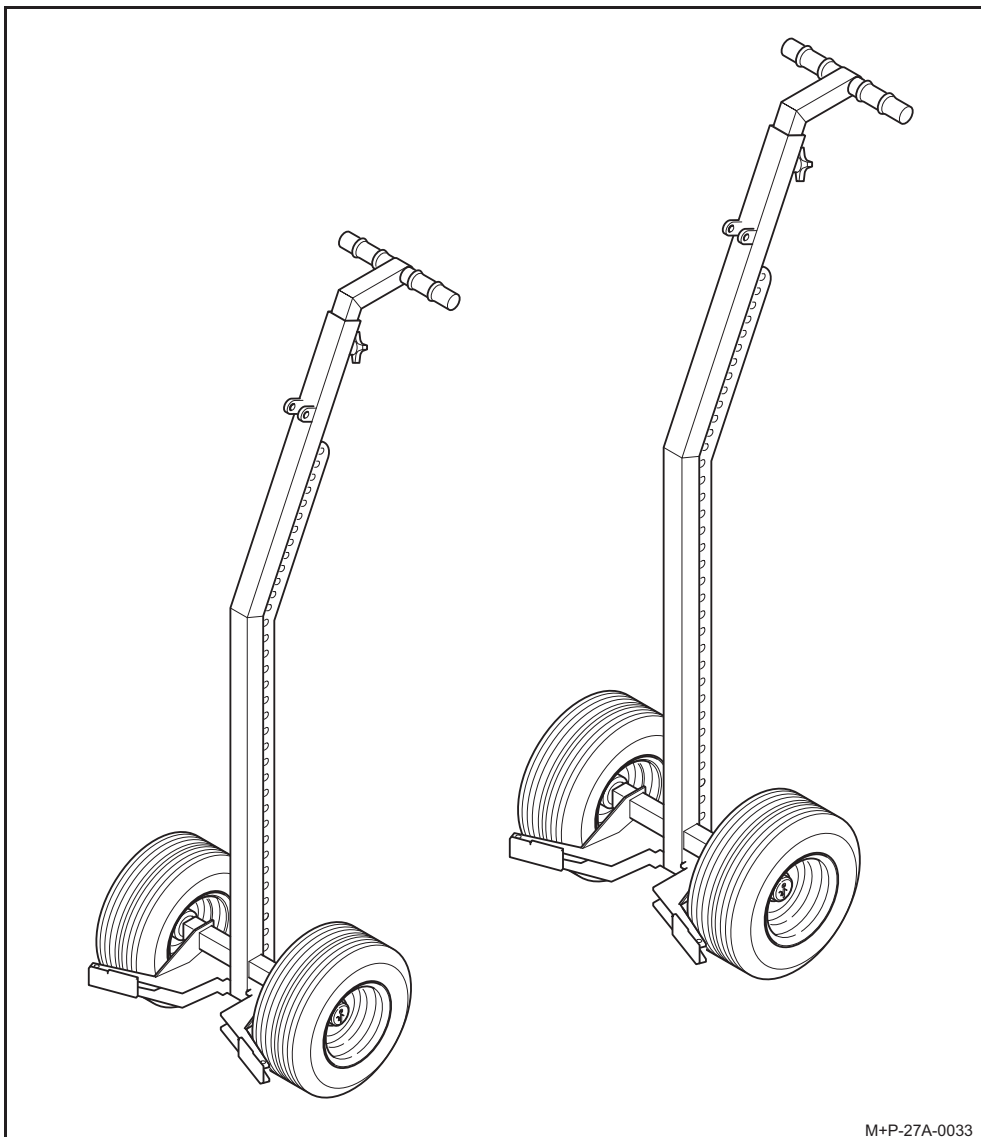


modatech 

Die Transportkarre
für schwere Lasten.

Operating Manual

Hand Cart



M+P-27A-0033

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As at: 11/2010

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1. GENERAL SAFETY INFORMATION



Risk of Injury:

The following safety information should be observed, otherwise it may cause injury or damage:

- Read this operating manual carefully before beginning with the assembly and operation of the hand cart.
- All objects and suspended loads must always be secured with the tension belt.
- Do cross any obstacles (such as curbstones etc.) when transporting objects, since the hand cart may otherwise tip over.
- Appropriate personal protective equipment (such as protective gloves, safety shoes etc.) should be worn during any work.
- Any liability is ruled out for damage caused by non-product-specific storage, inappropriate operation or improper use.
- The technical specifications of this operating manual must be observed in order to maintain the full statutory warranty.
- We reserve the right to make technical changes.

2. GENERAL INFORMATION

2.1. INTENDED USE

The hand cart is used to lift and transport bulky, heavy objects.

The hand cart may be operated only by a single person.

The lifting height is variably adjustable. This allows vessels of 300–800 mm height + diameter to be transported with the TK 1 hand cart and vessels of 400–1000 mm height + diameter to be transported with the TK 2 handcart. The maximum axle load capacity of the hand cart is 500 kg.

2.2. IMPROPER USE

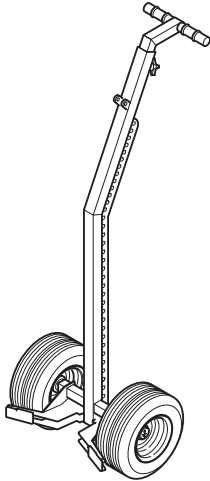
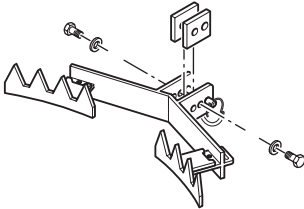
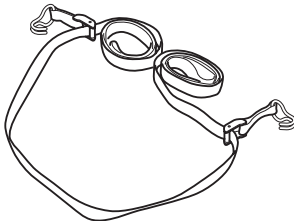
It is not permitted to use the hand cart in any other way than described under “Intended use!”.

Objects heavier than 500 kg must not be lifted and transported with the hand cart.

