AMW 22 / AMW 22p

12.14 -

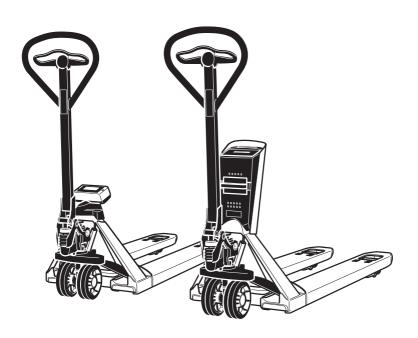
Operating instructions

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12.14

(GB)

AMW 22 AMW 22p





Declaration of Conformity



Jungheinrich AG, Am Stadtrand 35, D-22047 Hamburg Manufacturer or agent acting in the European Union

Model	Option	Serial No.	Year of manufacture
AMW 22			
AMW 22p			

Additional information

On behalf of

Date

(B) EC Declaration of Conformity

The undersigned hereby declare that the powered industrial truck described below in detail complies with the European Directives 2006/42/EC (Machinery Directive) and 2004/108/EEC (Electromagnetic Compatibility - EMC) including amendments as well as the legislative decree to incorporate the directives in national law. The signatories are in each case individually authorised to compile the technical documents.

Copyright

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Foreword

Notes on the operating instructions

The present ORIGINAL OPERATING INSTRUCTIONS are designed to provide sufficient instruction for the safe operation of the industrial truck. The information is provided clearly and concisely. The chapters are arranged by letter and the pages are numbered continuously.

The operator manual details different industrial truck models. When operating and servicing the industrial truck, make sure that the particular section applies to your truck model.

Our trucks are subject to ongoing development. We reserve the right to alter the design, equipment and technical features of the system. No guarantee of particular features of the truck should therefore be assumed from the present operating instructions

Safety notices and text mark-ups

Safety instructions and important explanations are indicated by the following graphics:

↑ DANGER!

Indicates an extremely hazardous situation. Failure to comply with this instruction will result in severe irreparable injury and even death.

↑ WARNING!

Indicates an extremely hazardous situation. Failure to comply with this instruction may result in severe irreparable injury and even death.

↑ CAUTION!

Indicates a hazardous situation. Failure to comply with this instruction may result in slight to medium injury.

NOTE

Indicates a material hazard. Failure to comply with this instruction may result in material damage.

- Used before notices and explanations.
 - Indicates standard equipment
 - Indicates optional equipment

Contents

Α	Correct Use and Application	9
1 2 3 4 5	General Correct application Approved application conditions Proprietor responsibilities Adding attachments and/or optional equipment	9 9 10 10
В	Truck Description	11
1 2 3 3.1 3.2 4 4.1 4.2 4.3 4.4 4.5 4.6 4.7 4.8 4.10	Application Calibrated Weighing System (AMW 22p) Assemblies and Functional Description Truck Component Overview Weighing System Component Overview Technical Specifications Performance data Weighing System Weight Display Weighing Variance of the Weighing System Dimensions Weights Batteries Tyre type Conditions of use Identification Points and Data Plates Wind loads	111 112 122 133 144 144 145 166 166 177 18
С	Transport and Commissioning	19
1 2 3	Lifting by crane Transport Using the Truck for the First Time	19 20 21
D	Batteries/Accumulators - Replacement/Charging	23
1 2 3	Safety Regulations for Handling Batteries and Accumulators	23 24 24

