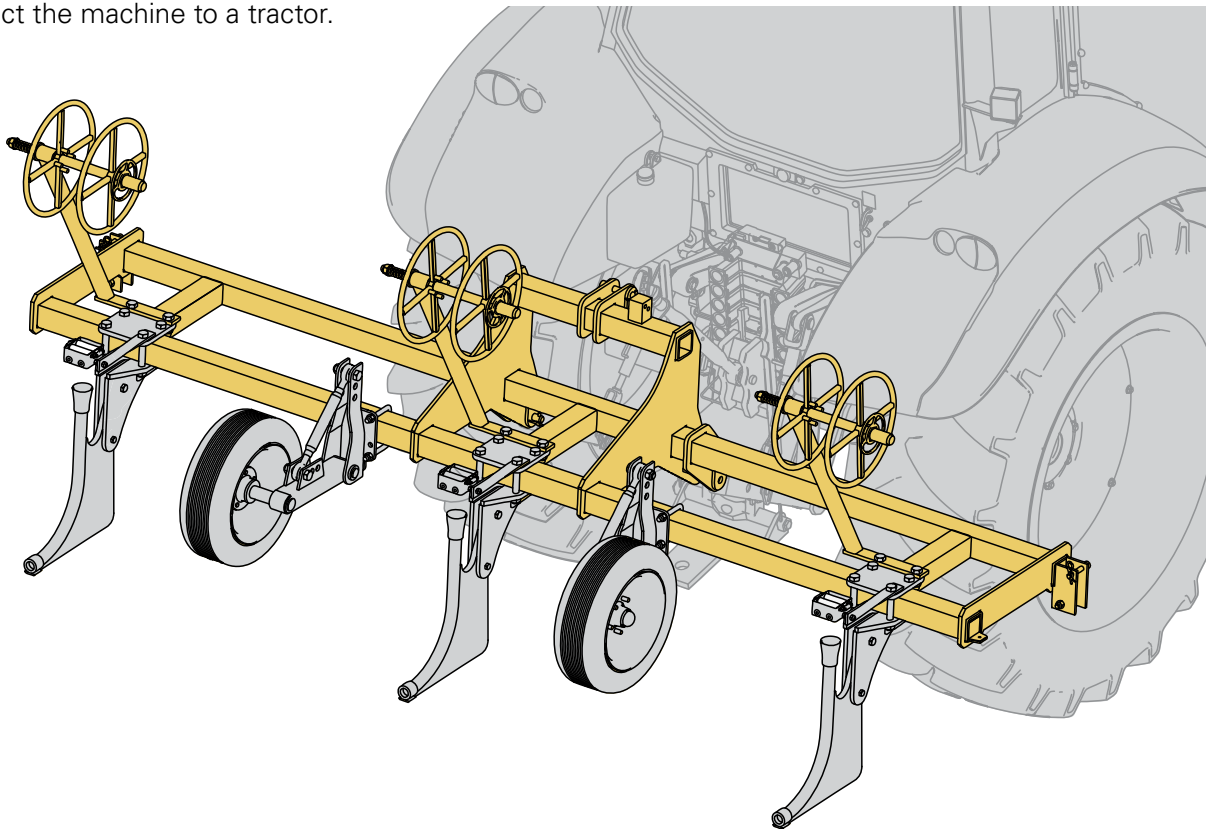
To clean the inside of the insertion tube, flush the tube from the top with water at high pressure.



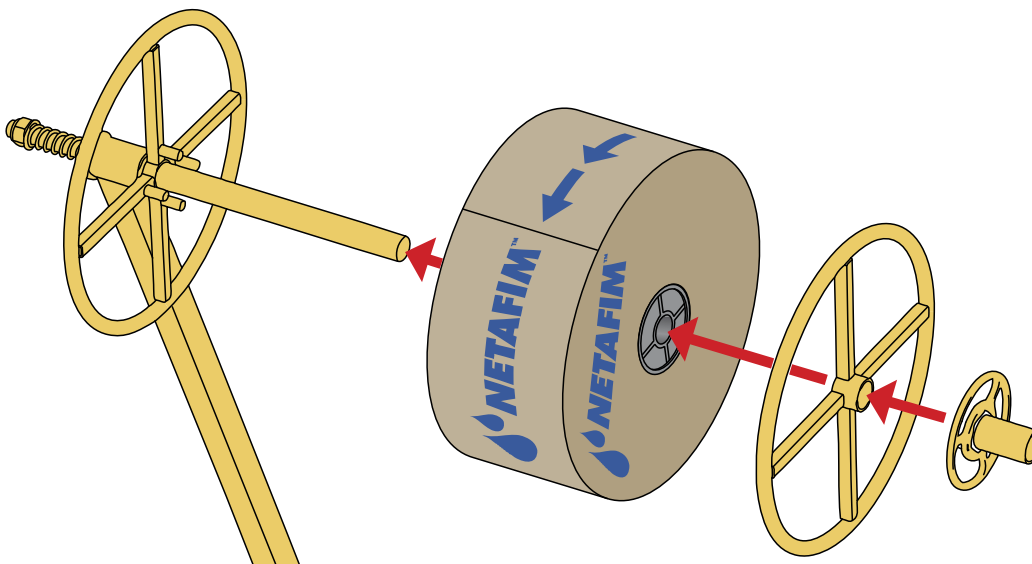
MECHANIZED LAYING AND INSERTION

Mechanized laying of dripperlines on the soil surface

- 1 Connect the machine to a tractor.



- 2 Load dripperline drums onto the drum holders.

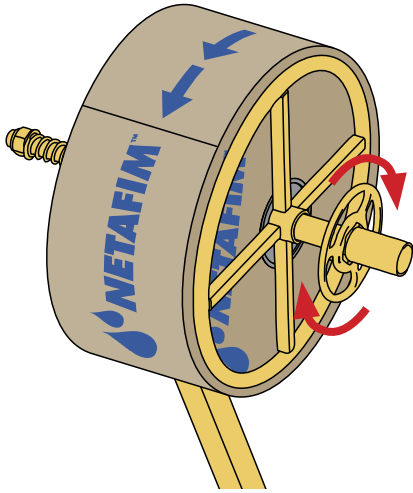


NOTE

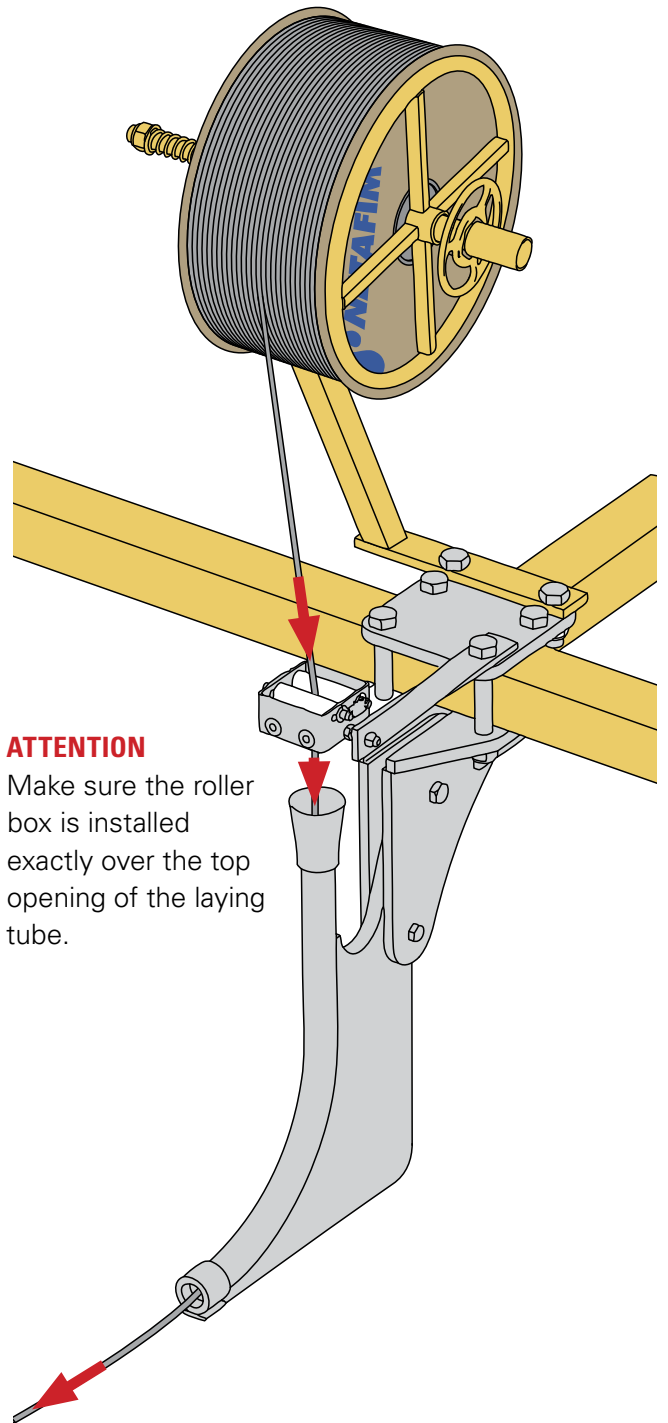
Make sure that the direction of the arrows on the surrounding corrugated cardboard matches the laying direction.

MECHANIZED LAYING AND INSERTION

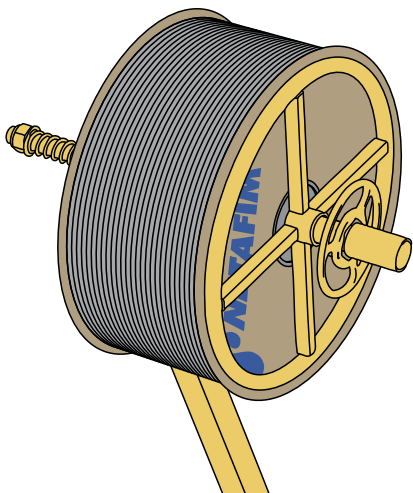
3 Fasten the locking nut/s on the drum holder/s.



5 Thread the dripperline through the roller box and the laying tube.



4 Manually remove the surrounding corrugated cardboard from the drum/s.



ATTENTION

Make sure the roller box is installed exactly over the top opening of the laying tube.



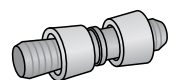
CAUTION

To avoid damaging the dripperline, do not use cutting tools.



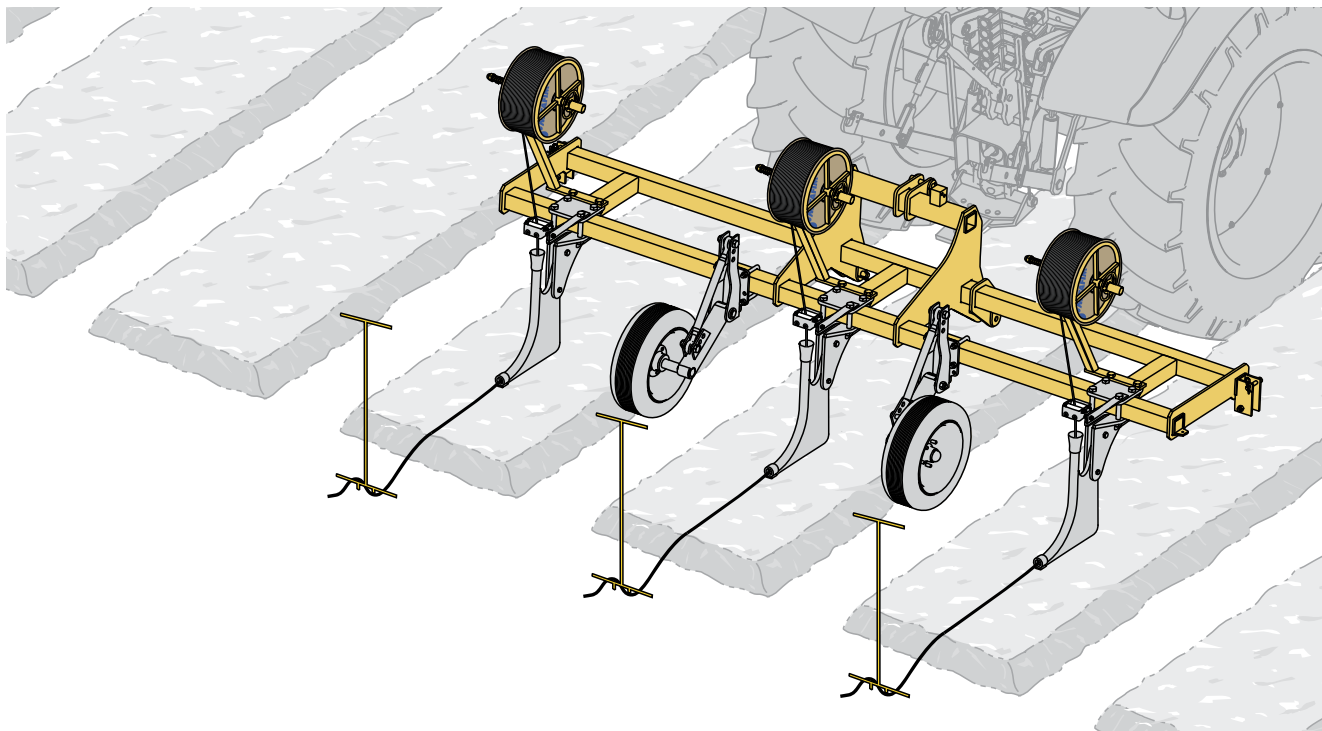
NOTE

All the Netafim™ dripperline connectors are especially designed to pass freely through the Netafim™ insertion tube and roller box without being damaged.

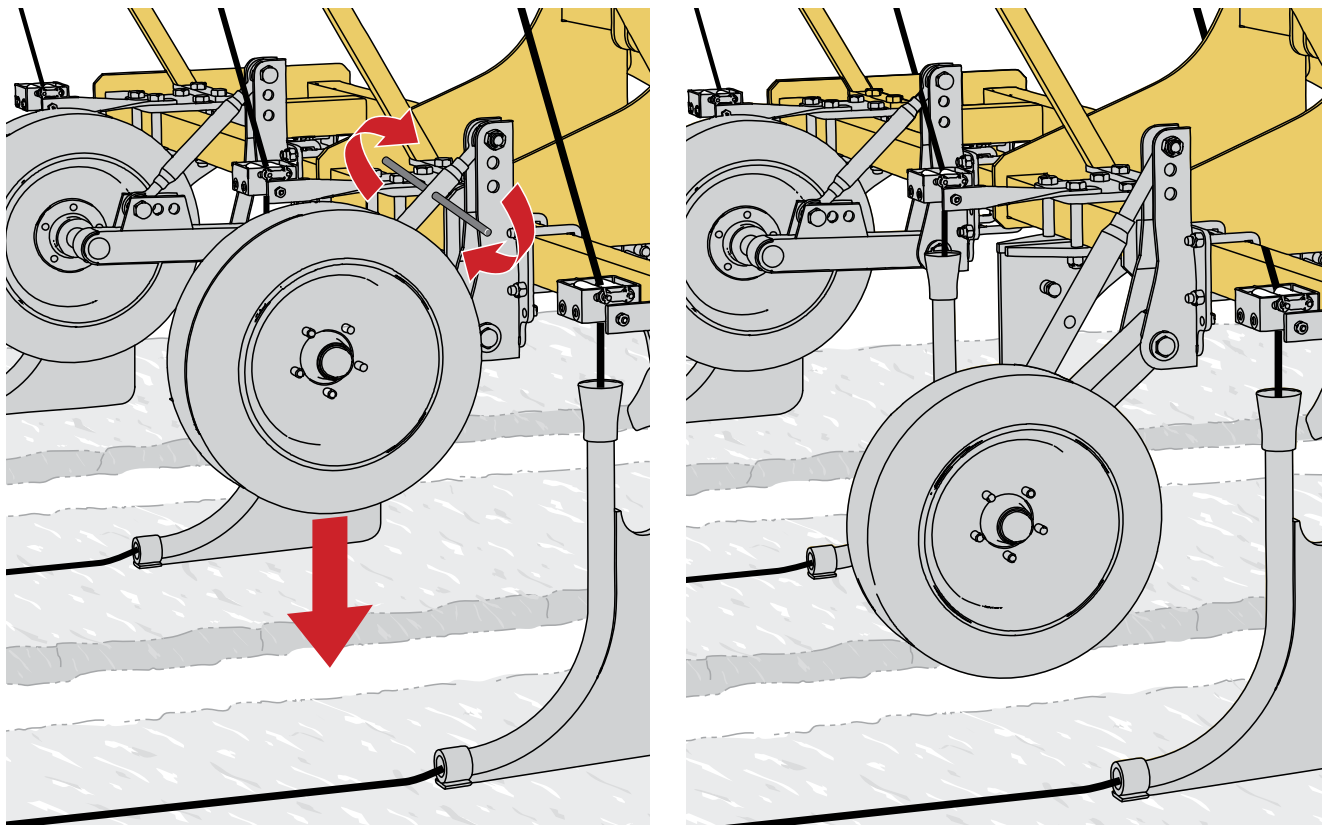


MECHANIZED LAYING AND INSERTION

- 6 Position the tractor at the head end of the bed.
Secure the end of each dripperline to be laid at the head of each bed with a dedicated end-of-dripperline holding spike (see [TIP](#), page 44).