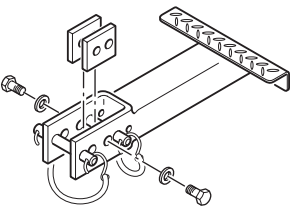
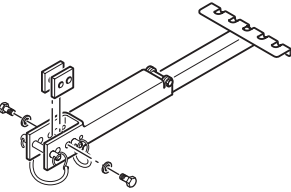
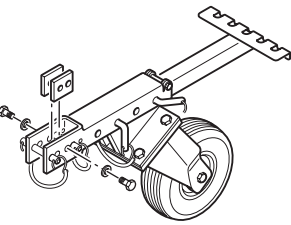
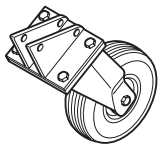
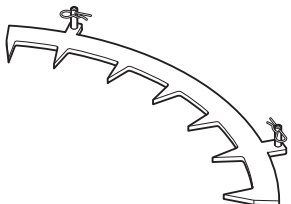
The hand cart must not be operated by more than one person at a time.

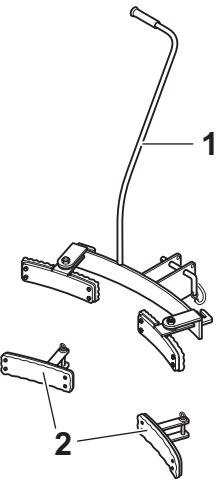
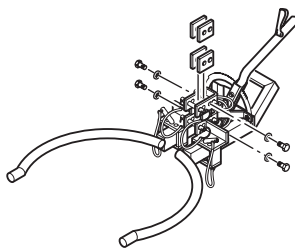
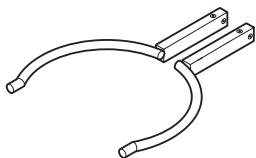
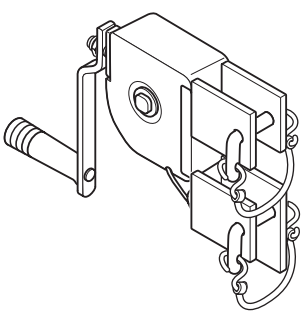
3. OVERVIEW OF THE HAND CART

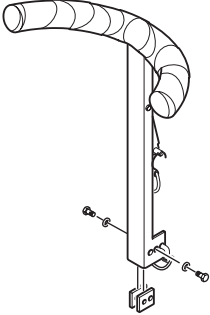
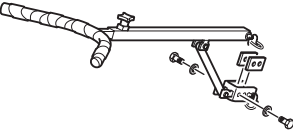
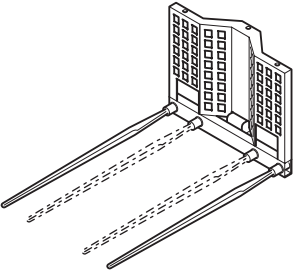
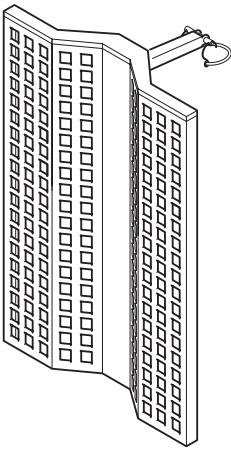
3.1. BASIC EQUIPMENT

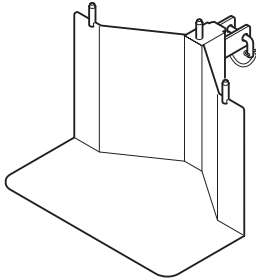
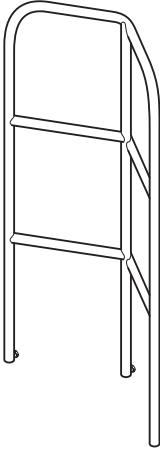
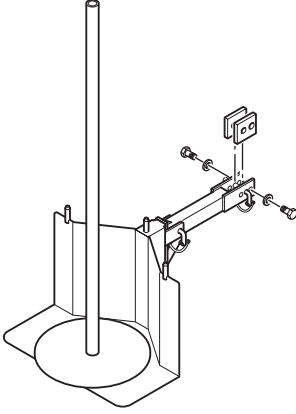
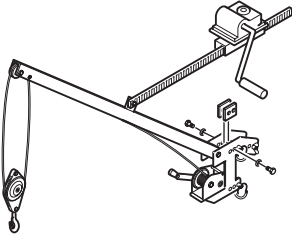
	Item name	Item no.	
		TK 1	TK 2
	Operating Manual	1601	1701
	Bottom gripper	1602	1702
	Tension belt	1603	

3.2. ATTACHMENTS

	Item name	Item no.	
		TK 1	TK 2
	Step	1604	1704
	Step (folding)	1605	1705
	Step (folding) with a stabilising wheel	1621	1721
	Support wheel (spare part)	1619	1719
	Sharp teeth	1606	1706

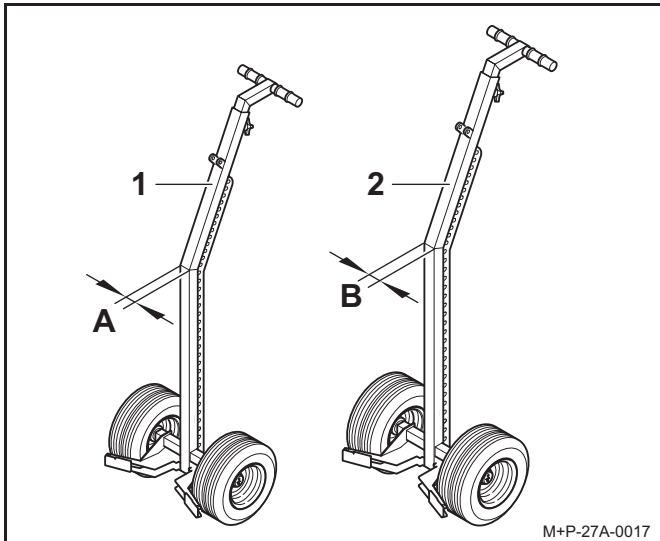
	Item name	Item no.	
		TK 1	TK 2
	Clamping jaws (1) with supporting jaws (2)	1607	1707
	Plant trough lifter Ø 400–700 mm	1608	1708
	Gripper for plant trough lifter Ø 600–1000 mm		1709
	Winch for plant trough lifter	1620	1720