E	Operation	25
1	Safety Regulations for the Operation of the Forklift Truck	25
2	Displays and Controls	26
3	Starting up the truck	27
3.1 4	Checks and Operations to Be Performed Before Starting Daily Work Industrial Truck Operation	27 28
4.1	Safety regulations for truck operation	28
4.2	Parking the truck securely	29
4.3	Pushing/Pulling, Steering, Braking	30
4.4	Pushing/Pulling	30
4.5	Steering	30
4.6	Brakes	31
4.7	Lifting, transporting and depositing loads	32
4.8	AMW 22 / AMW 22p Standard Weigher (●)	35
4.9	AMW 22p Weigher, Special Version (O)	41
4.10	AMW 22p Weigher, Special Calibrated Version (O)	50
4.11	On-Board Printer (O)	58
5	Troubleshooting	59
5.1	Load cannot be lifted	59
F	Checking the Industrial Truck	61
1	Operational Safety and Environmental Protection	61
2	Safety Regulations for Checks	61
3	Lubricants and Lubrication Schedule	63
3.1	Handling consumables safely	63
3.2	Lubrication Schedule	65
3.3	Consumables	65
4	Checks	66
4.1	Preparing the Truck for Checking	66
4.2	(O) Check and Adjust Foot-Activated Parking Brake	66
5	Decommissioning the Industrial Truck	67
5.1	Prior to decommissioning	67
5.2	Restoring the truck to service after decommissioning	67
6	Safety tests to be performed at intervals and after unusual incidents	68
7	Final de-commissioning, disposal	68
8	Operating Company Checks	69

A Correct Use and Application

1 General

The truck must be used, operated and serviced in accordance with the present instructions. All other types of use are beyond its scope of application and may result in damage to personnel, the industrial truck or property.

2 Correct application

NOTE

The maximum load and the maximum permissible load distance given on the data plate must be observed.

The load must be fully supported by the load handler and raised completely from the ground.

The following operations are in accordance with regulations and are permitted:

- Lifting and lowering loads.
- Transporting lowered loads.

The following operations are prohibited:

- Carrying and lifting passengers.
- Pushing or pulling loads.
- Transverse handling of long loads.

3 Approved application conditions

- Operation in industrial and commercial environments.
- Permissible temperature range see "Conditions of use" on page 16.
- Operation only on secure, level surfaces with sufficient capacity.
- Operation only on routes that are visible and approved by the operating company.
- Do not negotiate inclines.
- Operation in partially public traffic.

Use under extreme conditions

Using the truck under extreme conditions can result in malfunctions and accidents.

- ▶ Special equipment and authorisation are required if the truck is to be constantly used in extreme conditions, especially in dusty or corrosive atmospheres.
- ▶ The truck cannot be used in areas at risk of explosion.
- ▶In adverse weather conditions (thunder, lightning) the industrial truck must not be operated outside or in endangered areas.

4 Proprietor responsibilities

For the purposes of the present operating instructions the "operating company" is defined as any natural or legal person who either uses the industrial truck himself, or on whose behalf it is used. In special cases (e.g. leasing or renting) the proprietor is considered the person who, in accordance with existing contractual agreements between the owner and user of the industrial truck, is charged with operational duties. The proprietor must ensure that the industrial truck is used only for the purpose it is intended for and that danger to life and limb of the user and third parties are excluded. Furthermore, accident prevention regulations, safety regulations and operating, servicing and repair guidelines must be followed. The operating company must ensure that all users have read and understood these operating instructions.

NOTE

Failure to comply with the operating instructions invalidates the warranty. The same applies if improper work is carried out on the truck by the customer or third parties without the permission of the manufacturer.

5 Adding attachments and/or optional equipment

The mounting or installation of additional equipment which affects or enhances the performance of the industrial truck requires the written permission of the manufacturer. Local authority approval may also need to be obtained. Local authority approval however does not constitute the manufacturer's approval.

B Truck Description

1 Application

The pallet truck is designed to transport goods on level surfaces. Open bottom pallets or roll cages can be lifted.

The rated capacity is indicated on the data plate or the capacity plate Qmax.

The weighing system provides the option of weighing loads, adding individual weights and displaying a total weight. Current weighing data and entered data can be issued on the on-board printer (o). The date and time are only issued if this option has been activated.