- 7 Adjust the height of the depth wheels.
Lower the machine until the laying shank almost touches the soil.
Then lower the depth wheel until it touches the soil.

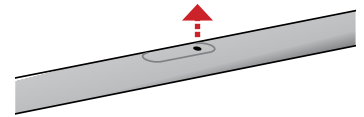


MECHANIZED LAYING AND INSERTION

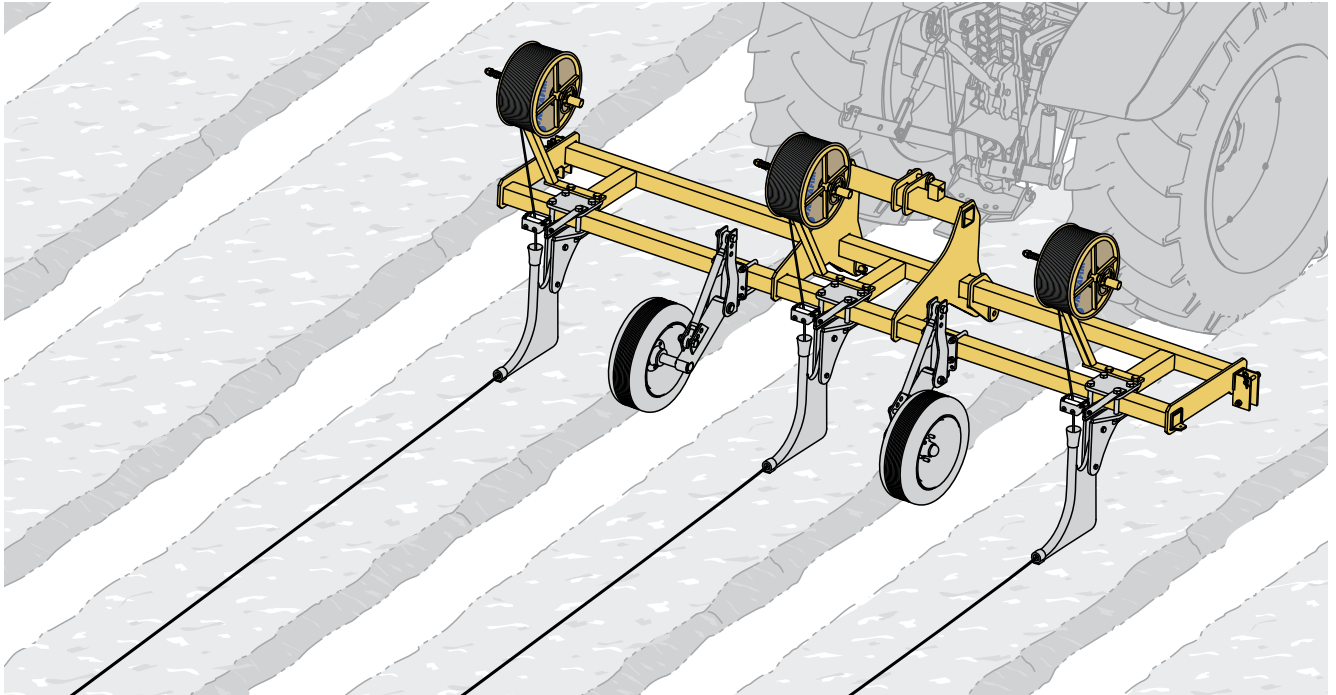


CAUTION

Make sure to lay the dripperline on the bed with the drippers facing up. Make sure the dripperlines are laid out with no twists or kinks.



- 7 Start driving very slowly and increase the speed gradually.



NOTE

Travelling speed should match driver's and workers' skills.

The faster the tractor moves, the more severe the effect of abrupt breaking due to an unexpected problem that requires a halt in the laying process.

If the tractor moves too fast, an unwanted length of dripperline will be released and will have to be recoiled manually before resuming travel.

When a dripperline drum is empty:

- 1 Replace the empty drum with a new one.



TIP

To save time and avoid multiple stopping of the tractor while laying or inserting dripperlines with a 3-unit machine, especially when laying pre-recoiled dripperlines, it is recommended that you stop the tractor when the first of the 3 drums is empty. Cut the leftover dripperline on the two other drums and collect the drums with the leftover dripperlines.

Replace the 3 dripperline drums at the same time.

At the end of the day, in your spare time, connect all the leftover dripperlines with dedicated connectors and recoil them together using a manual recoiling device on a plastic drum for future use.

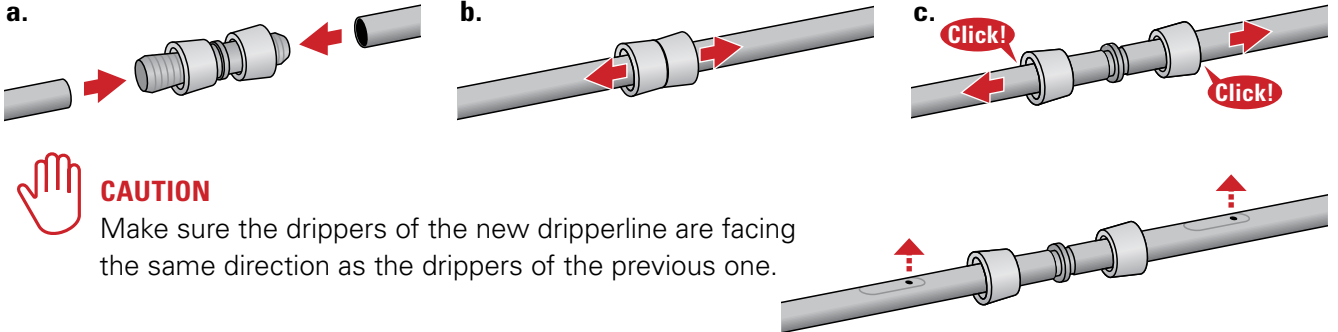


NOTE

Make sure that the direction of the arrows on the surrounding corrugated cardboard match the laying direction.

MECHANIZED LAYING AND INSERTION

- 2 Connect the next dripperline to the previous one using an appropriate pipe connector and continue laying (See all the types of pipe connectors in the Connectors - Product Catalog at <http://www.netafim.com/irrigation-products-technical-materials>).



CAUTION

Make sure the drippers of the new dripperline are facing the same direction as the drippers of the previous one.



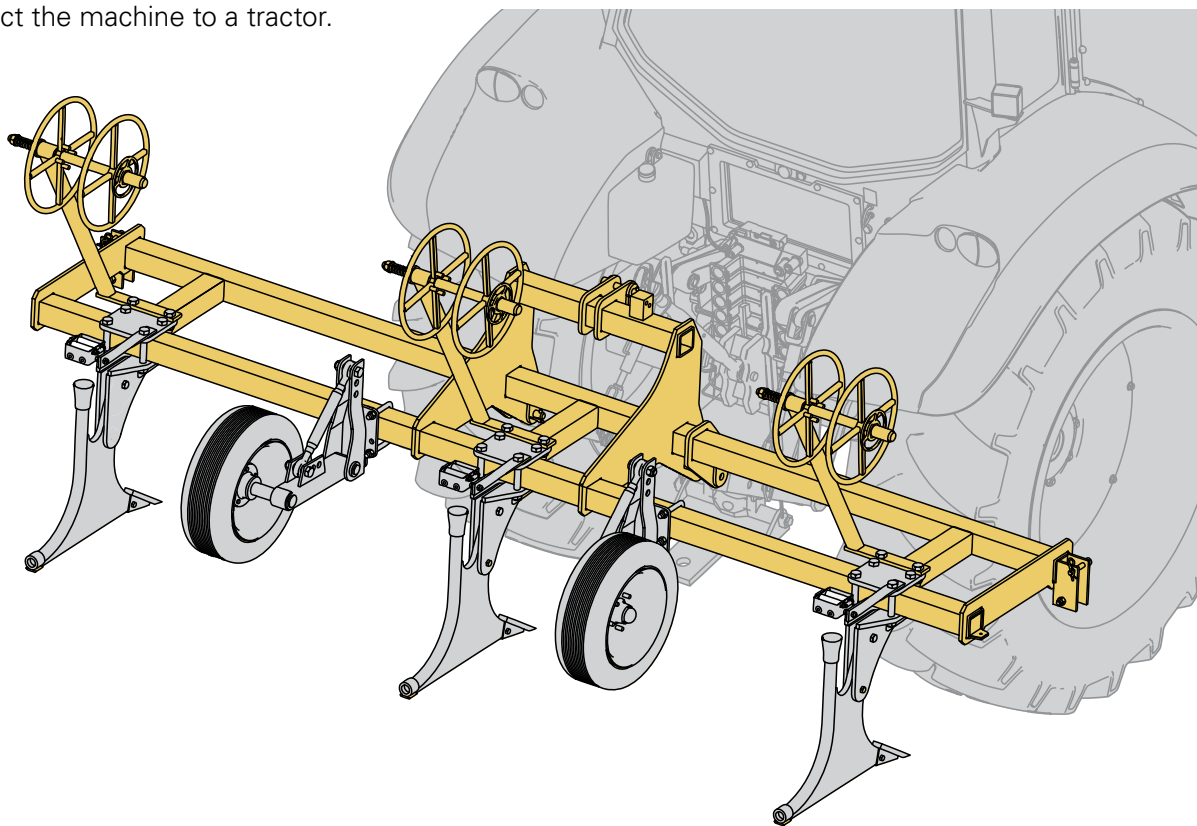
NOTE

The last 3 meters (10 feet) of dripperline unwound from a drum might appear to be crumpled, but it only looks that way. Once the dripperline is full of water under working pressure, it will appear uncrumpled.

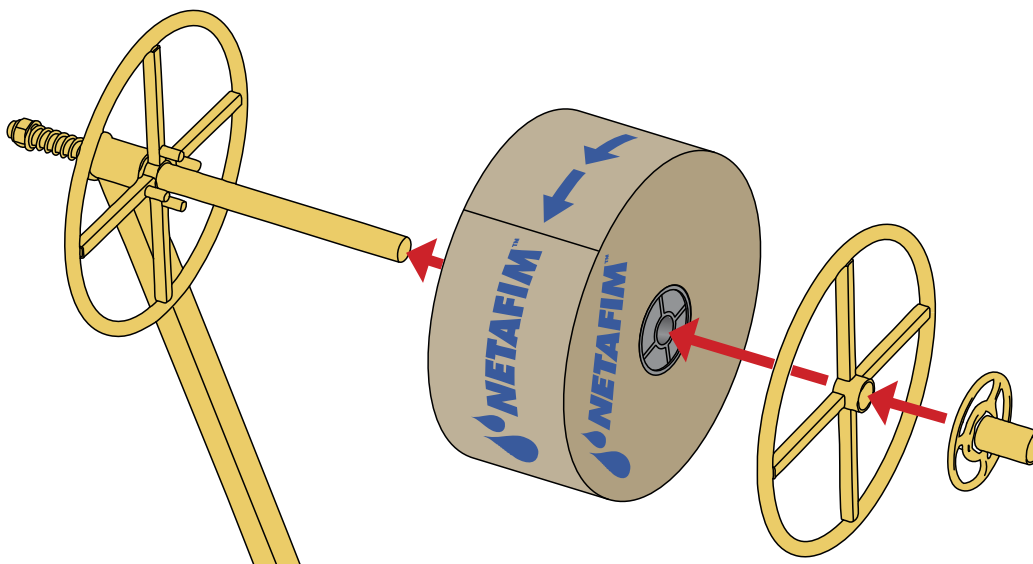
MECHANIZED LAYING AND INSERTION

Mechanized insertion of dripperlines

- 1 Connect the machine to a tractor.



- 2 Load dripperline drums onto the drum holders.

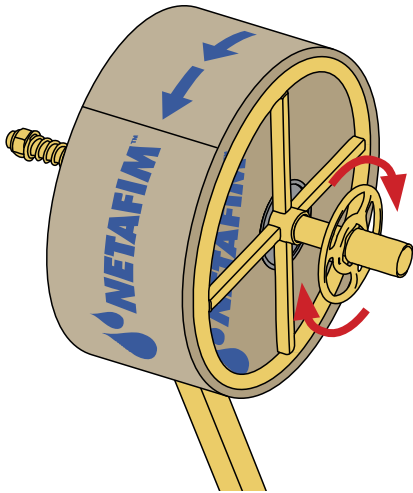


NOTE

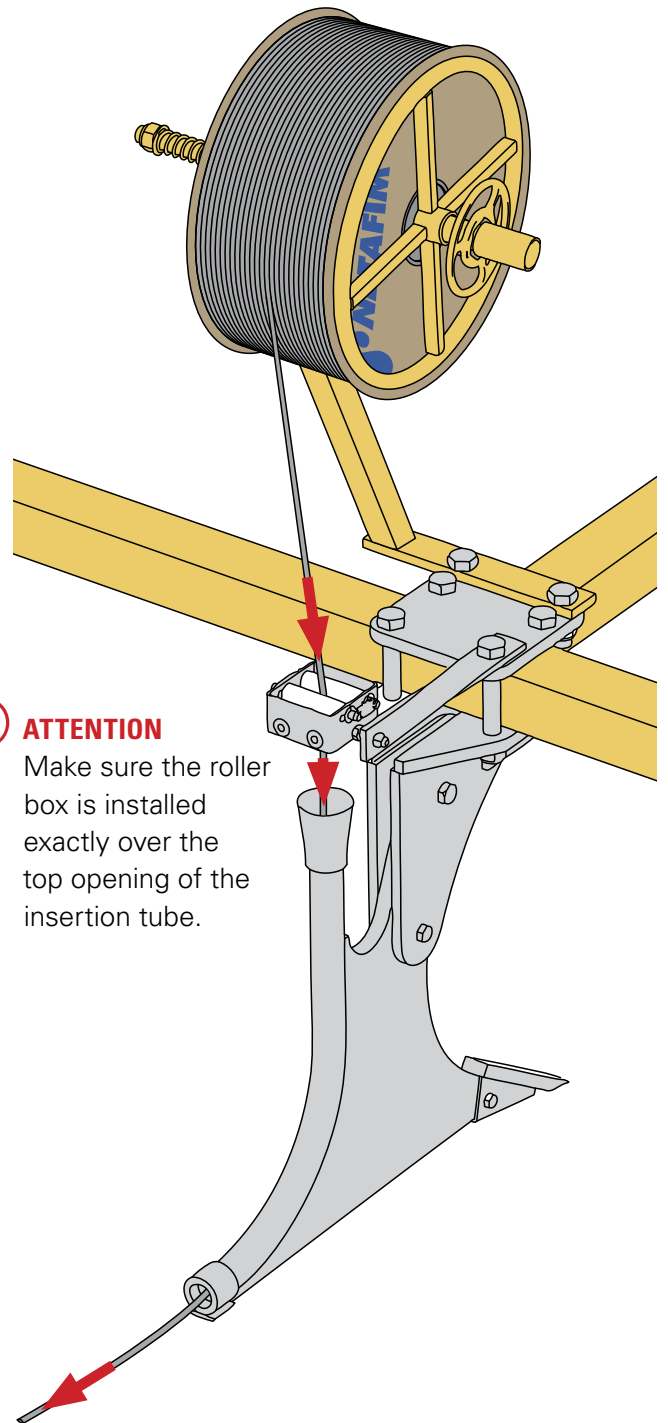
Make sure that the direction of the arrows on the surrounding corrugated cardboard matches the laying direction.

MECHANIZED LAYING AND INSERTION

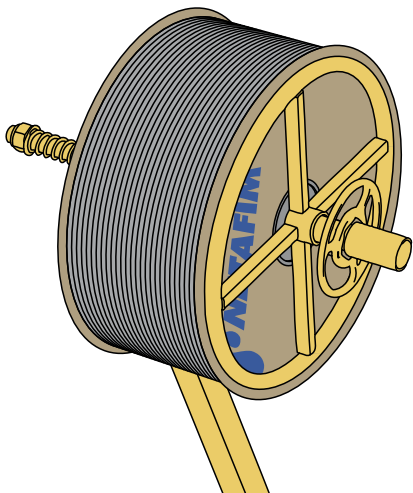
3 Fasten the locking nut/s on the drum holder/s.



5 Thread the dripperline through the roller box and insertion tube.



4 Manually remove the surrounding corrugated cardboard from the drum/s.

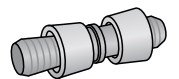


ATTENTION
Make sure the roller box is installed exactly over the top opening of the insertion tube.

CAUTION
To avoid damaging the dripperline, do not use cutting tools.