	Item name	Item no.	
		TK 1	TK 2
	Branch holder	1610	1710
	Trunk holder	1611	1711
	Conveyor fork	1612	1712
	Two prongs additionally available as required	1613	1713
	Stacking grid Fixture for conveyor fork	1614	1714

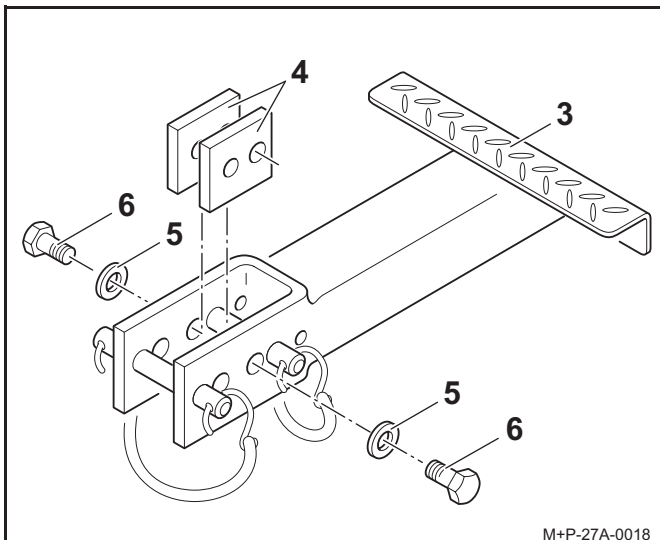
	Item name	Item no.	
		TK 1	TK 2
	Transport shovel	1615	1715
	Transport shovel grid Fixture for transport shovel	1616	1716
	Fence unwinder	1617	1717
	Crane	1618	1718

4. ASSEMBLY

4.1. INSTALLING SPACING WASHERS



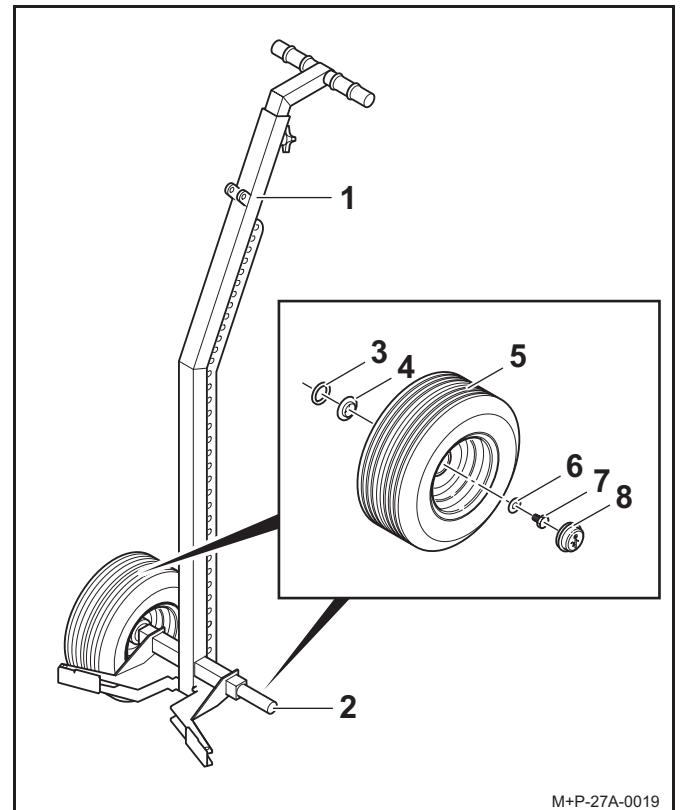
- 1 TK 1 hand cart
- 2 TK 2 hand cart
- A 35 mm
- B 50 mm



- 3 Attachment (e.g. step)
- 4 Spacing washers
- 5 Shims
- 6 Screws

All attachments (3) are designed for the TK 2 hand cart (2). Install the spacing washers (4) in the displayed order when attaching attachments (3) to the TK 1 hand cart (1).

4.2. INSTALLING WHEELS



- 1 Operating Manual
- 2 Wheel hub
- 3 Shim
- 4 Spacing washer
- 5 Wheel
- 6 Shim
- 7 Wheel bolt
- 8 Protective cap

1. Clean the wheel hub (2) and apply grease to it.
2. Install the wheel (5) in the illustrated order.
3. Check the tyre pressure (1.9 bar) and, if necessary, add air.

4.3. INSTALLING ATTACHMENTS

⚠ Risk of Injury:

Secure the hand cart against tipping over when installing attachments, otherwise it may cause injury or damage.

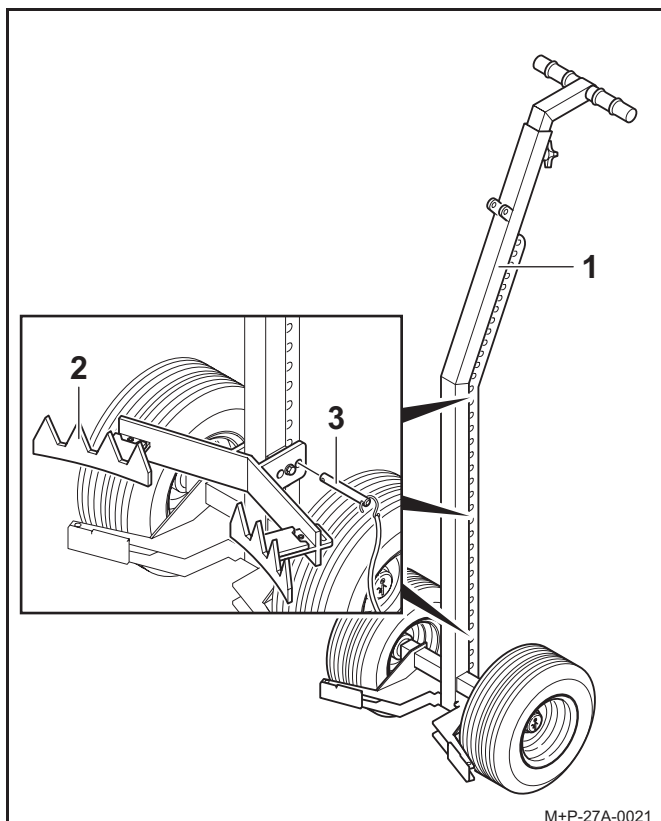
The following attachments are height adjustable:

- Bottom gripper
- Step
- Step (folding)
- Step (folding) with a stabilising wheel
- Clamping jaws
- Plant trough lifter
- Branch holder
- Trunk holder

The following attachments are not height adjustable:

- Crane
- Fence unwinder
- Transport shovel with transport shovel grid
- Conveyor fork with stacking grid
- Sharp teeth

All attachments are attached and removed in the same way.



- 1 Operating Manual
- 2 Attachment (e.g. bottom gripper)
- 3 Pin

Attaching

Secure the attachment (2) to the hand cart (1) with the pin (3) at the desired height.

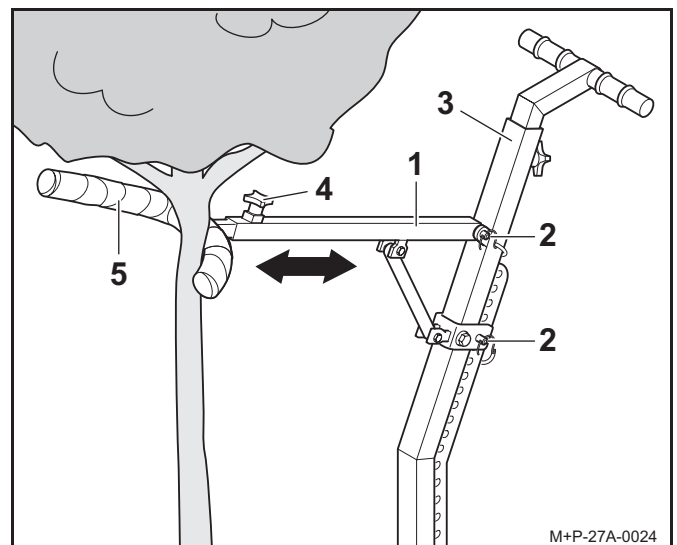
Removal

1. Take out the pin (3).
2. Remove the attachment (2) from the hand cart (1).

4.3.1. Trunk holder

Note:

For plants with long trunks, the trunk or branch holder must be used in combination with the bottom gripper.



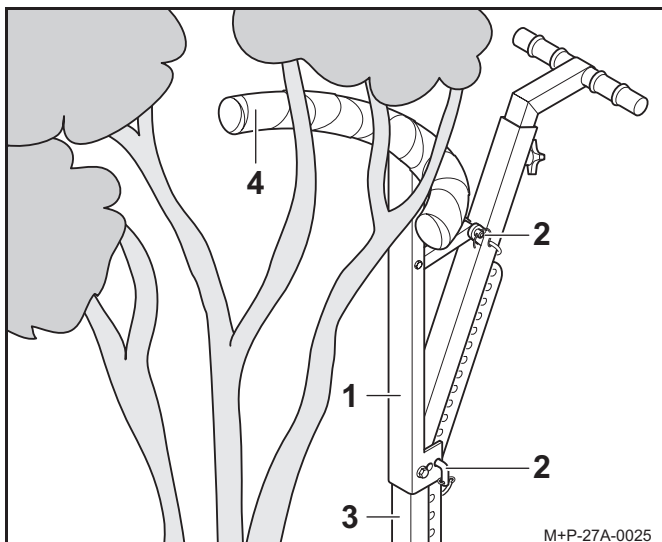
1. Mount the trunk holder (1) with the pin (2) onto the hand cart (3).
2. Undo the bolt (4) and align the holder (5) so that the plant is in the desired position.
3. Tighten the bolt (4).

⚠ Risk of Injury:

Always screw the bolt (4) tight to avoid injuries, otherwise it may cause injury.

4. Wind sufficient jute around the holder (5) to prevent the bark from becoming damaged.

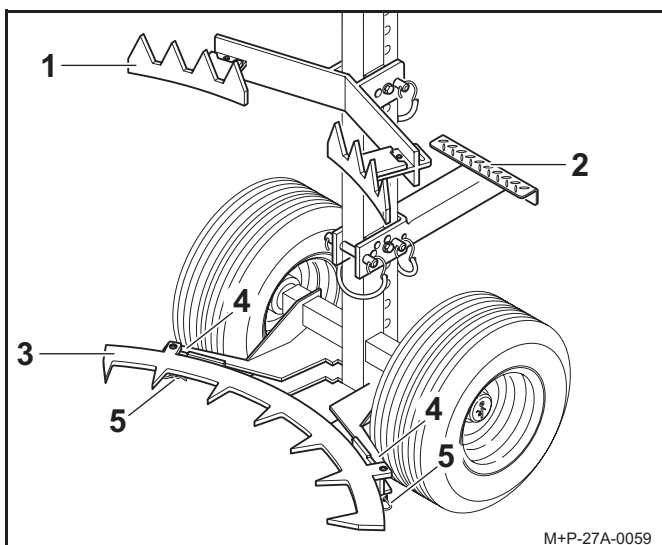
4.3.2. Branch holder



1. Mount the branch holder (1) with the pin (2) onto the hand cart (3).
2. Wind sufficient jute around the holder (4) to prevent the bark from becoming damaged.