2 Calibrated Weighing System (AMW 22p)

The AMW22p industrial truck comes with an optional calibratable weighing system and manufacturer calibration in accordance with OIML Approval Class III (European Approval No. T2782), in order to weigh for commercial purposes. The calibrated weighing system is purchased individually from the notified body with a serial number and is given an official inspection label. The inspection label confirms the accuracy within the permissible calibration tolerance. The approval certificate supplied must be kept. The scope of the EC approval extends to all Member States of the European Union. Testing of weighing systems in use is in accordance with statutory provisions of the respective EC country.

If the validity of the calibration is limited according to national regulations, the operator of a truck with a calibrated weighing system is responsible for its recalibration within schedule.

Significant geographical changes in location of the truck require a recalibration to operate the weighing system.

NOTE

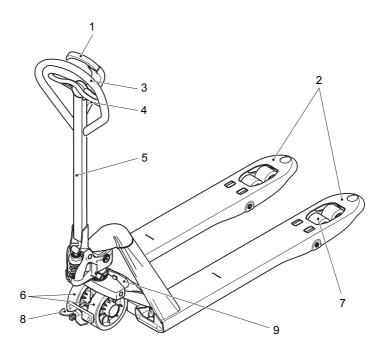
The validity of the calibration becomes void in the event of damage to the truck, manual intervention in the operation of equipment such as the housing opening, as well as any damage or removal of the test plaques.

→

Calibratable weighing systems with deviations beyond the traffic error limit, an exceeded reverification date or which have passed their calibration expiry date must be taken out of service.

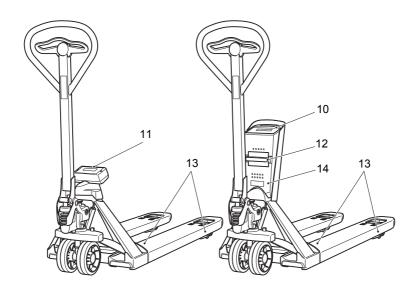
3 Assemblies and Functional Description

3.1 Truck Component Overview



Item		Description	Item		Description
1	0	Travel and parking brake	6	•	Steered wheels
2	•	Load handler	7	•	Load wheels
3	•	Handle	8	0	Foot-activated parking brake
4	•	"Lift/lower fork" handle	9	•	Data plate
5	•	Tiller			
	•	Standard equipment		0	Optional equipment

3.2 Weighing System Component Overview



Item		Component	Item		Component
10	•	Display and evaluation unit (AMW 22p)	13	•	Load cells
11	•	Display and evaluation unit (AMW 22)	14	0	On-board printer
12	•	Battery			
	•	Standard equipment		0	Optional equipment

3.2.1 Weight Detection

Four load cells are bolted to the load carrying frame and also to the load attachment head. The load cells and the connection cable to the evaluation and display unit are installed so that they are protected.

3.2.2 Evaluation and Display Unit

Weights, system statuses and quantities (\bigcirc) are displayed. All functions of the weighing system can be called up using the keys below the display. The zero setting is performed automatically within set limits.

3.2.3 On-Board Printer (○)

Individual weights, tare weights and total weights can be output on thermal paper, as can quantities (\bigcirc) with identification code numbers (\bigcirc) and time of printing (\bigcirc) .

4 Technical Specifications

The technical specification is given according to the German guideline "Type sheets for industrial trucks". Technical modifications and additions reserved.

4.1 Performance data

		AMW 22 / AMW 22p	
Q	Rated capacity	2200	kg
С	Load centre distance	600	mm
х	Load distance	890	mm
	Lowering speed with / without load	90 / 20	mm/s

4.2 Weighing System Weight Display

Weight range	Weight display resolution				
	AMW 22	AMW 22p (●)1)	AMW 22p (○) 1)	AMW 22p Calibrated (○) 1)	
0 - 200 kg		0.2 kg	0.1 kg	0.2 kg (o)	
200 - 500 kg	1.0 kg	0.5 kg	0.2 kg	0.5 kg (o)	
500 - 2000 kg (●)	g	1.0 kg	0.5 kg	1.0 kg	
500 - 2200 kg (○)					