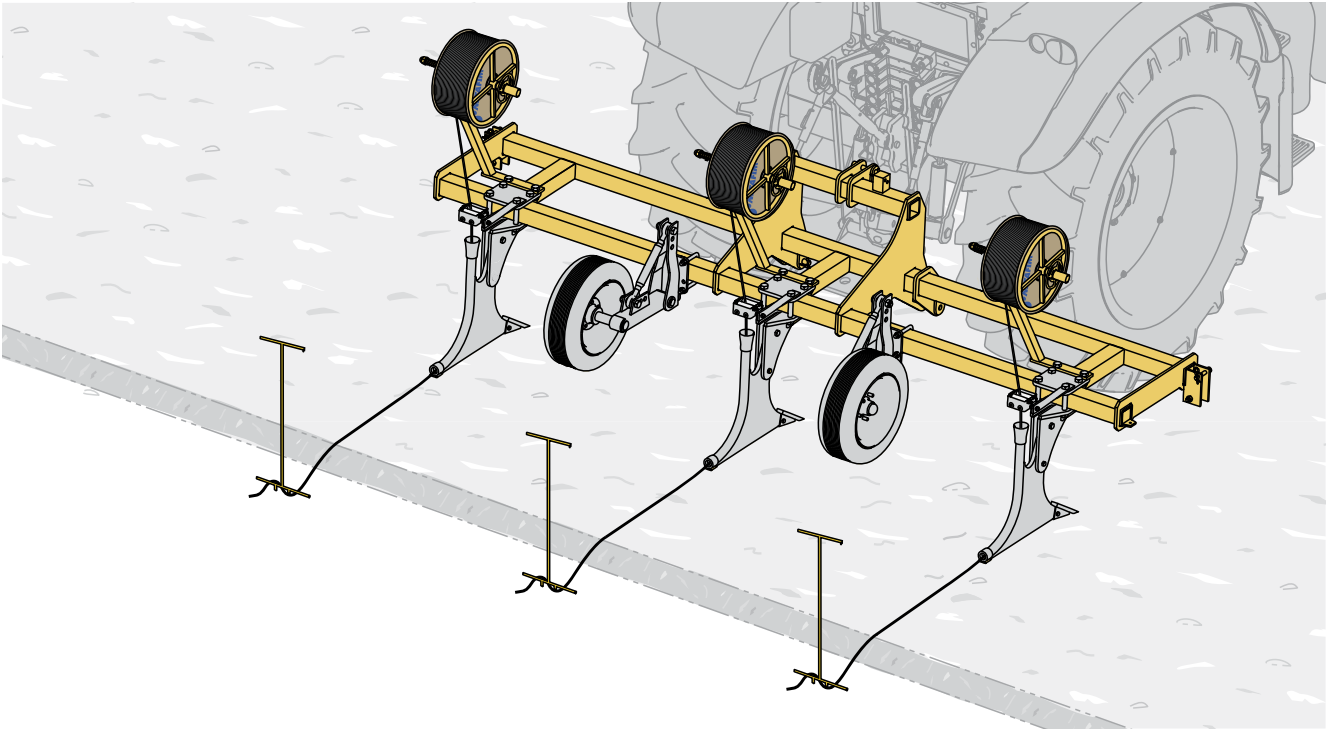


NOTE
All the Netafim™ dripperline connectors are especially designed to pass freely through the Netafim™ insertion tube and roller box without being damaged.

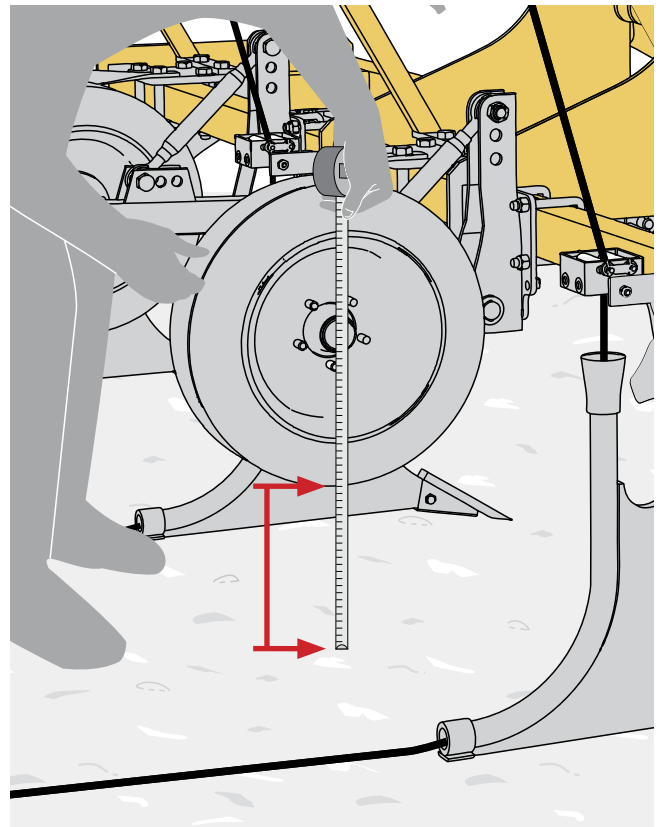
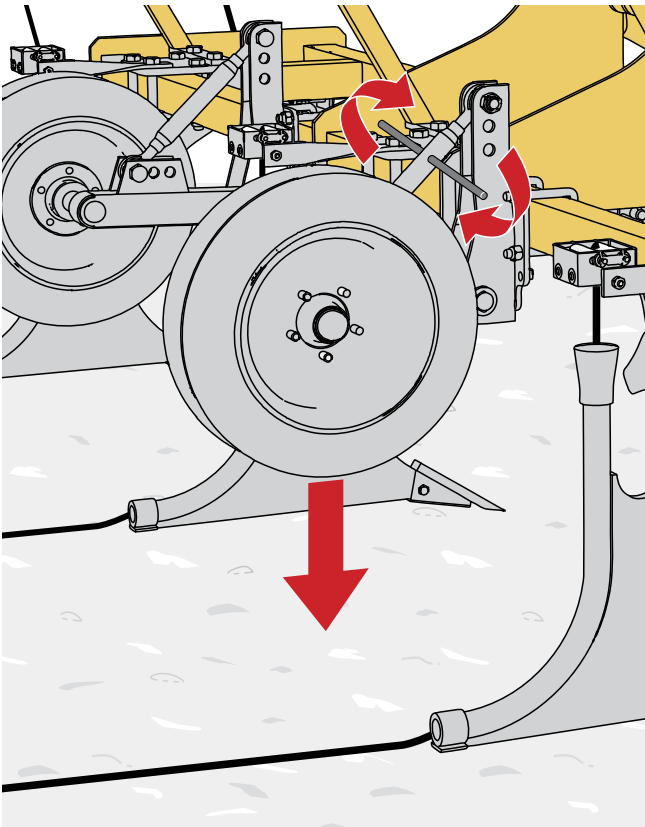


MECHANIZED LAYING AND INSERTION

- 6 Position the tractor at the head end of the field.
Secure the end of each dripperline to be laid at the head of each bed with a dedicated end-of-dripperline holding spike (see [TIP](#), page 44).

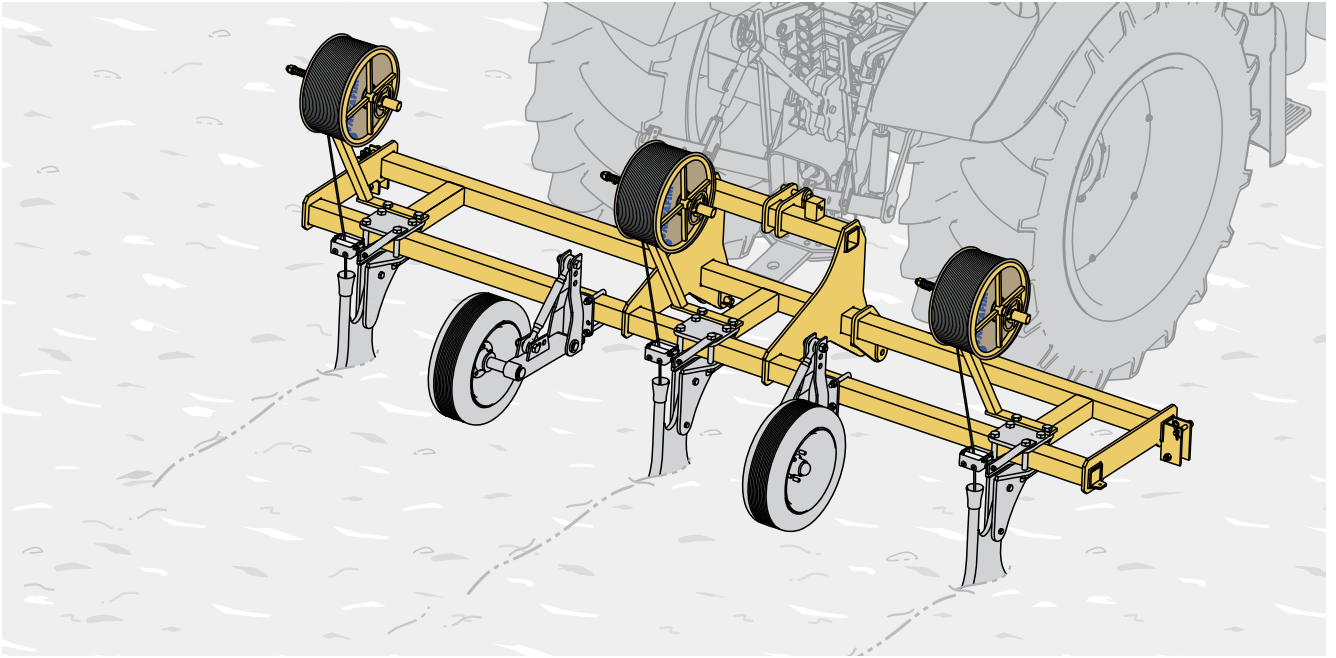


- 7 Adjust the height of the depth wheels.
Lower the machine until the insertion shank touches the soil.
Then lower the depth wheel until its distance from the soil is equal to the required insertion depth.

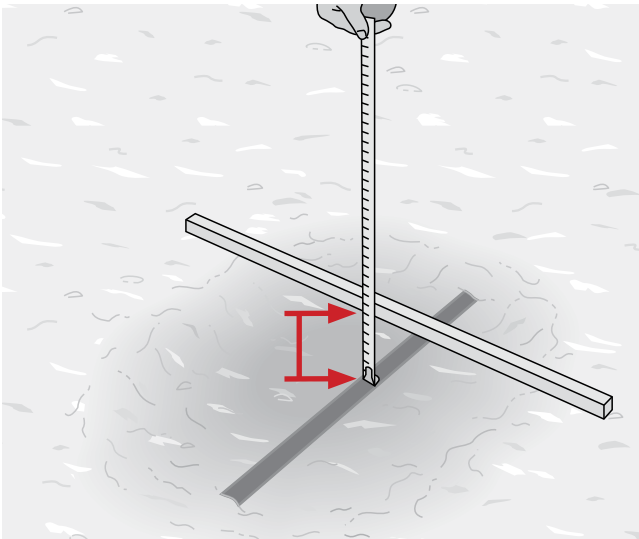


MECHANIZED LAYING AND INSERTION

- 8 Drive for at least 30 - 40 m and stop the tractor.

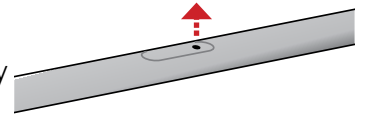


- 9 Check for correct insertion depth and proper soil coverage.



CAUTION

Make sure to lay the dripperline on the bed with the drippers facing up. Make sure the dripperlines are laid out with no twists or kinks.



ATTENTION

Accessories for soil coverage and tightening will be added to the machine or operated separately after dripperline insertion, depending on the soil structure and the crop needs.



NOTE

During the first run of an insertion project, it is highly recommended that you extract a 10-meter-long section of dripperline from the soil, connect it to a water supply, plug the other end, open the water and check for leaks. If any leak is discovered it is a sign that the dripperline has been damaged passing through the insertion tube. Check the insertion tube for any internal protrusion and repair it; then repeat the test.



NOTE

Travelling speed should match driver's and workers' skills.

The faster the tractor moves, the more severe the effect of abrupt breaking due to an unexpected problem that requires a halt in the laying process.

If the tractor moves too fast, an unwanted length of dripperline will be released and will have to be recoiled manually before resuming travel.

MECHANIZED LAYING AND INSERTION

When a dripperline drum is empty:

- 1 Replace the empty drum with a new one.



TIP

To save time and avoid multiple stopping of the tractor while laying or inserting dripperlines with a 3-unit machine, especially when laying pre-recoiled dripperlines, it is recommended that you stop the tractor when the first of the 3 drums is empty. Cut the leftover dripperline on the two other drums and collect the drums with the leftover dripperlines.

Replace the 3 dripperline drums at the same time.

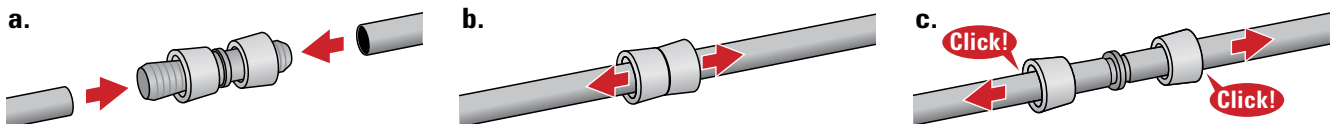
At the end of the day, in your spare time, connect all the leftover dripperlines with dedicated connectors and recoil them together using a manual recoiling device on a plastic drum for future use.



NOTE

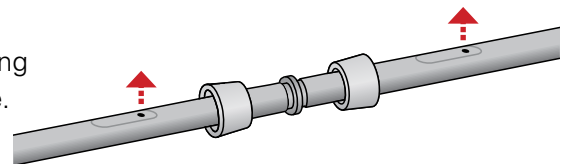
Make sure that the direction of the arrows on the surrounding corrugated cardboard matches the laying direction.

- 2 Connect the next dripperline to the previous one using an appropriate pipe connector and continue laying (See all the types of pipe connectors in the Connectors - Product Catalog at <http://www.netafim.com/irrigation-products-technical-materials>).



CAUTION

Make sure the drippers of the new dripperline are facing the same direction as the drippers of the previous one.



NOTE

The last 3 meters (10 feet) of dripperline unwound from a drum might appear to be crumpled, but it only looks that way. Once the dripperline is full of water under working pressure it will appear uncrumpled.

MECHANIZED EXTRACTION/RELEASE



TIP

Home-made device for dripperline extraction/release

Dripperlines laid on the soil should be released from weeds before being recoiled.

Dripperlines inserted in the soil should be extracted from the soil before being recoiled.

The home-made device for dripperline extraction/release is a simple and efficient solution.

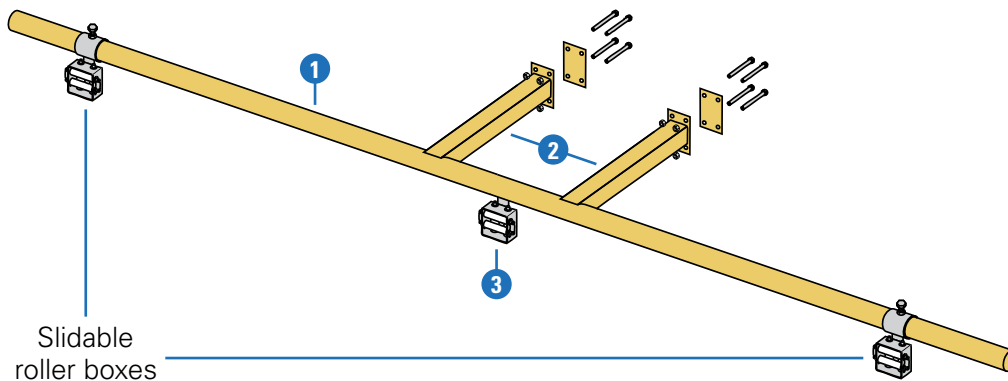
Just order 3 Netafim™ roller boxes and, using a few pieces of metal, make a simple device to release/extract up to 3 dripperlines at once.



NOTE

This device is designed for dripperline extraction from a maximum depth of 7.5 cm (3 inches). For dripperline extraction from greater depths, contact your Local Netafim™ representative.

How to make a simple home-made device for dripperline extraction/release

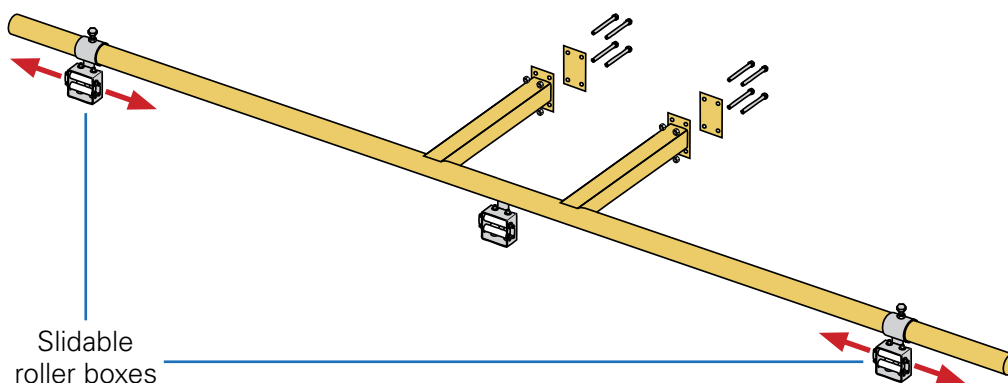


- 1 Use a 5 cm (2 in)-diameter, 4 m (13 ft)-long pipe.
- 2 Weld the pipe to two 5X5 cm (2X2 in) bars, 60 cm (2 ft)-long each with connection plates.
- 3 Weld a roller box under the center of the pipe.