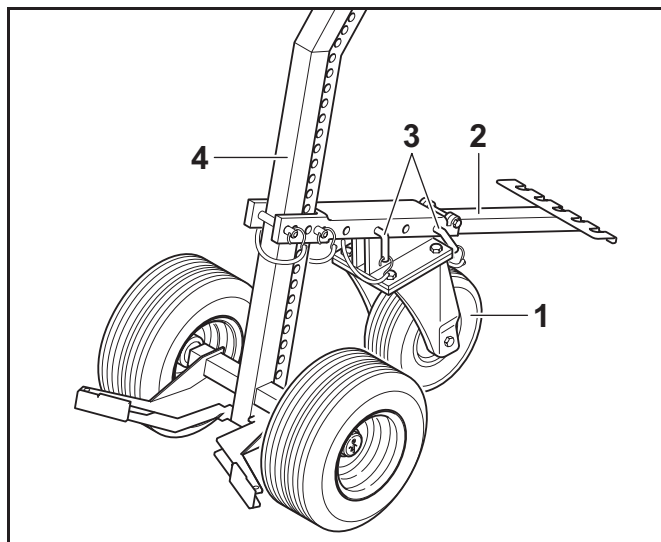
4.3.3. Sharp teeth

The sharp teeth are suitable for transporting tree trunks and bales. They can be used only in combination with a bottom gripper which serves to secure the tension belt.



1. Install the bottom gripper (1) and step (2), see page 6.
2. Mount the gripping teeth (3) in the fixture (4) and secure them with a cotter pin (5).

4.3.4. Step (folding) with a stabilising wheel

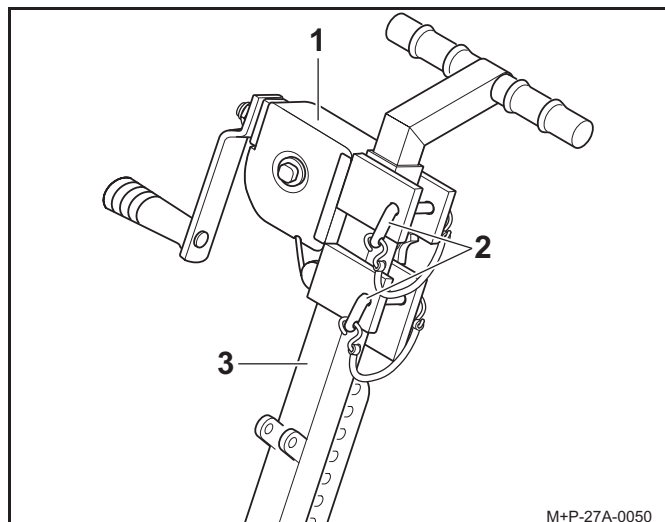


1. Secure stabilising wheel (1) at the desired distance to step (2) using bolt (3).
2. Mount step (2) to hand cart (4).

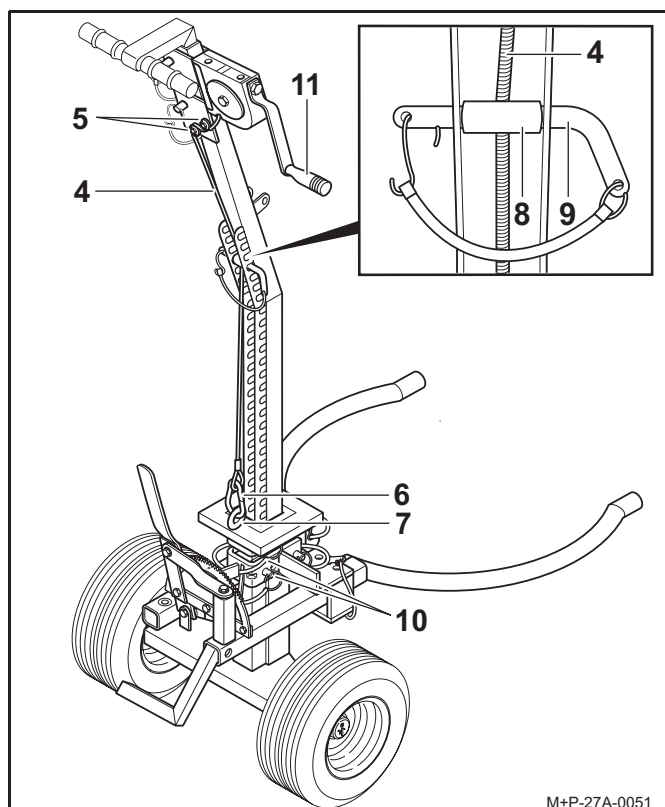
4.3.5. Winch for plant trough lifter

The winch is used to raise and lower the plant trough lifter at the TK 1 and TK 2 hand cart.

1. Install the plant trough lifter, see page 6.



2. Mount the winch (1) with the pin (2) onto the hand cart (3).

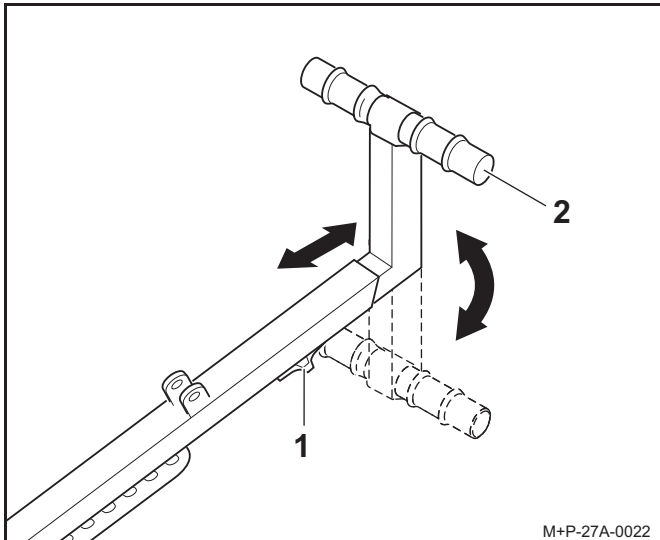


3. Place the cable (4) around the guide rollers (5) and hook it into the plant trough lifter (7) with a snap hook (6).
4. Deflect the cable (4) with sleeve (8) and pin (9) at the pillar.
5. Raise the plant trough lifter (7) until the pin (10) is easy to pull out.
6. Tilt the hand cart (3), raise or lower the plant trough lifter (7) with the winch (11) and secure it with the pin (10) again.