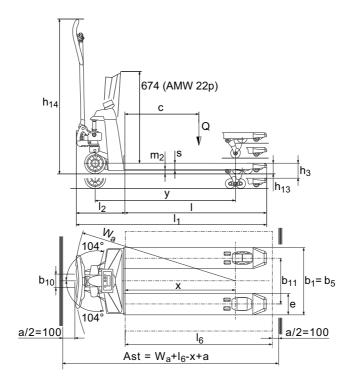
¹⁾ Multi-range display: The resolution of the weight display depends on the weight. During weighing out, the resolution does not change on passing the boundary to the next lower weight range.

4.3 Weighing Variance of the Weighing System

	Within a temperature range of -10 to +40°C the maximum weighing variance is 0.1% of the overall weighing range.
AMW 22p	Within a temperature range of -10 to +40°C the maximum weighing variance is 0.1% of the overall weighing range.

Outside the listed temperature range, weighing variances of up to 0.3% can occur.

4.4 Dimensions



	Component	AMW 22 / AMW 22p	
h ₃	Lift	122	mm
h ₁₃	Lowered height	86	mm
h ₁₄	Tiller handle height	1234	mm
у	Wheel distance	1110	mm
s/e/l	Fork dimensions	62 / 170 / 1150	mm
I ₁	Overall length	1546	mm
l ₂	Length to fork face	396	mm
b ₁	Overall width	540	mm
b ₅	Outer fork distance	540	mm
b ₁₀	Track width, front	109	mm
b ₁₁	Track width, rear	370	mm
Ast	Aisle width 1000x1200 transv.	1763	mm
Ast	Aisle width 800x1200 length	1813	mm
Wa	Turning radius	1303	mm

4.5 Weights

Model	AMW 22 / AMW 22p	
AMW 22 / AMW 22p net weight	99 / 102	kg
Axle load, w.o. load front/rear	61 / 38	kg
Axle load, w. load front / rear (AMW 22)	578 / 1721	kg

4.6 Batteries

AMW 22	4x1.5 V
AMW 22p	12 V / 1.2 Ah

4.7 Tyre type

	AMW 22 / AMW 22p	
Tyre size, front	Ø 170 x 50	mm
Tyre size, rear	Ø 82 x 96	mm
Tyre size, rear (tandem wheels)	Ø 82 x 62	mm

4.8 Conditions of use

Ambient temperature

- operating at -10°C to 40°C

Ambient lighting

- - during operation at least 50 Lux

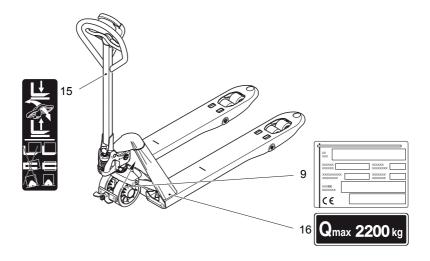


Outside the listed temperature range, weighing variances of up to 0.3% can occur.

NOTE

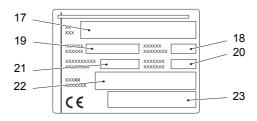
Rapid changes of temperature should be avoided, as they can cause moisture to condense within the electronics. When large temperature differences are encountered, switch the weighing system off whilst it acclimatises.

4.9 Identification Points and Data Plates



Item	Model
9	Truck data plate
15	Plate - Operation / Lifting
16	Capacity Qmax

4.9.1 Data plate



Item	Description	Item	Description
17	Model	21	Rated capacity (kg)
18	Year of manufacture	22	Manufacturer
19	Serial number	23	Manufacturer's logo
20	Net weight in kg		

For queries regarding the truck or ordering spare parts always quote the truck serial number (19).

4.10 Wind loads

Wind forces can affect the stability of a truck when lifting, lowering and transporting loads with large surface areas.