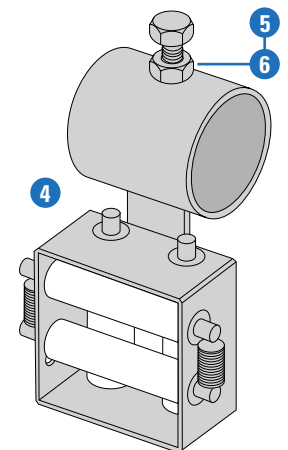
Prepare 2 slidable roller boxes

- 4 Weld each of 2 roller boxes to a piece of pipe that is 6 cm (2½ in)-diameter, 5 cm (2 in)-long.
- 5 Drill a 1 cm (0.4 in) hole at the top of the piece of pipe, in the center.
- 6 Weld a nut over the hole and insert a bolt.

The 2 slidable roller boxes can be placed at the desired location along the pipe to fit the lateral distance between the dripperlines.



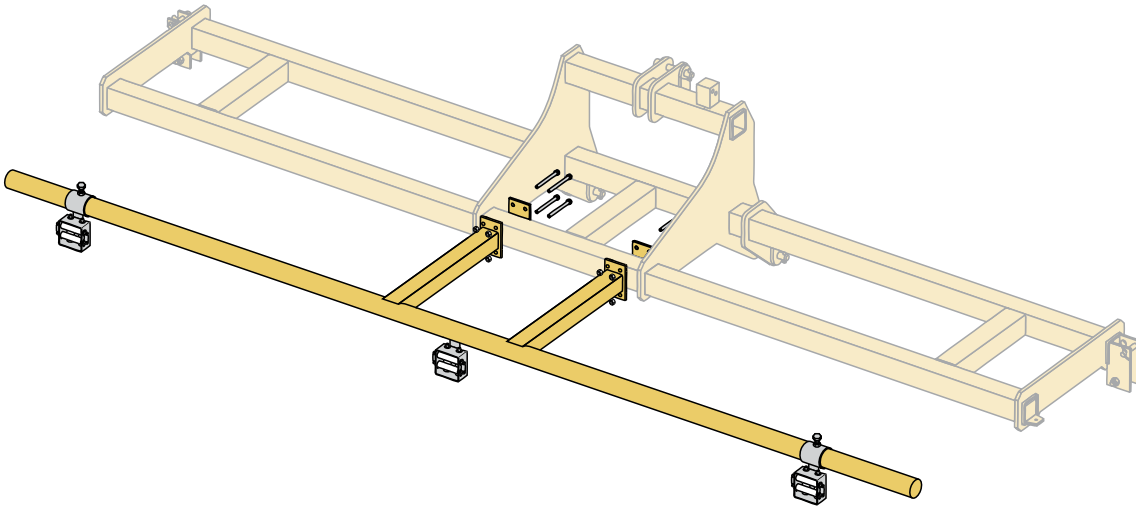
Slidable roller box



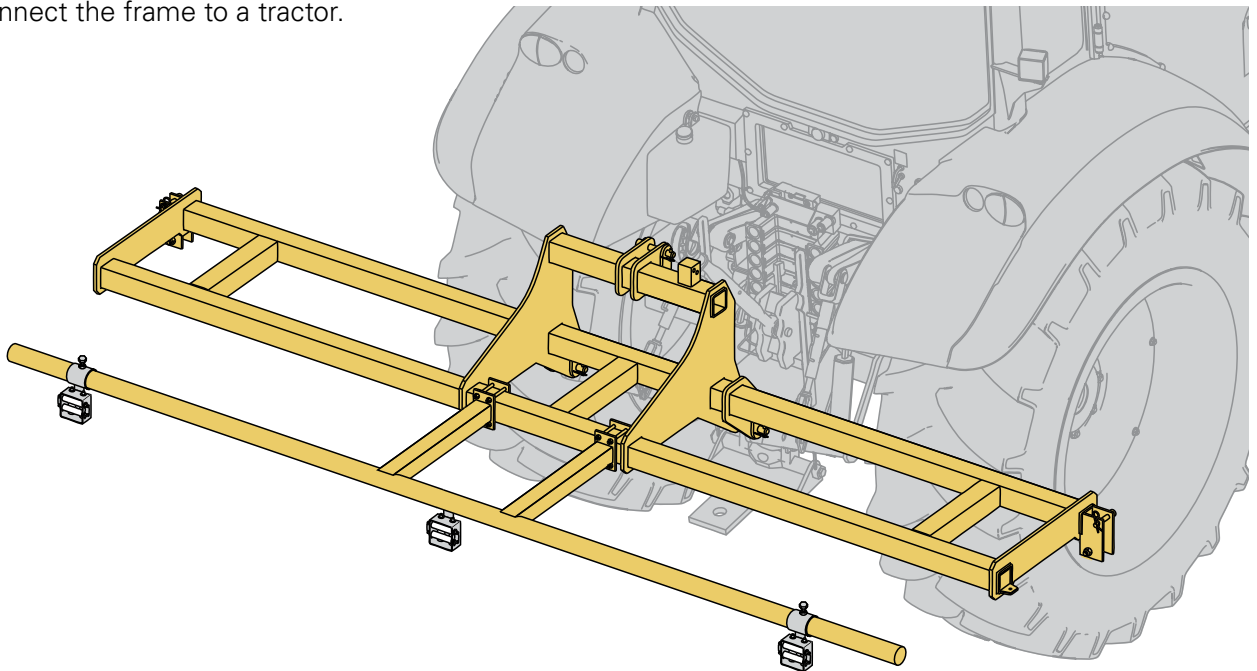
MECHANIZED EXTRACTION/RELEASE

Using the device for dripperline extraction/release

- 1 Connect the device, centered, to a standard agro-machinery frame.



- 2 Connect the frame to a tractor.

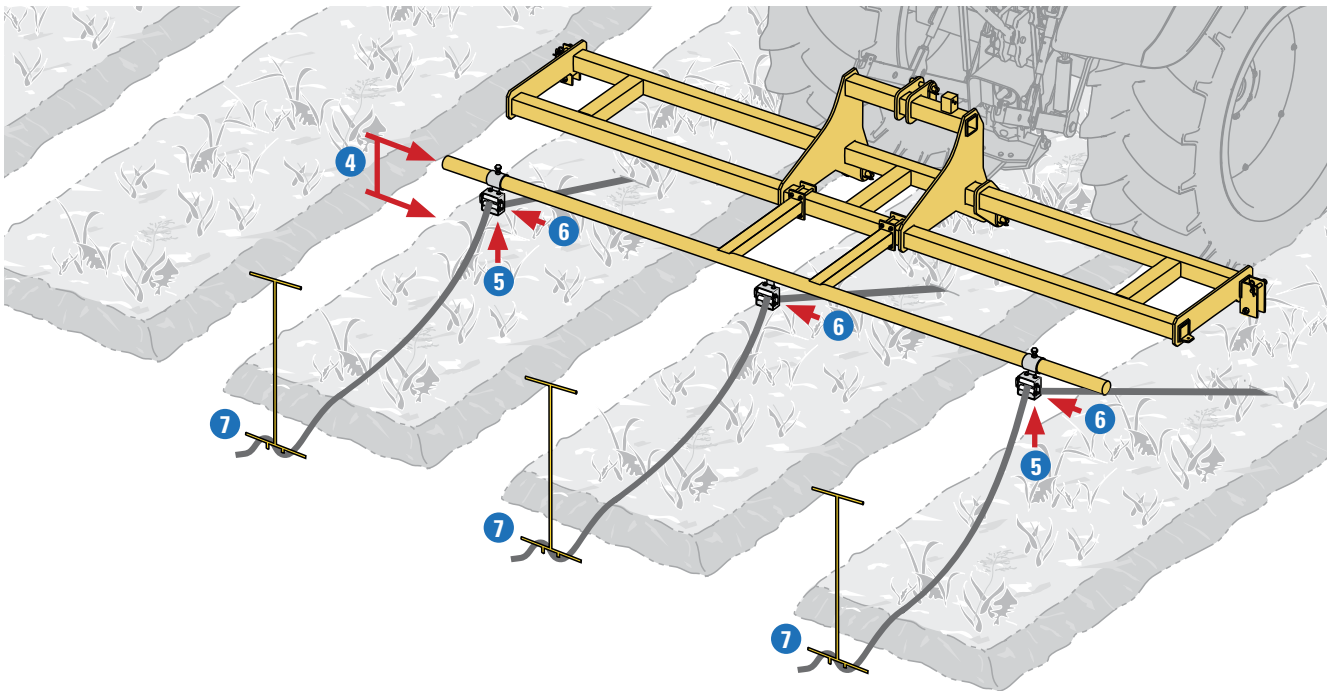


- 3 Position the tractor at the head end of the bed.
- 4 Lower the extraction/release device to the minimum height above the soil while avoiding contact with the soil, protruding clods or weeds.
- 5 Place the 2 slidable roller boxes above the dripperlines and fasten their bolts.
- 6 Pull up the dripperlines to be extracted from the soil and thread them through the roller boxes.
- 7 Secure the end of each dripperline to be extracted at the head of each bed with a dedicated end-of-dripperline holding spike (see [TIP](#), page 44).

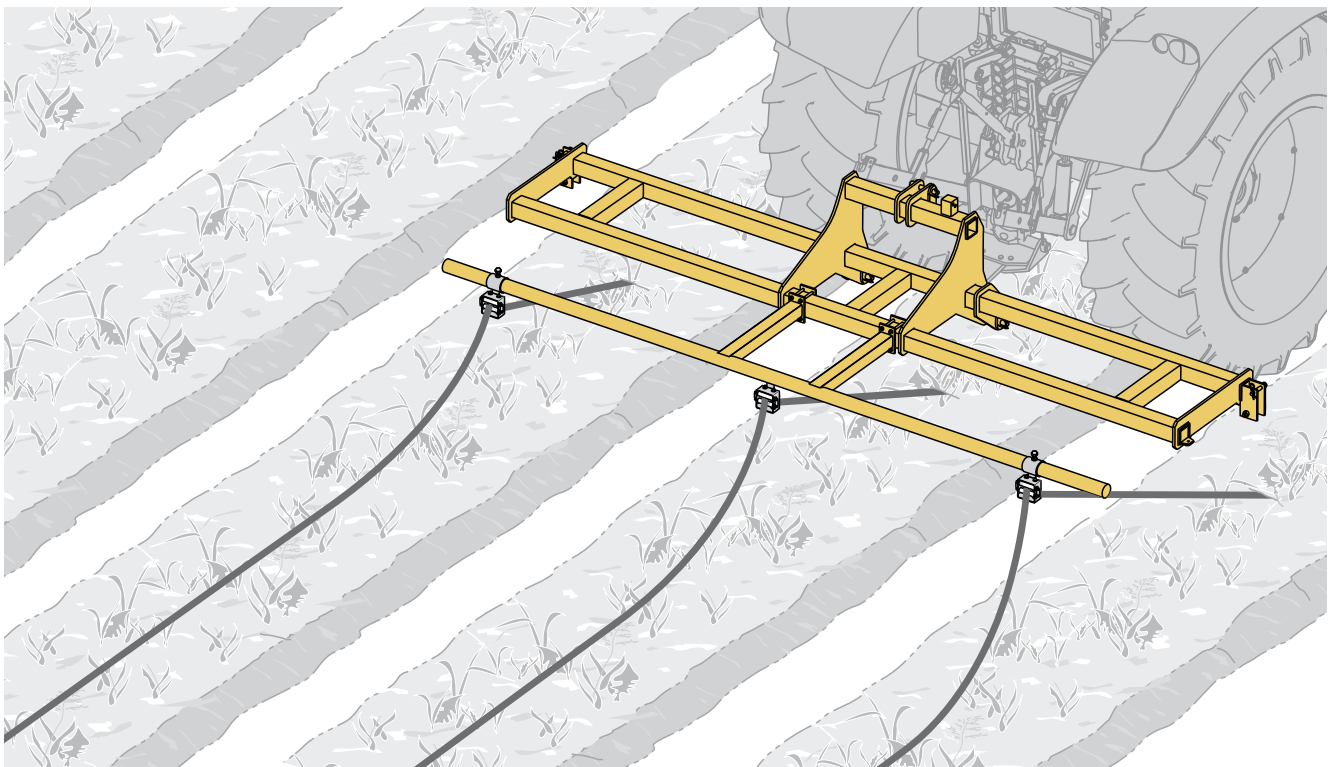
Alternatively:

Workers should hold the ends of the dripperlines to be extracted close to the rear of the tractor for the first 10 to 20 meters of travel.

MECHANIZED EXTRACTION/RELEASE



8 Start driving very slowly and increase the speed gradually.



ATTENTION

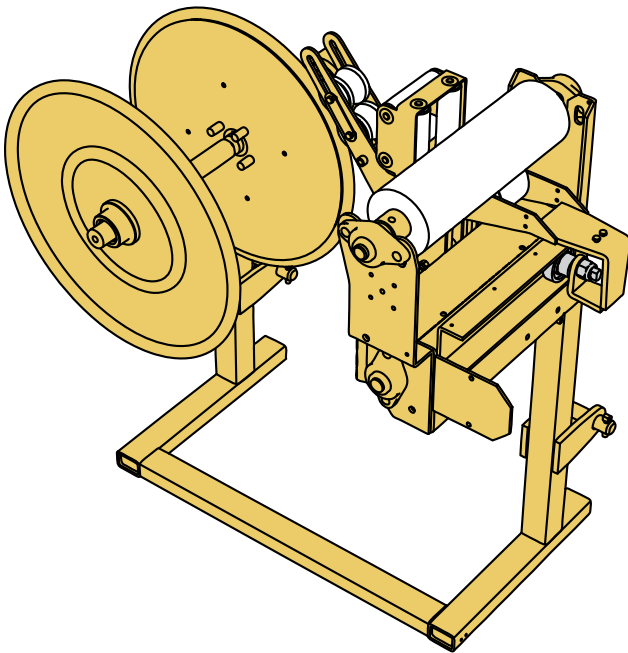
- Make sure that during extraction/release the center dripperline does not come in contact with any part of the tractor's underbody.
- Make sure the dripperlines are not overstretched or damaged during extraction/release. If they are, decrease travelling speed.

9 Remove the spikes.

MECHANIZED RECOILING

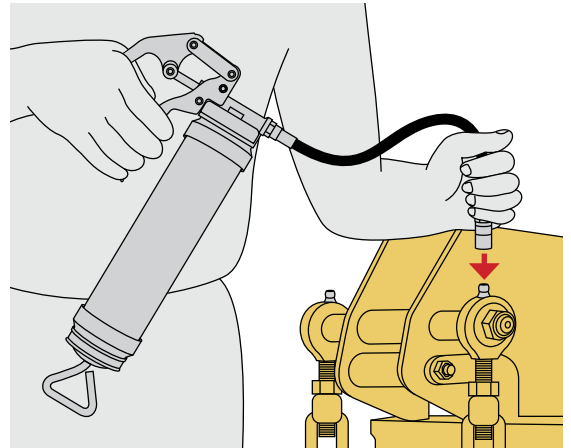
Machine for recoiling shallow-inserted dripperlines for reuse

Netafim™ Catalog No. 77200-001530



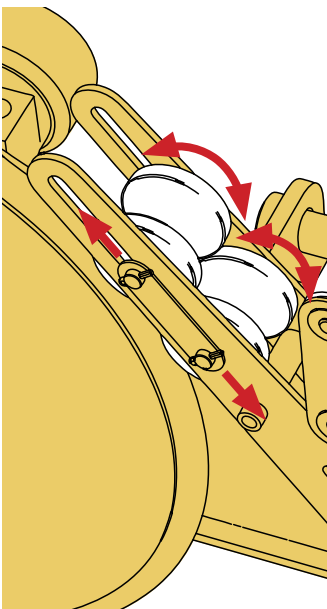
ATTENTION

All the dripperline laying, insertion and recoiling machines and devices require lubrication before each use. Apply grease with a portable grease gun to all the grease nipples of the machine/device.