5. OPERATION

5.1. ADJUSTING THE HANDLE

The hand cart handle can be adjusted in three different heights.



1. Undo the bolt (1).
2. Push the handle (2) out or in to the desired length.
3. Screw the bolt (1) tight in the bore holes.

⚠ Risk of Injury:

Always screw the bolt (1) tight in the bore holes, since otherwise injuries may occur.

Note:

The handle (2) can be turned when using the fence unwinder and for the procedure for heavy loads.

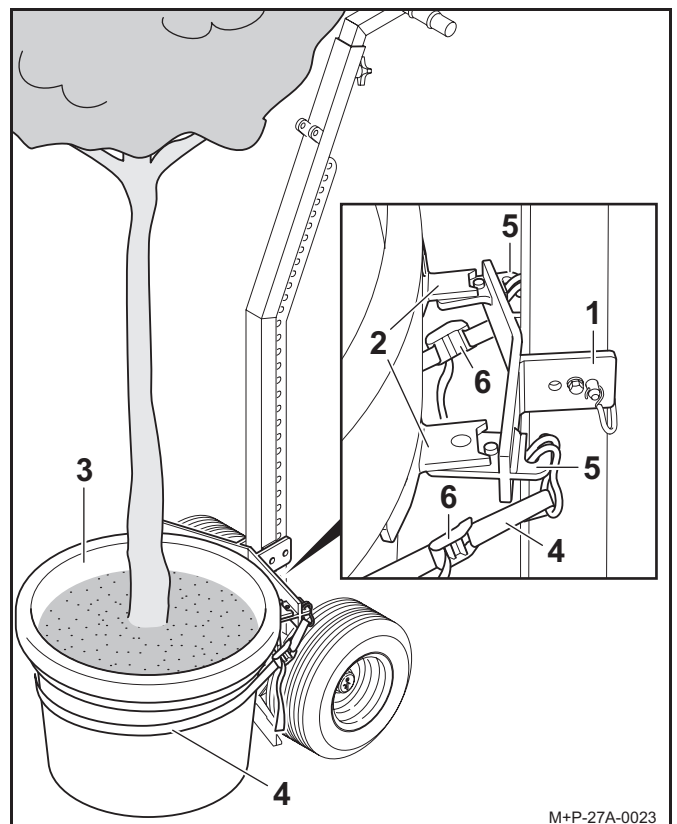
5.2. LIFTING/TRANSPORTING VESSELS

⚠ Risk of Injury:

The following hazard warnings should be observed, otherwise it may cause injury or damage:

- Always use the tension belt to secure.
- Risk of tipping when lifting on an uneven surface.
- Risk of tipping when crossing obstacles (such as curbstones etc.).
- Risk of tipping when driving on embankments and slopes.
- Braking is only possible by setting down the vessels.