Light loads must be especially secured when they are subjected to wind forces. This will prevent the load from sliding or falling.

Stop the truck in both cases.

C Transport and Commissioning

1 Lifting by crane

↑ WARNING!

Incorrect lifting by crane can result in accidents

Improper use or use of unsuitable lifting gear and can cause the truck to fall when being lifted by crane.

Prevent the truck from hitting other objects during lifting, and avoid uncontrolled movements. If necessary, secure the truck with guide ropes.

- ► The truck should only be loaded by personnel trained in the use of lifting slings and tools.
- ► Wear personal protective equipment (e. g. safety shoes, safety helmet, hi-vis jacket, protective gloves, etc.) when loading by crane.
- ▶ Do not stand under suspended loads.
- ▶ Do not enter or stand in a hazardous area.
- ► Always use lifting gear with sufficient capacity (for truck weight see truck rating plate).
- Always attach the crane lifting gear to the prescribed strap points and prevent them from slipping.
- ▶ Use the lifting slings only in the prescribed loading direction.
- ► Crane slings should be fastened in such a way that they do not come into contact with any attachments when lifting.

Lifting the truck by crane

Requirements

- Park the truck securely, see page 29.

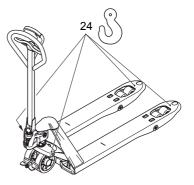
Tools and Material Required

- Lifting gear
- Crane lifting gear

Procedure

• Secure the crane lifting gear to the strap points (24).

The truck can now be lifted by crane.



2 Transport

MARNING!

Accidental movement during transport

Improper fastening of the truck and mast during transport can result in serious accidents.

- ▶ Loading must only be performed by specialist personnel trained for this purpose. The specialist personnel must be instructed in securing loads on road vehicles and handling load securing devices. In each case correct measurements must be taken and appropriate safety measures applied.
- ▶ The truck must be securely fastened when transported on a lorry or a trailer.
- ▶ The lorry or trailer must have fastening rings.
- ▶ Use wedges to prevent the truck from moving.
- ▶ Use only fastening belts with sufficient strength.
- ► Use non-slip materials to securing the load aids (pallet, wedges, ...) e. g. non-slip mats.

Securing the industrial truck for transport

Requirements

- Load the truck.
- Park the truck securely, see page 29.

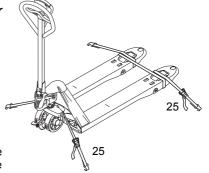
Tools and Material Required

- Lashing straps

Procedure

 Attach the lashing straps (25) to the industrial truck and the transport vehicle and tension sufficiently.

The truck can now be transported.



3 Using the Truck for the First Time

Procedure

• Check the equipment is complete.

The truck can now be started, see page 27.

When the vehicle is parked, the surface of the tyres will flatten. The flattening will disappear after a short period of operation.

D Batteries/Accumulators - Replacement/ Charging

1 Safety Regulations for Handling Batteries and Accumulators

Maintenance personnel

Accumulators must only be charged and batteries only replaced by the operating company. These operating instructions and the manufacturer's instructions concerning batteries and charging stations must be observed when carrying out the work.

Battery disposal

Batteries may only be disposed of in accordance with national environmental protection regulations or disposal laws. The manufacturer's disposal instructions must be observed.

↑ WARNING!

Risk of accidents and injury when handling batteries and accumulators

Batteries and accumulators contain chemicals that are poisonous and corrosive. Avoid contact at all costs.

- ▶ Do not dismantle or forcibly open batteries and accumulators.
- ▶ Do not subject batteries and accumulators to heat, fire or direct sunlight.
- ▶ Do not short-circuit batteries and accumulators. Store batteries and accumulators so that no short circuits can occur through other batteries and accumulators or metal objects.
- ▶ Never use batteries or accumulators of different makes, capacity, size or type at the same time in one truck.
- ► Failure to comply could result in explosions!
- ► Seek medical assistance immediately if you have swallowed a battery or accumulator.
- ▶ Do not subject batteries and accumulators to impacts.
- ► Keep battery terminals and contacts clean and dry.
- ▶If a battery or accumulator is leaking, do not allow the liquid to come into contact with the skin or eyes. If this has already happened, rinse the affected part with plenty of water and seek medical assistance immediately.
- ► Keep batteries and accumulators in a clean and dry environment, out of the reach of children.