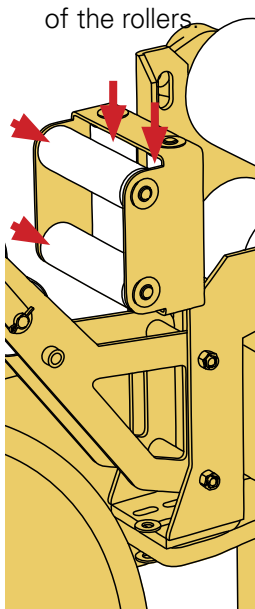


Mechanized recoiling of shallow-inserted dripperlines for reuse

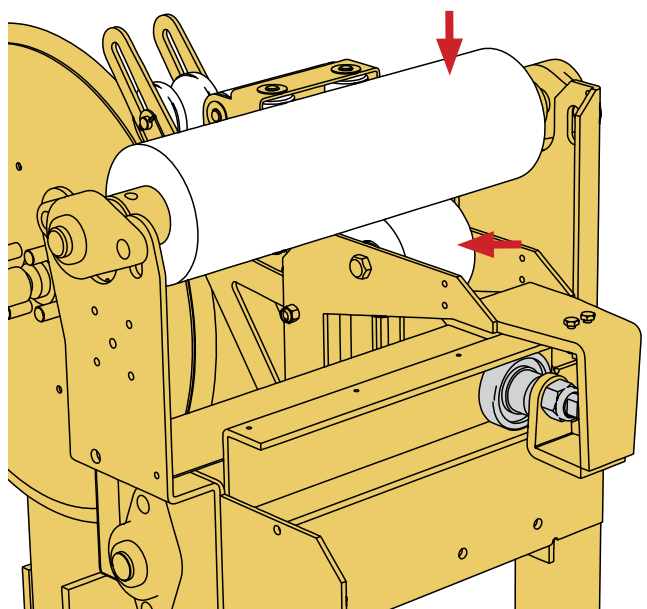
1 Check the recoiling guide to ensure its free rotation and up/down sliding.



2 Check the roller box to ensure the free rotation of the rollers.

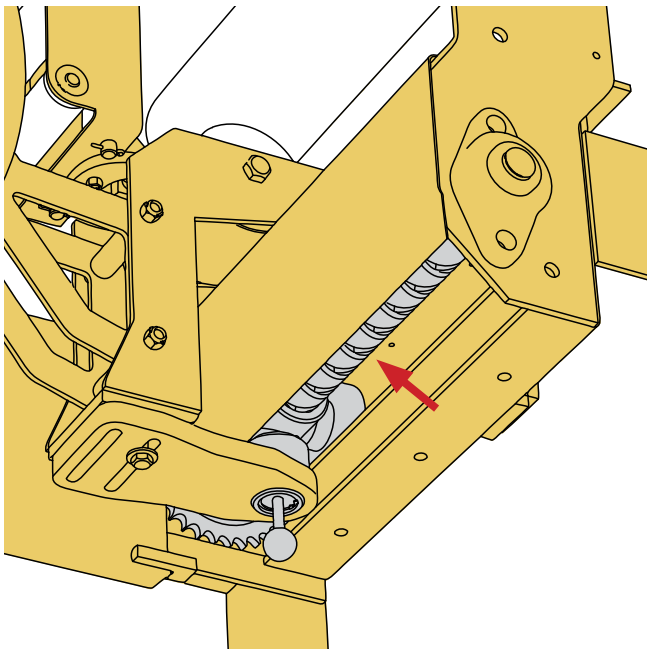


3 Visually check the feeding rollers.

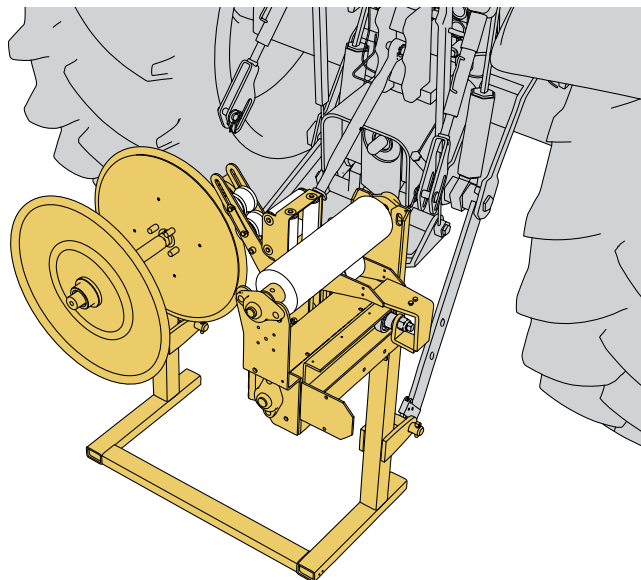


MECHANIZED RECOILING

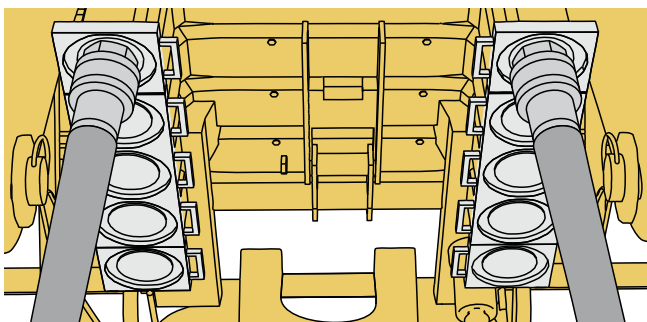
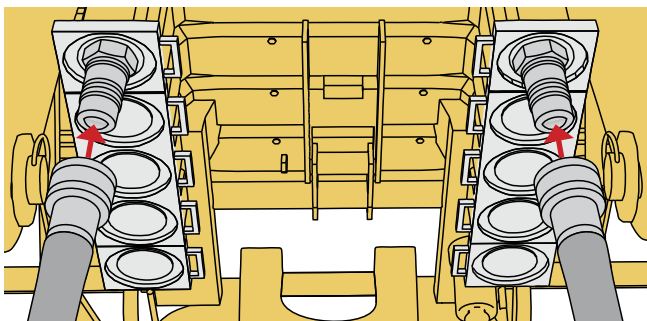
- 4 Visually check the integrity of the motion spindle. Check that it is clean and lubricated. (The motion spindle is situated under the feeding rollers and is visible from underneath).



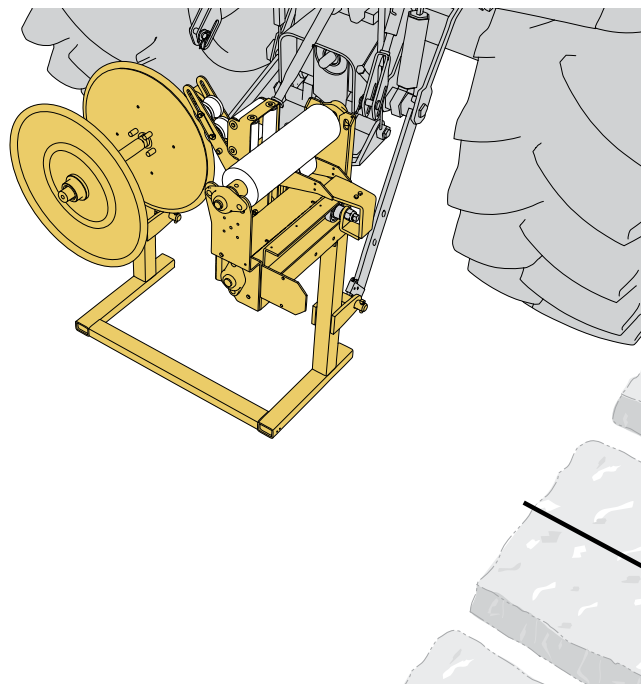
- 5 Connect the recoiling machine to a tractor.



- 6 Connect the extraction/release machine's hydraulic pipes to the tractor.

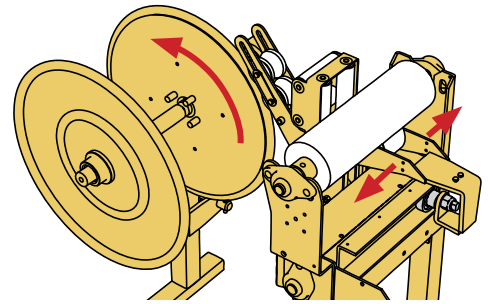


- 7 Place the tractor at the head end of the bed, perpendicular to the bed and lower the machine to the ground.



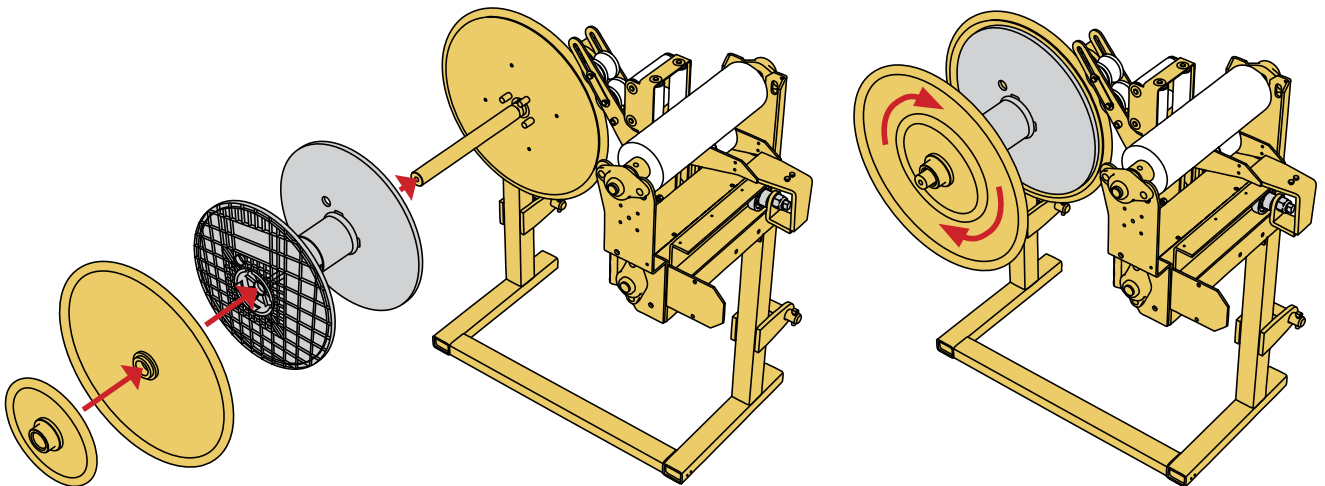
MECHANIZED RECOILING

- 8** Activate the machine.
- a.** Check the direction of rotation of the drum holder. If the drum holder rotates in the wrong direction, invert the connection of the hydraulic pipes to the tractor.
 - b.** Check that the feeding roller is moving from side to side.



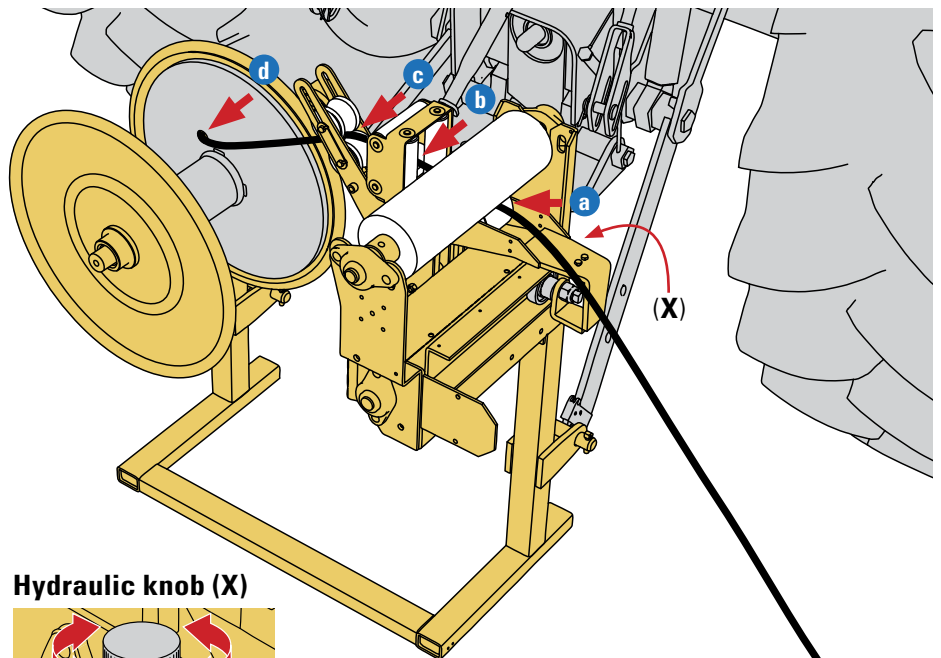
- 9** Load a reusable plastic drum onto the drum holder.

- 10** Fasten the locking nut on the drum holder.



- 11** Thread the dripperline:
- a.** Through the feeding rollers
 - b.** Through the roller box
 - c.** Through the recoiling guide.
 - d.** Insert the end of the dripperline into the hole next to the core of the plastic drum.

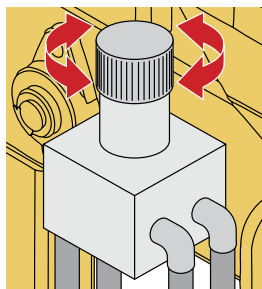
ATTENTION
When recoiling a dripperline for reuse, make sure that the dripperline on the drum is recoiled with the drippers facing out.



Hydraulic knob (X)

- 12** Start recoiling slowly and increase the speed gradually using the hydraulic knob (X) located behind the feeding rollers.

Clockwise = faster
Counterclockwise = slower

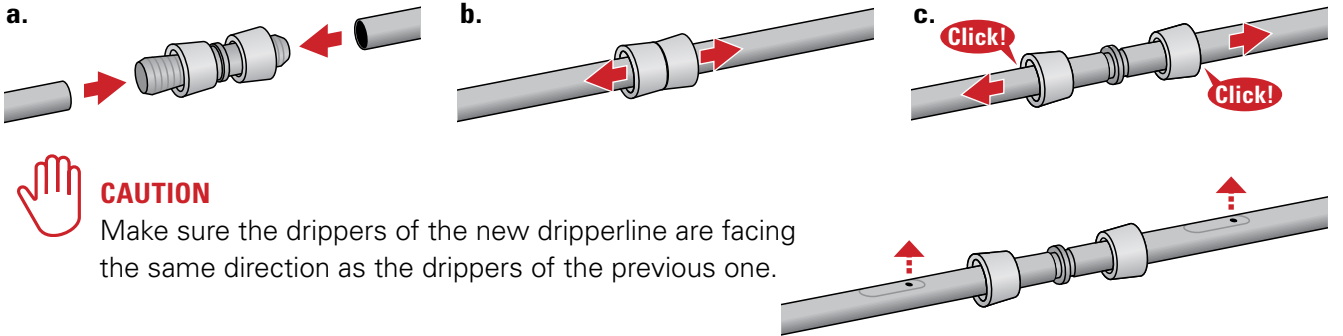


ATTENTION
Make sure the dripperline is not overstretched; if it is, decrease the recoiling speed.

MECHANIZED RECOILING

When a dripperline is completely recoiled:

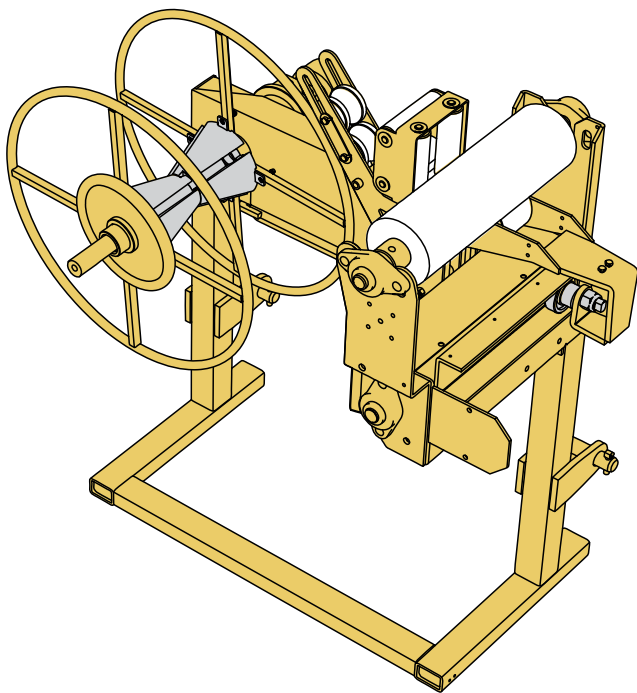
- 1 Connect the next dripperline to the previous one using an appropriate pipe connector and continue recoiling (See all the types of pipe connectors in the Connectors - Product Catalog at <http://www.netafim.com/irrigation-products-technical-materials>).