5.2.1. With bottom gripper

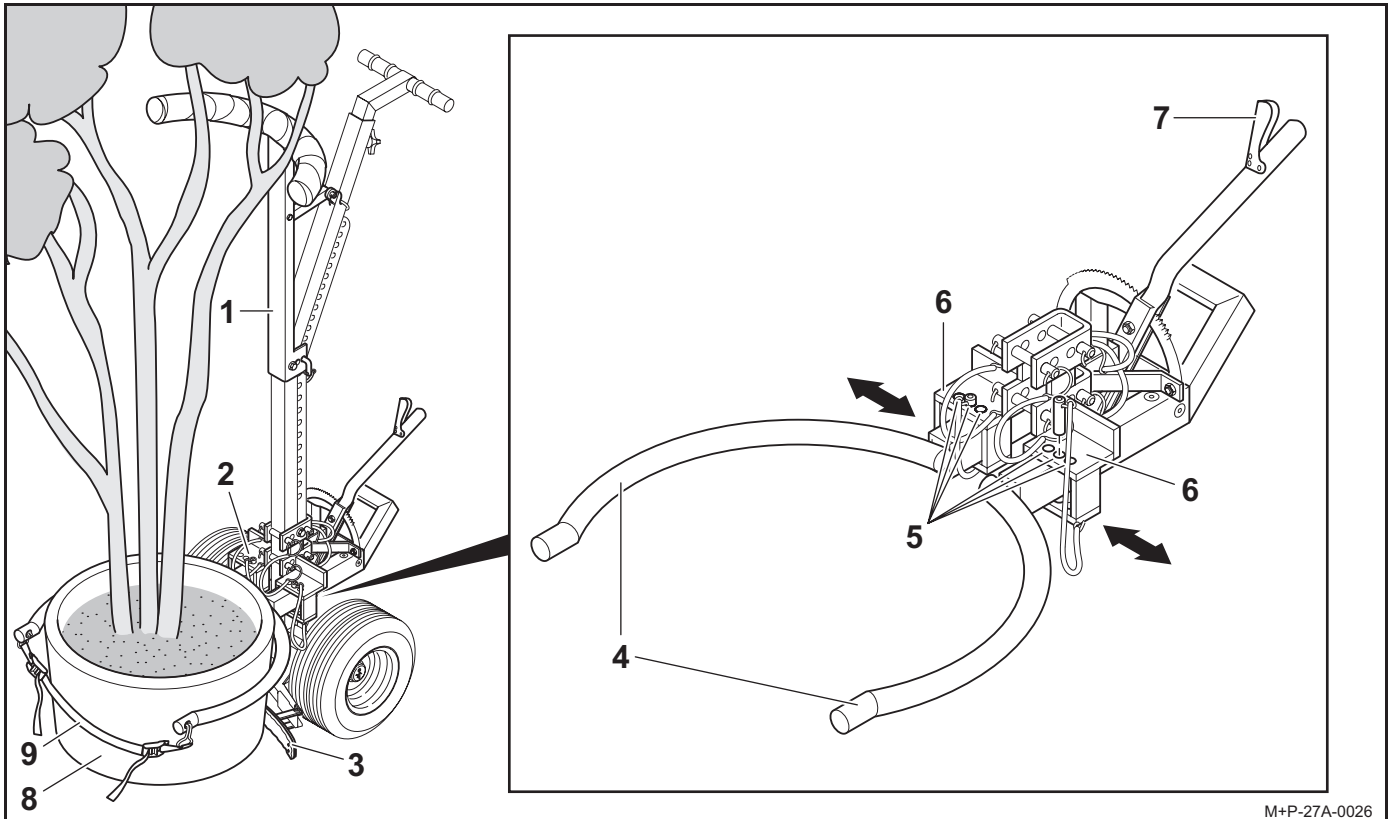


1. Install the bottom gripper (1) and a step (2), see page 6.
2. Apply the gripper (2) under the edge of the vessel (3) if necessary.
3. Place the tension belt (4) around the vessel (3) and hook it into the holders (5).
4. Tighten the tension belt (4) with the clamp (6).

Note:

To transport large plants safely, install a trunk or branch holder, see page 6.

5.2.2. With plant trough lifter

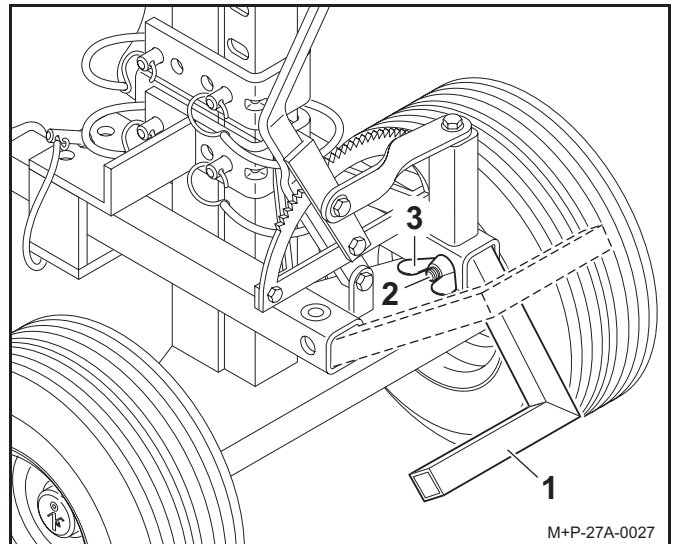


M+P-27A-0026

1. Install the branch holder (1), plant trough lifter (2) and supporting jaws (3), see page 6.
2. Depending on the size of the vessel select a gripper (4) of up to 700 mm or 1000 mm diameter, see page 3.
3. Insert the gripper (4) in the fixtures (6) and secure it with a bolt in the corresponding holes (5), depending on the clearance required.
4. In the event of a plant trough lifter with winch, raise or lower the plant trough lifter to the required height, see page 8.
5. Press the lever (7) for opening the gripper (4) and tighten the vessel (8).
6. Secure the vessel (8) with the tension belt (9).

Turning the step

The step can be repositioned if the plant trough lifter is installed at the very bottom due to the size of the vessel.



M+P-27A-0027

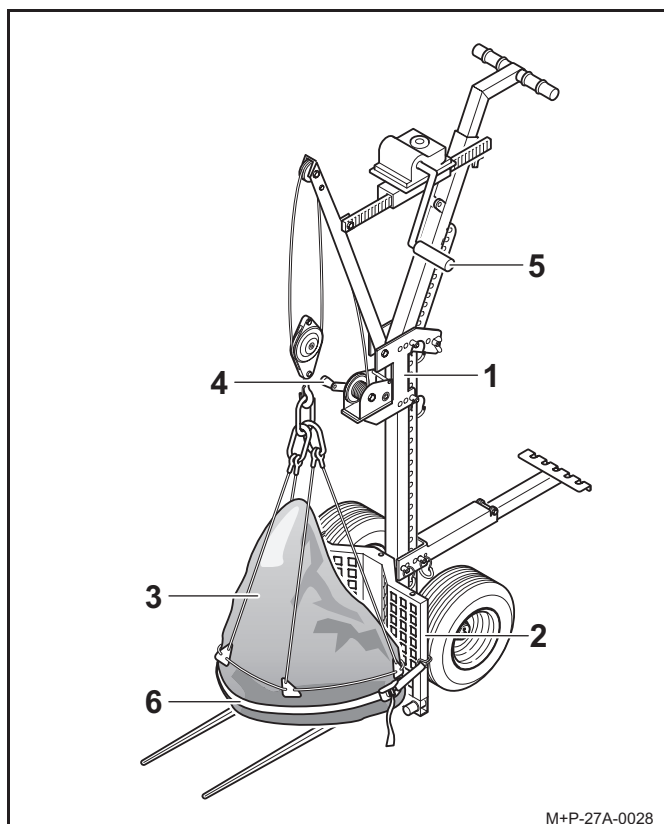
Reposition the step (1) and screw it tight with the bolt (2) and nut (3).

5.3. LIFTING/TRANSPORTING LOADS WITH THE CRANE

Risk of Injury:

The following hazard warnings should be observed, otherwise it may cause injury or damage:

- Always use the tension belt to secure.
- Risk of tipping when lifting on an uneven surface.
- Risk of tipping when crossing obstacles (such as curbstones etc.).
- Risk of tipping when driving on embankments and slopes.
- Braking is only possible by setting down the load.