Park the truck securely before carrying out any work on the batteries/accumulators (see page 29).

2 Power Supply AMW 22

The power supply is provided by four 1.5 V AA batteries. The supply cuts out automatically after 3 minutes of inactivity. A set of batteries will provide power for around 1 year of normal weighing operations. If the battery charge level becomes too low, the display will show "LO-BA". If the batteries are discharged the weighing system will shut itself down automatically.

The procedure for exchanging used batteries is as follows:

Procedure

- Undo the two securing screws in the side of the upper part of the housing containing
 the display and evaluation unit, and carefully take off the upper part of the housing.
 The upper and lower parts of the housing remain connected by the connection
 cable.
- Take all the used batteries out of the battery compartment in the lower part of the housing and insert new batteries, ensuring their polarity matches the markings.
- Refit the upper part of the housing, taking care not to catch the connection cable in the joint, and tighten the securing screws.

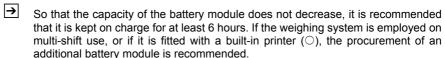
3 Power Supply AMW 22p

The power supply is provided by a 12 V / 1.2 Ah battery module, protected against reverse polarity.

If the unit is not used for 30 minutes it will shut itself down automatically. A set of charged batteries will provide power for around 35 hours of normal weighing operations (weighing system without built-in printer).

If the battery module charge level becomes too low, the display will show "LO-BA", or for certain models (\bigcirc) will only display one remaining battery segment. If the battery module is discharged the weighing system will shut itself down automatically.

The battery module should be removed so that it can be charged using the charger supplied. The charger LED remains lit until the charging process is complete. Once the charging process is complete, the charger switches itself off automatically, thus preventing the battery module being overcharged.



E Operation

1 Safety Regulations for the Operation of the Forklift Truck

Driver authorisation

The truck may only be used by suitably trained personnel, who have demonstrated to the proprietor or his representative that they can drive and handle loads and have been authorised to operate the truck by the proprietor or his representative.

Operator's rights, responsibilities and rules of conduct

The driver must be informed of his duties and responsibilities and be instructed in the operation of the truck and shall be familiar with the operating instructions. Safety shoes must be worn on pedestrian-operated trucks.

Unauthorised use of truck

The operator is responsible for the truck during the time it is in use. The operator must prevent unauthorised persons from moving or operating the truck. Do not carry passengers or lift other people.

Damage and faults

The supervisor must be informed immediately of any damage or faults to the truck or attachment. Trucks which are unsafe for operation (e.g. wheel or brake problems) must not be used until they have been rectified.

Repairs

The operator must not carry out any repairs or alterations to the truck without authorisation and the necessary training to do so. The operator must never disable or adjust safety mechanisms or switches.

Hazardous area



WARNING!

Risk of accidents/injury in the hazardous area of the truck

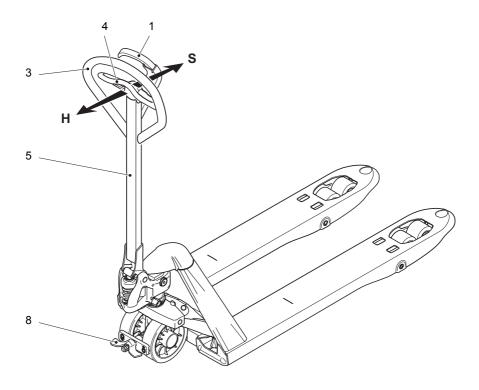
A hazardous area is defined as the area in which people are at risk due to travel or lifting operations of the truck, its load handler or the load. This also includes the area within reach of falling loads or lowering/falling operating equipment.