MECHANIZED RECOILING

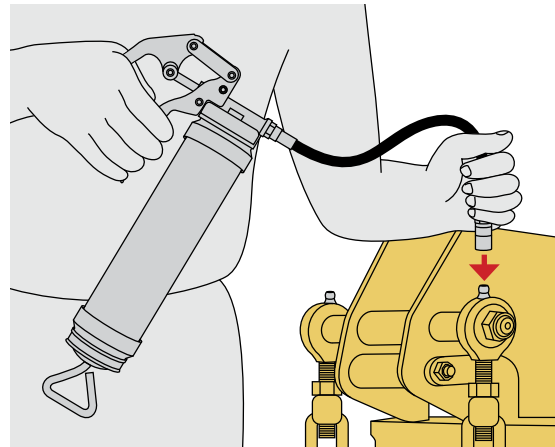
Machine for recoiling shallow-inserted dripperlines for recycling

Netafim™ Catalog No. 77200-001556



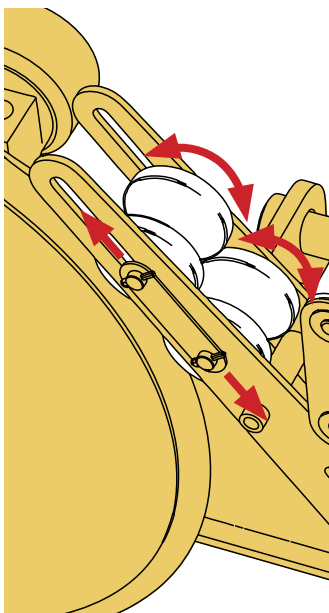
ATTENTION

All the dripperline laying, insertion and recoiling machines and devices require lubrication before each use. Apply grease with a portable grease gun to all the grease nipples of the machine/device.

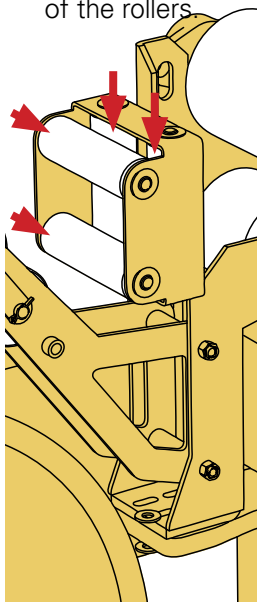


Mechanized recoiling of shallow-inserted dripperlines for recycling

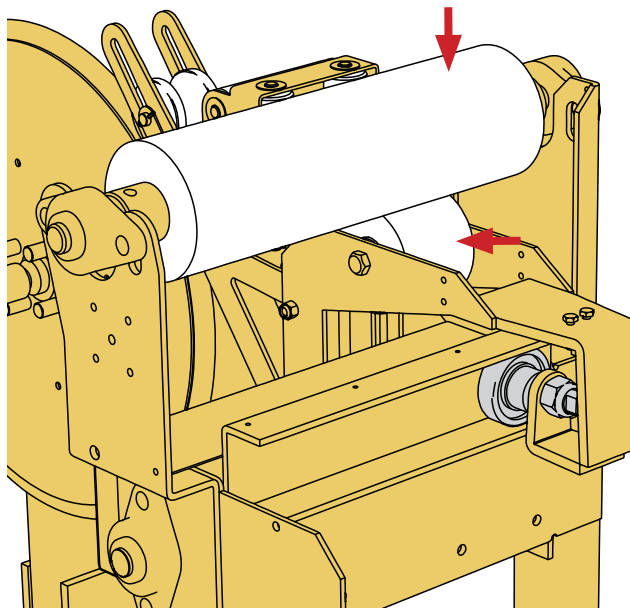
1 Check the recoiling guide to ensure its free rotation and up/down sliding.



2 Check the roller box to ensure the free rotation of the rollers.

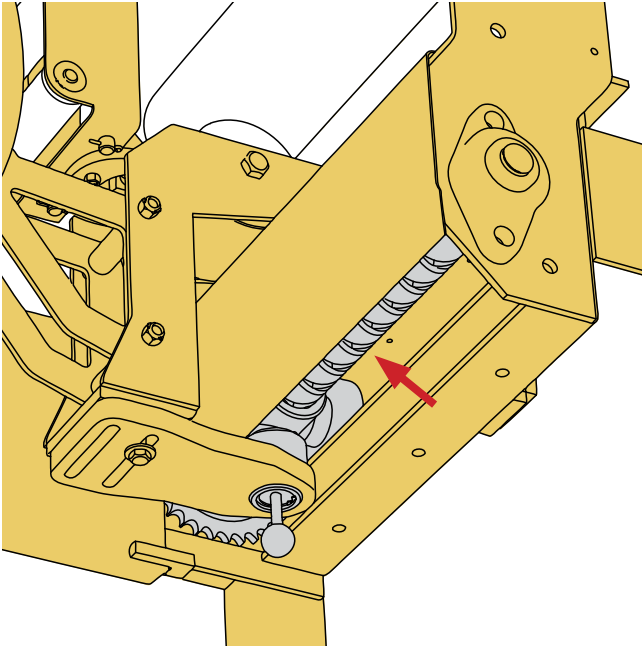


3 Visually check the feeding rollers.

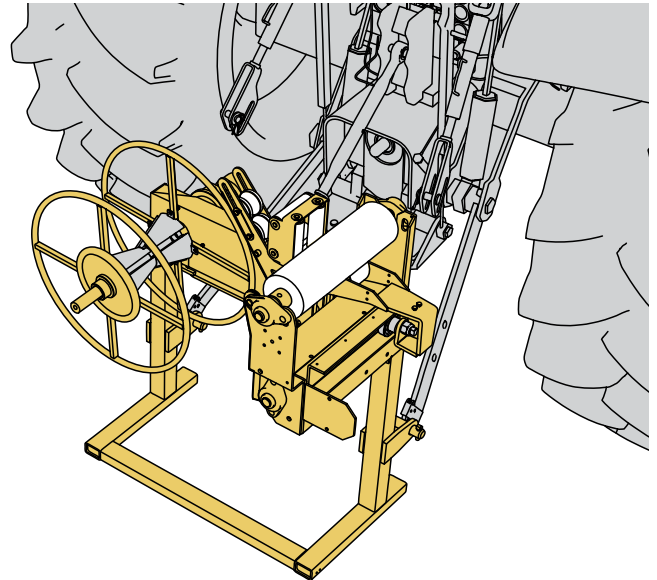


MECHANIZED RECOILING

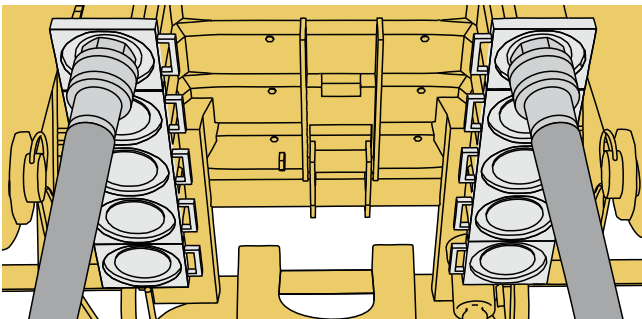
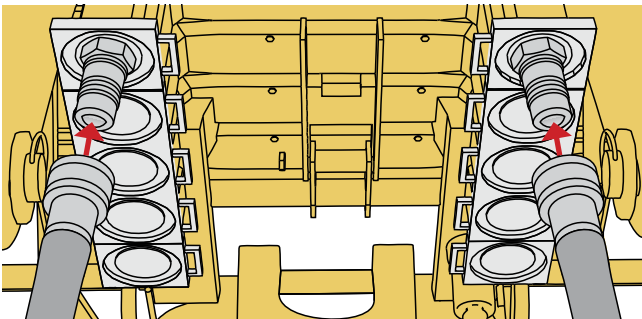
- 4 Visually check the integrity of the motion spindle. Check that it is clean and lubricated. (The motion spindle is situated under the feeding rollers and is visible from underneath).



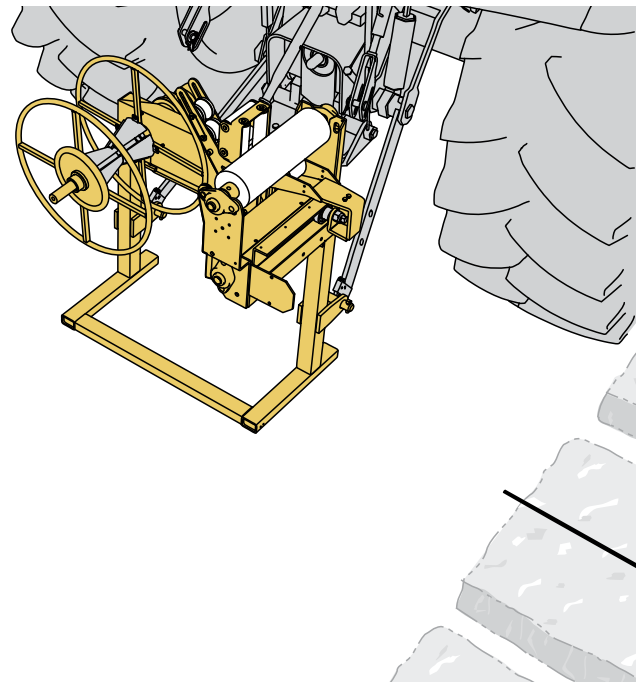
- 5 Connect the recoiling machine to a tractor.



- 6 Connect the recoiling machine's hydraulic pipes to the tractor.

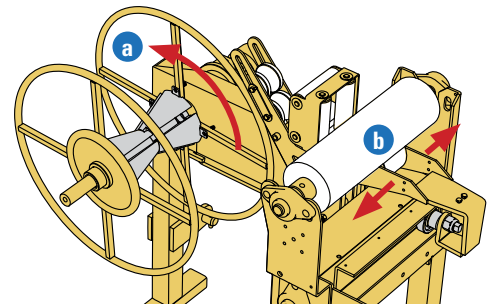


- 7 Place the tractor at the end of the bed, perpendicular to the bed and lower the machine to the ground.

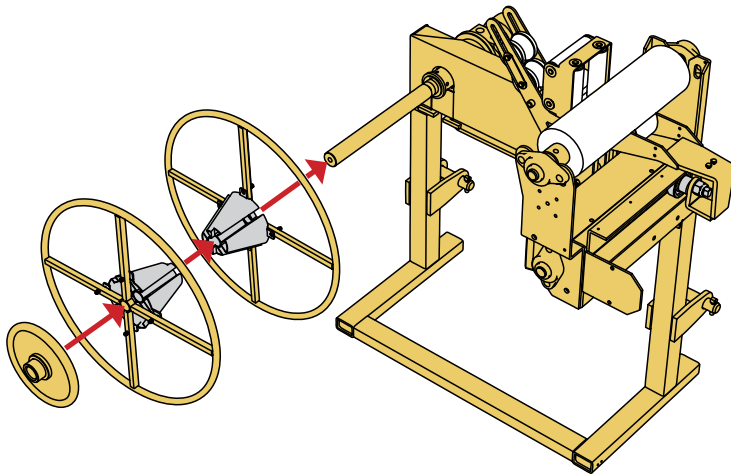


MECHANIZED RECOILING

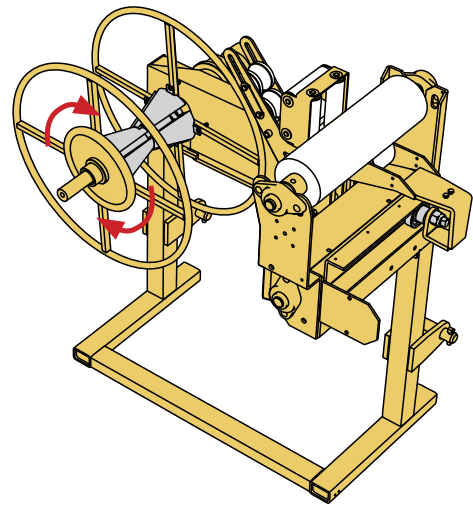
- 8** Activate the machine.
- a.** Check the direction of rotation of the drum holder. If the drum holder rotates in the wrong direction, invert the connection of the hydraulic pipes to the tractor.
 - b.** Check that the feeding roller is moving from side to side.



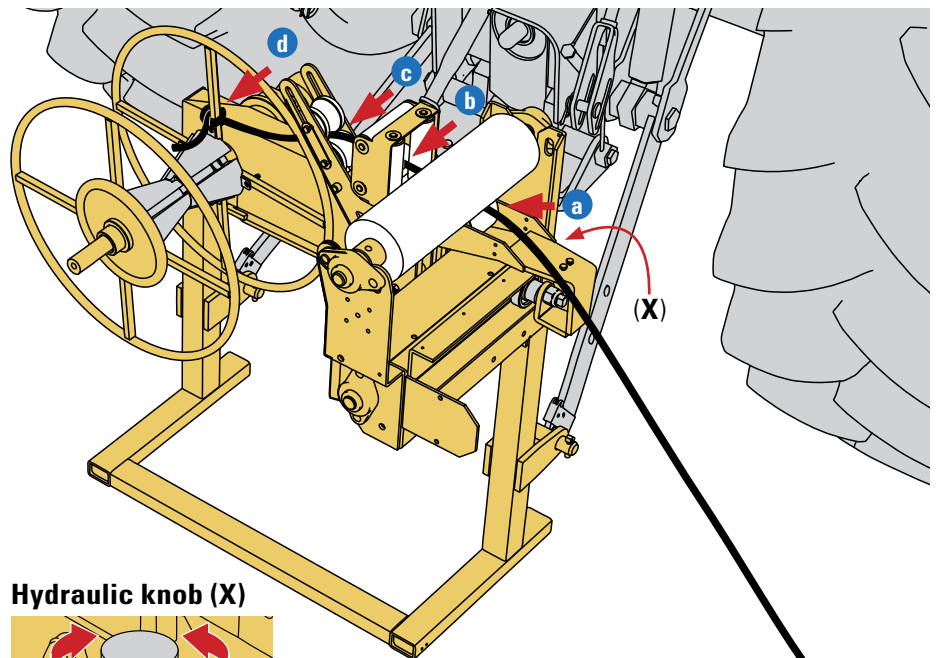
- 9** Load the reels and cones onto the axle.



- 10** Fasten the locking nut on the axle.



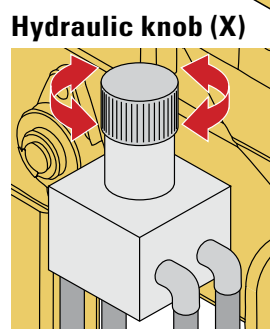
- 11** Thread the dripperline:
- a.** Through the feeding rollers
 - b.** Through the roller box
 - c.** Through the recoiling guide.
 - d.** Tie the end of the dripperline to the reel bar next to the cone.



ATTENTION
When recoiling dripperline for reuse, make sure that the dripperline on the drum is recoiled with the drippers facing out.

- 12** Start recoiling slowly and increase the speed gradually using the hydraulic knob (X) located behind the feeding rollers.

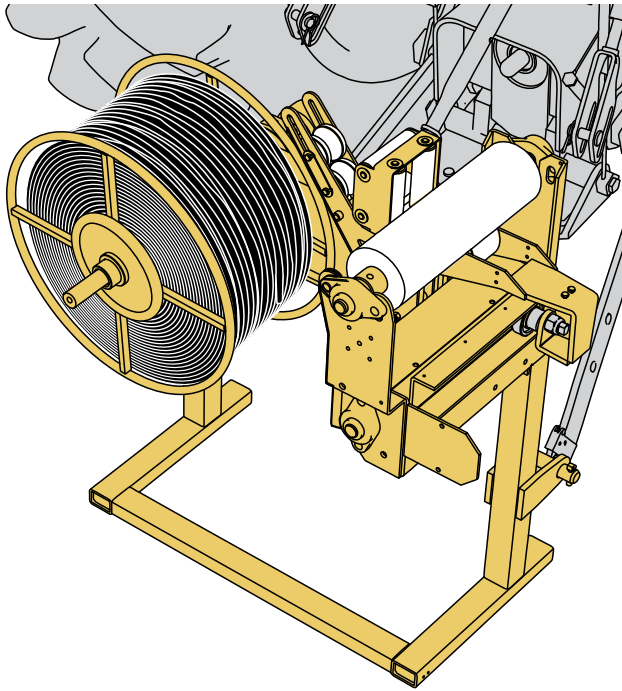
Clockwise = faster
Counterclockwise = slower



ATTENTION
Make sure the dripperline is not overstretched; if it is, decrease recoiling speed.

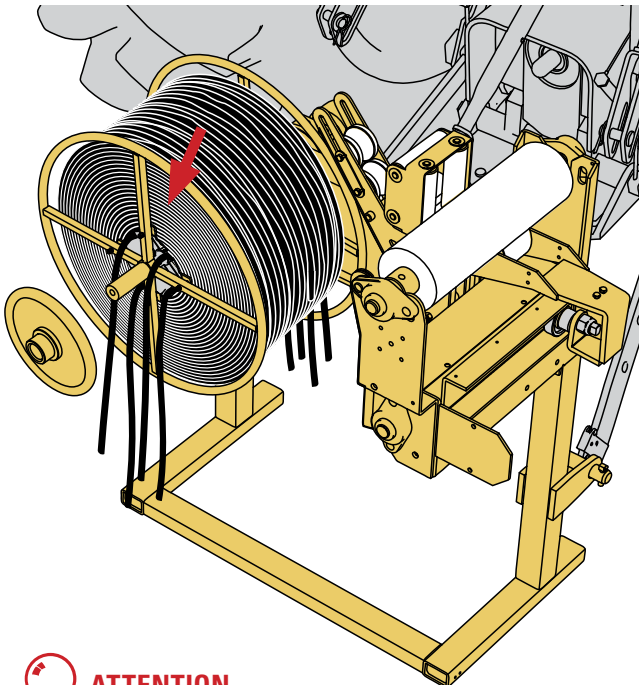
MECHANIZED RECOILING

- 13 Recoil until the reel is full.