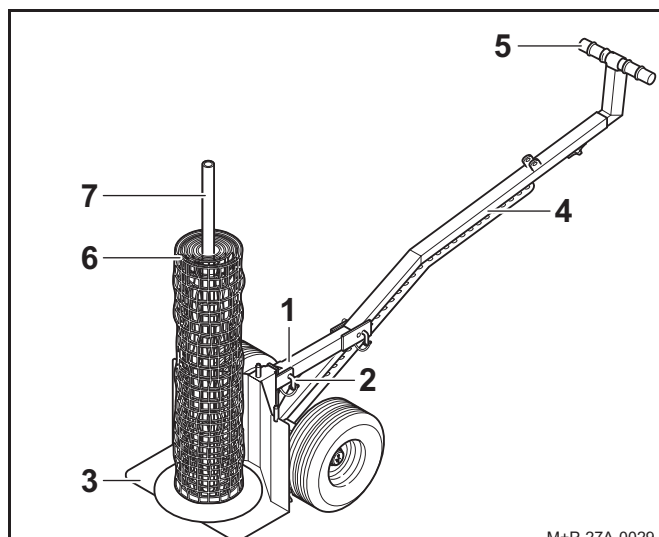


1. Install the crane (1) and conveyor fork (2), see page 6.
2. Suspend the load (3) with appropriate lifting equipment.
3. Use the cranks (4) and (5) to move the load (3) close to ground level to the conveyor fork (2), place it on the prongs and secure it with the tension belt (6).

Note:

The maximum lifting capacity is 150 kg with the extension arm fully extended and 300 kg with the extension arm fully retracted.

5.4. TRANSPORTING/UNWINDING A FENCE



1. Mount the extension (1) with pin (2) onto the fence unwinder (3).
2. Install the fence unwinder (3) on the hand cart (4), see page 6.
3. Turn the handle (5), see page 9.
4. Place the fence (6) on the fixture rod (7).

6. DISPOSAL

6.1. PACKAGING

The transport and protective packaging is made largely of reusable materials. All packaging materials should be disposed of according to local regulations.

6.2. OLD DEVICE

The hand cart and all attachments contain valuable materials and substances which should not be disposed of with the residual waste.

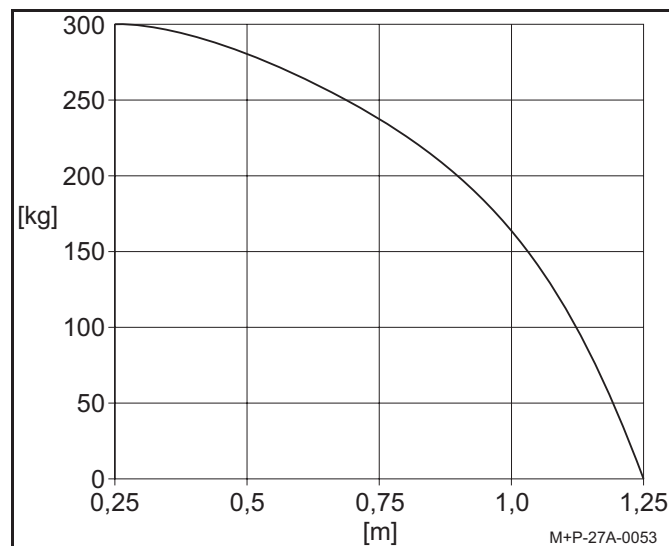
Hand over the old device to a local recycling company for recycling.

7. TECHNICAL DATA

7.1. DEVICE DATA

Material	
Hand cart TK 1, TK 2, bottom gripper, step, step (folding), step (foldable) with a stabilising wheel, plant trough lifter, branch and trunk holder, fence unwinder, transport shovel and grid	Hot-dip galvanized steel
Crane, sharp teeth	Zinc-plated steel
Conveyor fork, stacking grid, TK 2 clamping jaws, TK 1, TK 2 supporting jaws	Powder-coated steel
TK 1 clamping jaws	V2A stainless steel
Weight of TK 1	25 kg
Weight of TK 2	37 kg
Max. axle load	500 kg
Max. crane lifting capacity	300 kg
Tire pressure	1.9 bar
Standards	CE conformity: 2006/42/EC Appendix II A, 2004/108/EC, EN ISO 12100-1:2003, EN ISO 12100-2:2003, EN 1005-1:2001+A1:2008, EN 1005-2:2003+A1:2008, EN 1005-3:2002+A1:2008, EN 1005-4:2005+A1:2008

7.2. LOAD DIAGRAM



[m] metres

[kg] kilogrammes

8. EU DECLARATION OF CONFORMITY

EC Declaration of Conformity

according to machine directive 2006/42/EC, Appendix II A
and EMC directive 2004/108/EC

The manufacturer: Modahum GmbH
Weihermühle 2
82544 Egling/Obb., Germany

hereby declares that the following product

Product description: Hand carts for heavy loads
Functional description: For lifting and transporting bulky heavy objects while going easy on the back
Model description: Hand carts for heavy loads
Type designation: TK1, TK2

meets the provisions of the directive(s) indicated above,
including any amendments which apply at the time of the declaration.

The CE mark has been applied to the machine.

The following harmonised standards have been applied:

EN ISO 12100-1:2003	Safety of Machinery – Basic Concepts, General Principles for Design – Part 1: Basic Terminology, Methodology
EN ISO 12100-2:2003	Safety of Machinery – Basic Concepts, General Principles for Design – Part 2: Technical Principles
EN 1005-1:2001+A1:2008	Safety of Machinery – Human Physical Performance – Part 1: Terms and Definitions
EN 1005-2:2003+A1:2008	Safety of Machinery – Human Physical Performance – Part 2: Manual Handling of Machinery and Component Parts of Machinery
EN 1005-3:2002+A1:2008	Safety of Machinery – Human Physical Performance – Part 3: Recommended Force Limits for Machinery Operation
EN 1005-4:2005+A1:2008	Safety of Machinery – Human Physical Performance – Part 4: Evaluation of Working Postures and Movements in Relation to Machinery

Authorised for the documentation: Modahum GmbH
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82544 Egling/Obb., Germany, date: 22/06/2010


Moritz Daisenberger

M+P-27A-0045