- ▶ Instruct unauthorised persons to leave the hazardous area.
- ▶ In case of danger to third parties, give a warning signal in good time.
- ▶If unauthorised persons are still within the hazardous area, stop the truck immediately.

Safety devices, warning signs and warning instructions

Safety devices, warning signs (see "Identification Points and Data Plates" on page 17) and warning instructions in the present operating instructions must be strictly observed.

2 Displays and Controls



Item	Control /display		Function
1	Travel and parking brake	0	 Prevent the truck from rolling away.
			 Decelerates the truck.
3	Handle	•	 To pull the truck.
			 To push the truck.
4	"Lift//neutral/lower load handler" handle	•	 In position "H" (lifting): Moving the tiller raises the load handler.
			 In position "neutral": Travel
			 Press to position "S" (lowering): Lowers the load handler.
5	Tiller	•	 Steers the truck.
			 Raises the load handler.
8	Foot-activated parking brake	0	Prevent the truck from rolling away.

3 Starting up the truck

3.1 Checks and Operations to Be Performed Before Starting Daily Work

⚠ WARNING!

Damage and other truck or attachment (optional equipment) defects can result in accidents.

If damage or other truck or attachment (optional equipment) defects are discovered during the following checks, the truck must be taken out of service until it has been repaired.

- ▶ Report any defects immediately to your supervisor.
- ► Mark defective truck and take out of service.
- ► Do not return the industrial truck to service until you have identified and rectified the fault.

Inspection before daily operation

Procedure

- Check the whole of the outside of the truck for signs of damage and leaks.
- Check the load handler for visible signs of damage such as cracks, bent or severely worn forks.
- · Check the load wheels for damage.
- Check that the markings and labels are present, clean and legible, see page 17.
- · Test the brakes.

4 Industrial Truck Operation

4.1 Safety regulations for truck operation

Travel routes and work areas

Only use lanes and routes specifically designated for truck traffic. Unauthorised third parties must stay away from work areas. Loads must only be stored in places specially designated for this purpose.

The truck must only be operated in work areas with sufficient lighting to avoid danger to personnel and materials. Additional equipment is necessary to operate the truck in areas of insufficient lighting.



DANGER!

Do not exceed the permissible surface and point loading on the travel lanes. At blind spots get a second person to assist.

The driver must ensure that the loading dock /dock leveller cannot be removed or come loose during loading/unloading.

Conduct when pulling/pushing

The operator must adapt the travel speed to local conditions. The truck must be pushed/pulled at slow speed when negotiating bends or narrow passageways, when passing through swing doors and at blind spots. The operator must always observe an adequate braking distance between the forklift truck and the vehicle in front and must be in control of the truck at all times. Abrupt stopping (except in emergencies), rapid U turns and overtaking at dangerous or blind spots are not permitted. Do not lean out or reach beyond the working and operating area.

Visibility when pulling/pushing

The operator must look in the direction of travel and must always have a clear view of the route ahead. If the truck is carrying loads that affect visibility, the truck must be pulled against the load direction. If this is not possible, a second person must walk alongside the truck as a lookout to observe the travel route while maintaining eye contact with the operator. Move the truck only at walking pace and with particular care. Stop the truck as soon as you lose eye contact.

Negotiating slopes and inclines

↑ WARNING!

Do not negotiate slopes or inclines.

Negotiating lifts and dock levellers

Lifts may only be negotiated if they have sufficient capacity, are suitable for driving on and authorised for truck traffic by the owner. The driver must satisfy himself of the above before entering these areas. The truck must be pushed into lifts with the load in front and must take up a position which does not allow it to come into contact with the walls of the lift shaft. Persons riding in the lift with the forklift truck must only enter the lift after the truck has come to a rest and must leave the lift before the truck.

4.2 Parking the truck securely

↑ WARNING!