When the reel is full:

- 1 Release the locking nut and thread 4 pieces of scrap dripperline, 2 m (7 ft) each, through the 4 slots in the aluminum cones.



ATTENTION

Make sure not to tie the pieces of scrap dripperline around any part of the machine. This will prevent the unloading of the dripperline roll.



TIP

When recoiling for recycling, it is possible to recoil more than one dripperline at once.



ATTENTION

Do not recoil more than 3 dripperlines at once.

Above ground (DI):

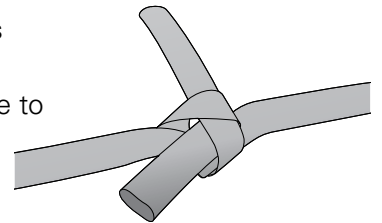
The dripperlines should be properly released from the soil in advance.

Sub-surface (SDI):

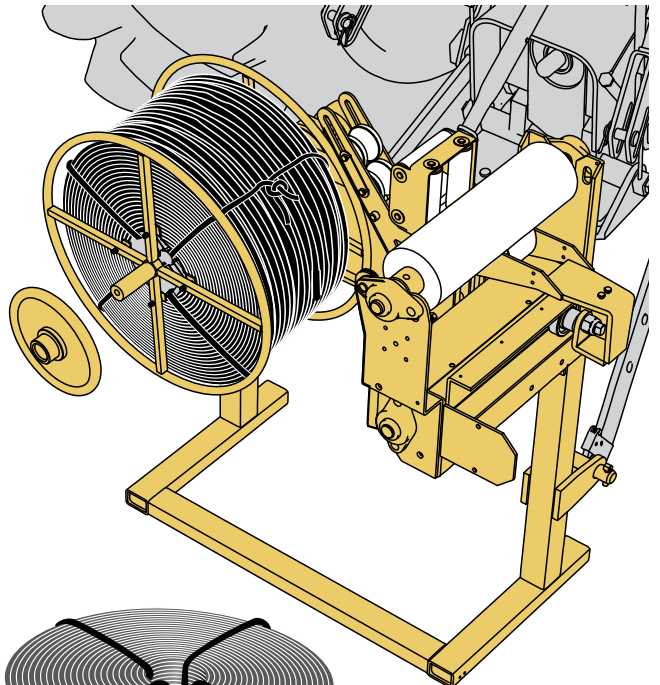
The dripperlines should be properly extracted from the soil in advance.

When a dripperline is completely recoiled:

Tie the next dripperline to the previous one and continue recoiling.



- 2 Tie the 4 pieces of scrap dripperline around the dripperline roll and unload it.



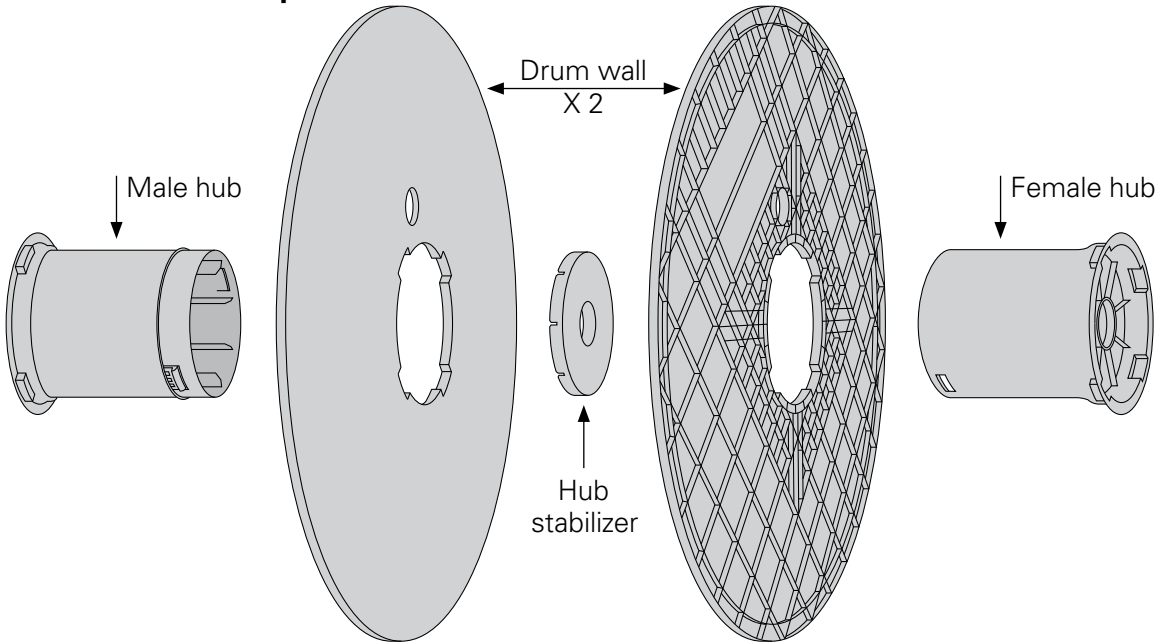
ACCESSORIES

Reusable plastic drums

Available as kits of 9 disassembled units - Netafim™ catalog no. 80600-002600

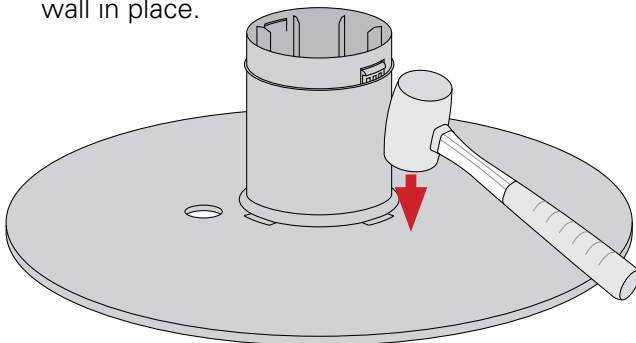
Reusable plastic drums are used for recoiling dripperlines at the end of a growing season and storing them for reuse the next season. They allow convenient dripperline recoiling, safe storage and easy reuse.

Each unit consist of 5 parts

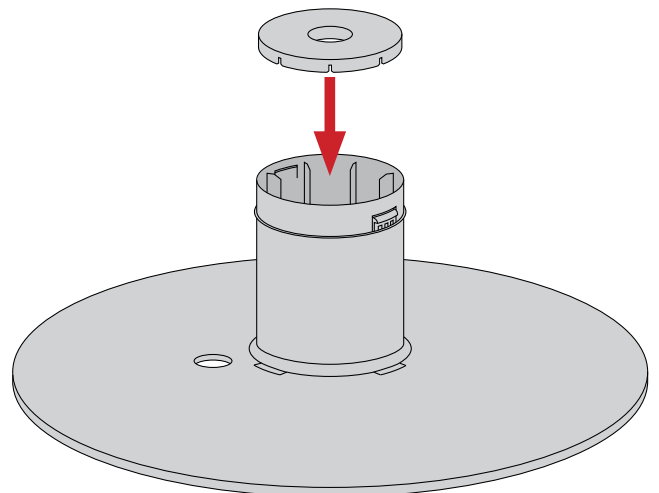


Reusable plastic drum assembly

- 1 Insert one of the hubs into one of the drum walls. Use a rubber mallet to secure the drum wall in place.
- 2 Insert the hub stabilizer into the hub. Make sure that the slots around the stabilizer fit the ribs inside the hub.

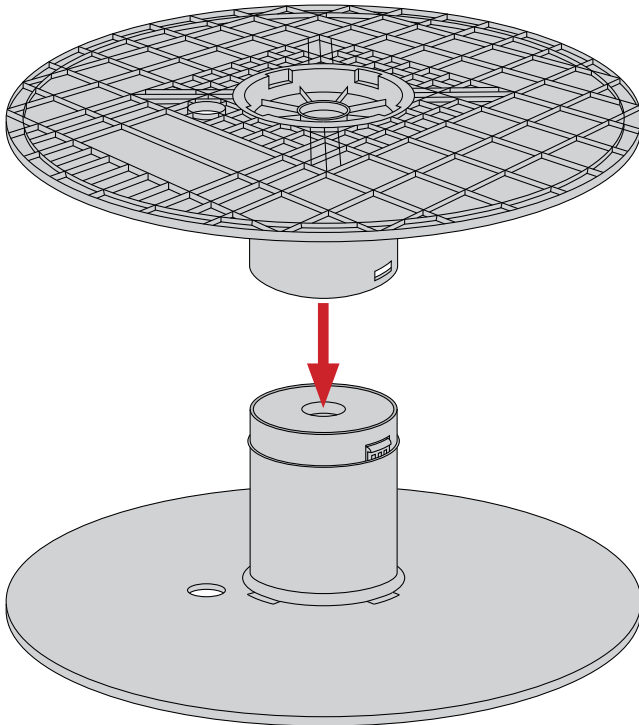


Repeat the action with the other hub and drum wall.

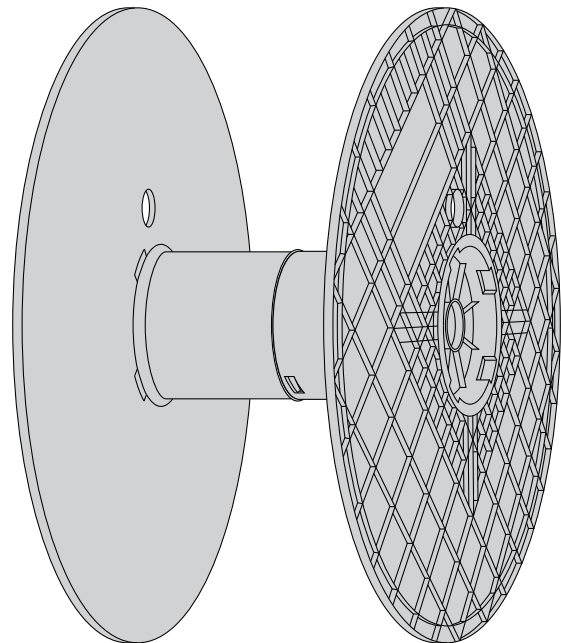


ACCESSORIES

- 3 Piece the two parts together.
Press the upper part onto the lower one until the snap-connectors are correctly snapped.



Assembled reusable plastic drum



- Reusable plastic drums should be used for recoiling dripperline for reuse.
- It is possible to order dipperlines wound on these drums, instead of the standard, disposable corrugated cardboard drums.



NOTE

Since the dripperline will not be recoiled on the drum with the same efficiency as it was in the factory, 20% extra empty plastic recoiling drums should be purchased in advance.

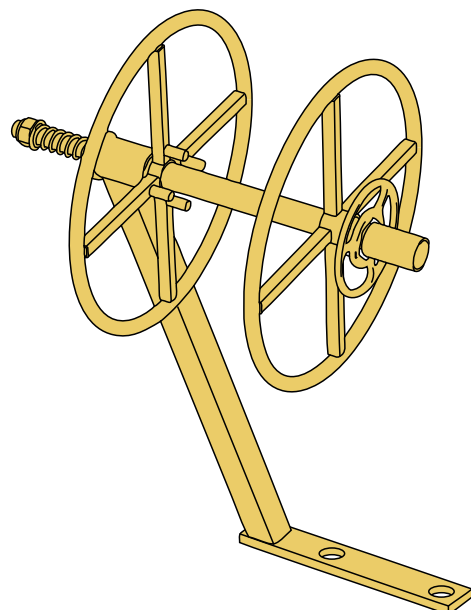


NOTE

After reusing recoiled dripperlines, do not disassemble the reusable plastic drums. Store them fully assembled for future reuse.

Dripperline drum holder

- | Drum holder | Netafim™ catalog No. |
|----------------------|----------------------|
| • For 100X100 mm bar | 77200-001760 |
| • For 150X150 mm bar | 77200-001750 |

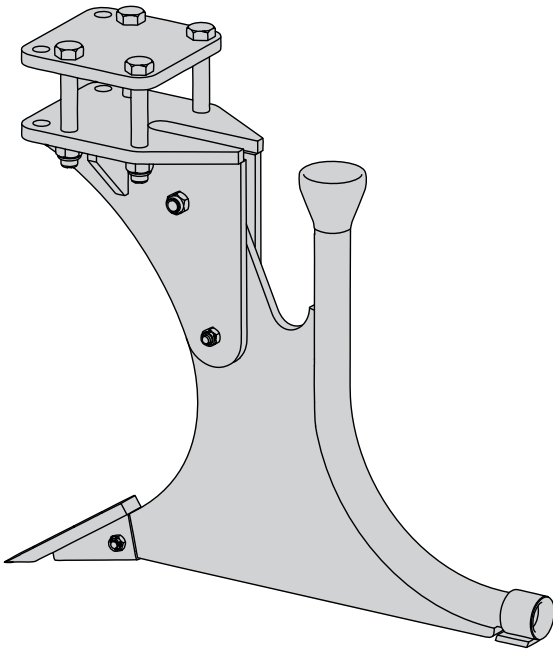


ACCESSORIES

Insertion shank

Insertion shank

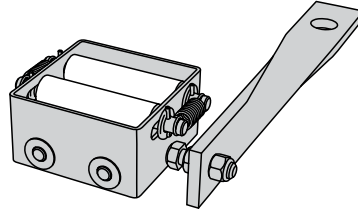
- 30 cm for 150X150 mm bar 77200-001665
- 30 cm for 100X100 mm bar 77200-001667
- 50 cm for 150X150 mm bar 77200-001650
- 50 cm for 100X100 mm bar 77200-001664



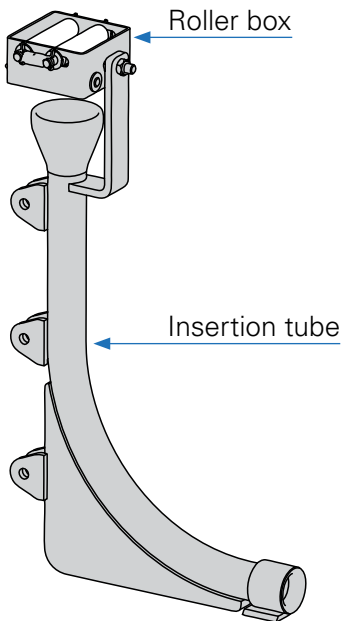
Roller box

Roller box

- With connection bar 77200-001740
- Without connection bar 77200-006250



Insertion tube and roller box



Insertion tube

- 50 cm, without roller box 77200-006150
- 50 cm, with roller box 77200-006160
- 30 cm, without roller box 77200-006100
- 30 cm, with roller box 77200-006110

Netafim™ catalog No.



ATTENTION

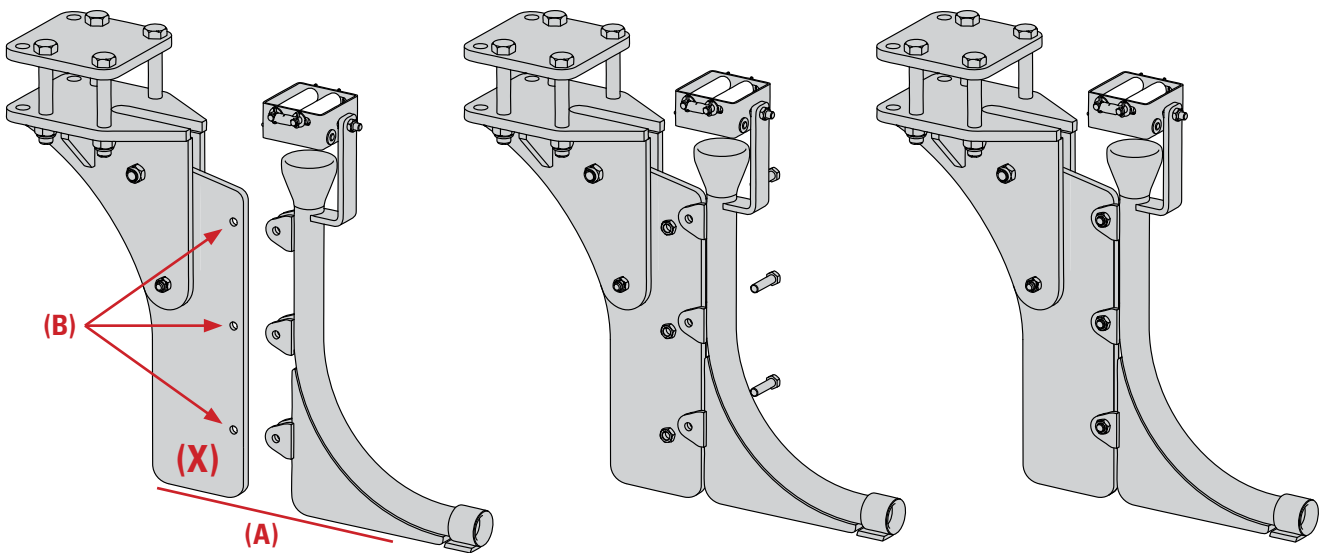
When inserting or laying Netafim™ dripperlines using machinery not provided by Netafim™, whether purchased from a third-party supplier or self-made, care must be taken to install the Netafim™ dedicated insertion tube and roller box.

The dedicated seamless insertion tube and roller box offered by Netafim™ is especially designed to ensure smooth insertion without damaging the dripperlines.

ACCESSORIES

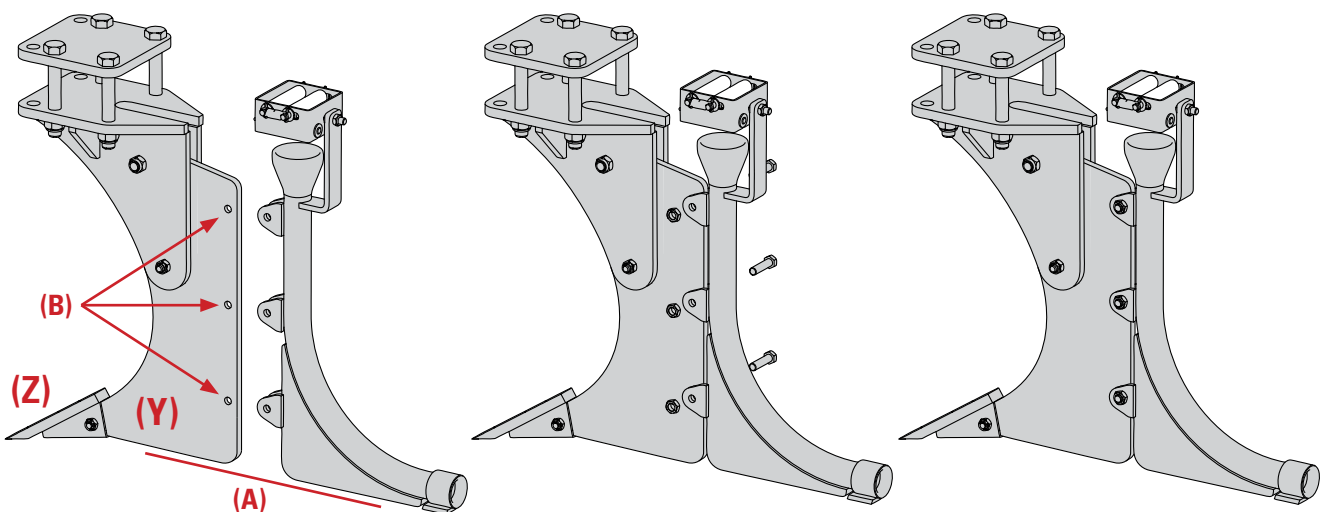
Installing the insertion tube and roller box for laying dripperlines

- 1 Make a suitable support part (X)
 - A. Make sure the support part does not protrude from the bottom of the insertion tube (A).
 - B. Drill 3 holes in the support part corresponding to the location of the connecting bolts of the insertion tube.
- 2 Connect the insertion tube and roller box to the support part with the 3 supplied bolts.



Installing the insertion tube and roller box for inserting dripperlines

- 1 Make a suitable support part (Y) fitted with a plowshare (Z).
 - A. Make sure the support part does not protrude from the bottom of the insertion tube (A). The plowshare is installed at an angle and protrudes slightly.
 - B. Drill 3 holes in the support part corresponding to the location of the connection bolts of the insertion tube.
- 2 Connect the insertion tube and roller box to the support part with the 3 supplied bolts.



NOTE

The support parts (X and Y) and plowshare (Z) are not supplied with the insertion tube and roller box, and should be made/provided by the user. They are shown here for explanatory purposes only.

ACCESSORIES



TIP

Dedicated end-of-dripperline holding spike

A dedicated end-of-dripperline holding spike can be made easily

1 Use an 8 - 10 mm-diameter iron bar.

2 Cut 5 sections:

A. 25 cm

B. 80 - 100 cm

C. 30 cm

D. 20 cm (2 pcs.)



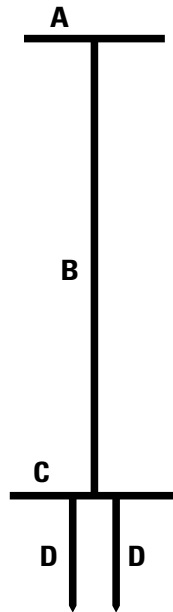
CAUTION

To prevent injury, remove shavings by sanding the ends of each section.

3 Sharpen one end of section D (2 pcs.) into a conic shape. This will facilitate insertion of the spike into the soil.

4 Weld the parts together.

5 Coat the whole spike with rust-protective paint (recommended).



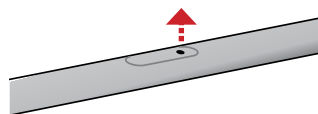
Using the dedicated end-of-dripperline holding spike

1 Lay the end of the dripperline on the soil at the end of the bed.



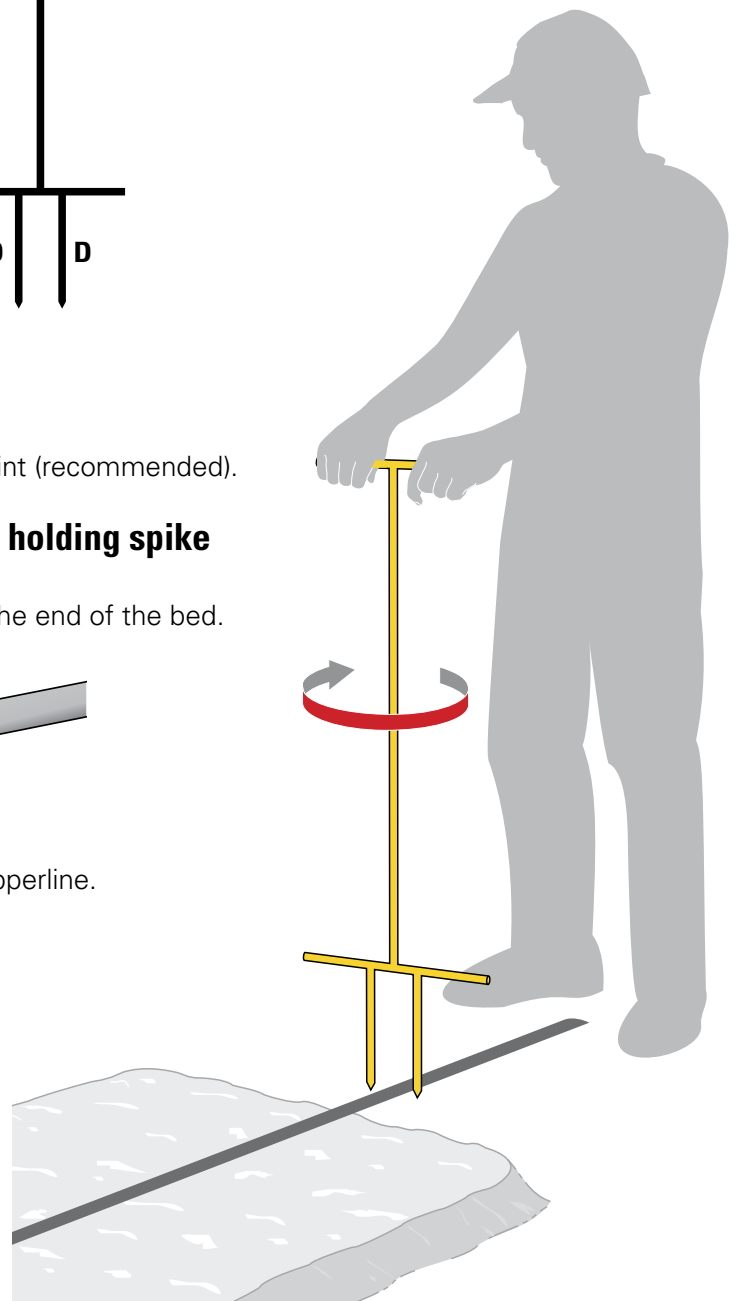
CAUTION

Make sure that the dripperline is laid on the bed with the drippers facing up.



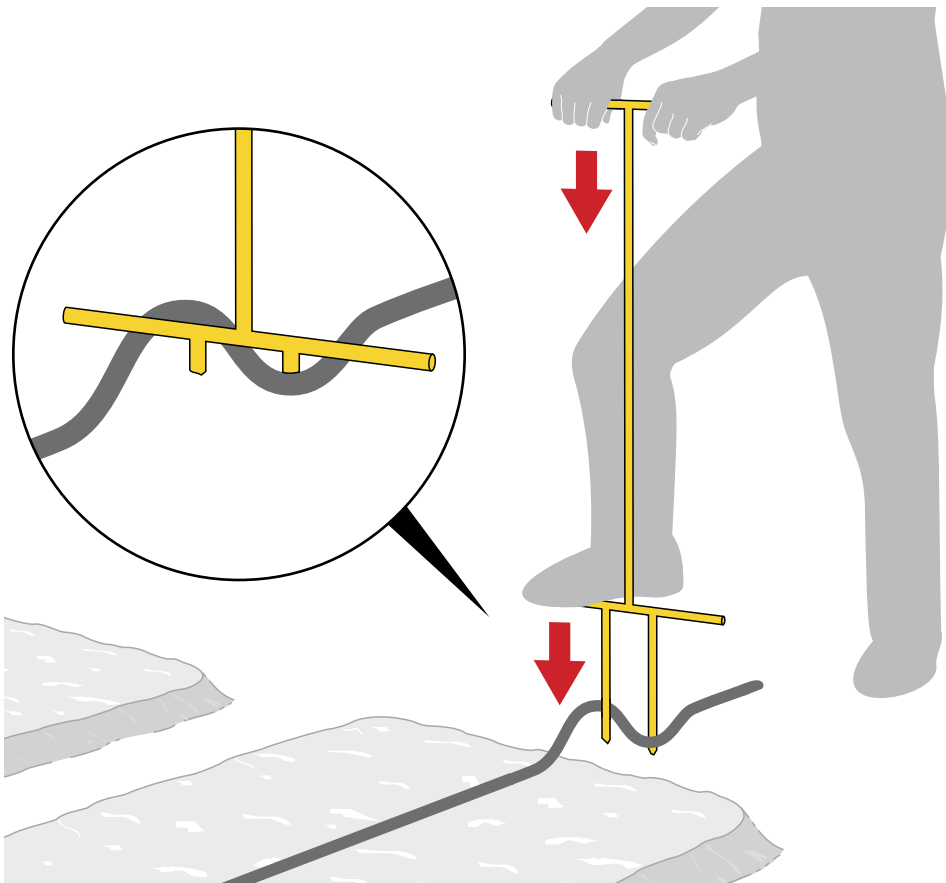
2 Position the spike so that it straddles the dripperline.

3 Rotate the spike half a turn (180 degrees).



ACCESSORIES

- 4 Push the spike down to insert its fork-shaped end into the soil.



- 5 Check that the dripperline is securely held.

See the range of pipe connectors and many other useful accessories in the Fittings and Accessories - Product Catalog and the Connectors - Product Catalog at <http://www.netafim.com/irrigation-products-technical-materials>

SUNBURN PREVENTION

Prevention of sunburn on dripperlines laid under transparent plastic sheets in mulch bed applications

Sunburns are frequently seen in dripperlines used under transparent plastic sheets in mulch bed application. The resulting punctures on such dripperlines are essentially caused by laying the dripperlines on the soil surface, when these dripperline are in direct contact with the transparent plastic sheet.

Water evaporating from the soil due to heat condenses, forming water droplets on the undersurface of the transparent plastic sheet. Each droplet acts as a lens, causing the sun rays to focus on the dripperline, resulting in burns and damage.



NOTE

Transparent plastic sheets are used to raise the bed temperature.

If the use of transparent plastic sheets is not necessary, use opaque plastic sheets instead. Since opaque plastic sheets do not allow sun rays to pass through, the sun cannot harm the dripperlines even if they are laid on the soil surface.



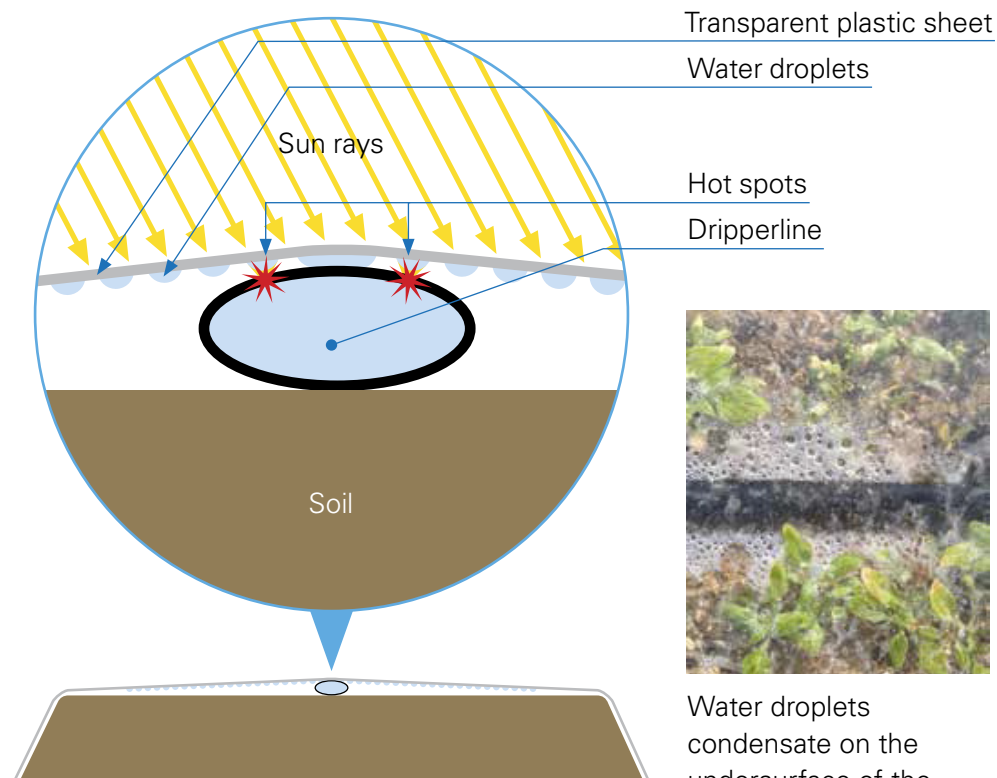
WARNING

Wherever transparent plastic sheets are used, strictly ensure that dripperlines are not in direct contact with the plastic sheets to avoid damages caused by the lens effect.



Wrong use

Do not lay the dripperlines on the soil surface directly under transparent plastic sheets.



The lens effect of water droplets and the resulting damage to the dripperline



Water droplets condensate on the undersurface of the transparent plastic sheets



Sun damage to the dripperline

SUNBURN PREVENTION



Correct use

If the use of transparent plastic sheets is necessary:

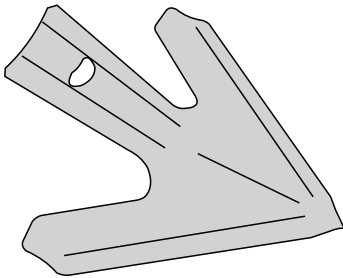
Dripperlines should be inserted under the soil surface or laid in a shallow groove to protect them from the lens effect of water droplets and avoid consequent damage.

Dripperlines laid on the soil surface

Dripperlines used under transparent plastic sheets should be laid into a shallow groove, as shown.

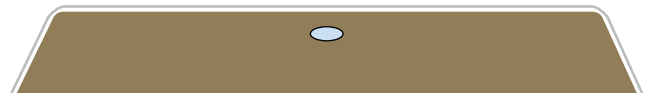


Use a wing plow.



Dripperlines inserted under the soil surface

Dripperlines used under transparent plastic sheets should be inserted at a depth of 3 - 5 cm (1.2 to 2 in) under the soil surface.



Make sure the inside of the insertion tube is clean.



NOTE

A dirty or partially obstructed insertion tube will damage the drippers during insertion.



TIP

To clean the inside of the insertion tube, flush the tube from the top with water at high pressure.

SPECIAL ORDER FORM

To order a machine that suits your specific needs, please fill out the form below and send it to your Local Netafim™ representative:

Description:

Agronomy

Crop: _____

Country: _____

Soil type: (silt/clay/sand, heavy/light, rocky): _____

Bed width (in cm): _____

Tillage type: (open field/beds/orchards/other - specify): _____

Number of dripperlines per bed (in cm): _____

Dripperline spacing (in cm): _____

Machinery

Required action: _____

(insertion*/laying/extraction/recoiling for reuse/recoiling for recycling)

*For insertion - required insertion depth (in cm): _____

Type of dripperlines (thin-/medium-/thick-walled dripperlines): _____

Dripperline diameter (in mm): _____

Dripperline wall thickness (in mm/mil): _____

Applying tractor hp: _____

Number of applying units required: _____

General

Required supply date: _____

Other information: _____

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