An unsecured truck can cause accidents

- ► Always park the truck on a level surface. In special cases the truck may need to be secured with wedges.
- ► Always fully lower the load handler.
- Select a place to park where no other people are at risk of injury from the lowered load handler.

4.3 Pushing/Pulling, Steering, Braking

4.4 Pushing/Pulling

→

To avoid abrasion and wear, travelling without load should be with the load handler raised.

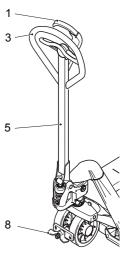
Requirements

- Start up the truck, see page 27.

Procedure

 Release the parking brake by applying the footactivated parking brake (8, ○) or the travel and parking brake (1, ○).

Using the handle (3) on the tiller (5), the truck can be pushed or pulled in the required direction.



4.5 Steering

Procedure

- Swing the tiller (5) to the left or right.
- In tight bends the tiller extends beyond the truck geometry.

4.6 Brakes

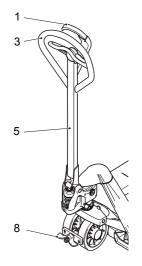
The truck's braking characteristics depend largely on the surface condition of the lanes. The driver must take this into account when travelling.

Manual braking

Procedure

· Pull or push against the direction of movement.

The truck brakes.

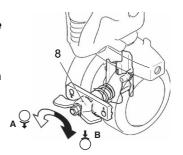


Braking with the foot-activated parking brake (O)

Procedure

 Apply the foot-activated parking brake (8) in direction B.

The truck brakes.



Braking with the travel and parking brake (O)

Procedure

• Applying the travel and parking brake (1).

The truck brakes.

4.7 Lifting, transporting and depositing loads

↑ WARNING!

Unsecured and incorrectly positioned loads can cause accidents

Before lifting a load, the operator must make sure that it has been correctly palletised and does not exceed the truck's capacity.

- ▶ Instruct other people to move away from the hazardous area of the truck. Stop using the truck if people do not vacate the hazardous area.
- ▶ Only carry loads that have been correctly secured and positioned. Use suitable precautions to prevent parts of the load from tipping or falling down.
- ▶ Damaged loads must not be transported.
- ▶ Never exceed the maximum loads specified on the load chart.
- ▶ Never stand underneath a raised load handler.
- ▶ Do not stand on the load handler.
- ▶ Do not lift other people on the load handler.
- Insert the load handler as far as possible underneath the load.

NOTE

Adapt a slower speed when stacking and retrieving.

4.7.1 Raising a load

Requirements

- Load correctly palletised.
- Load weight matches the truck's capacity.
- Load handler evenly laden for heavy loads.

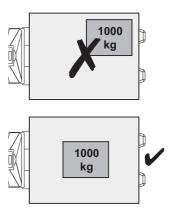


Under eccentric loading, the forks become slightly bent and twisted, which leads to variations in the weighing results. At inclinations greater than 2°, holes and unevenness in the floor, the accuracy of the weighing system decreases by approx. 0.1% per degree.

Precise weighing results are obtained only when the centre of gravity of the load lies between the forks. A smooth flat floor is desirable for optimum accuracy of weighing.

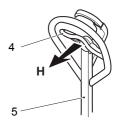
Calibrated weighing system (\bigcirc) (AMW 22p only):

Under eccentric loading, or at inclinations greater than 2°, the display is blocked. The truck must be centrally loaded and standing on level ground.



Procedure

- · Drive carefully up to the pallet.
- · Push the handle (4) in the "H" direction.
- Slowly insert the load handler into the pallet until the fork face touches the pallet.
- The load must not extend by more than 50 mm beyond the fork tips.
 - Lift the load handler by moving the tiller (5) up and down until you reach the desired lifting height.
- In rapid lift (up to 120 kg load, (●)) tiller movements create significantly greater lift movements.



4.7.2 Transporting a load

Requirements

- Load raised correctly.
- Good ground conditions.

Procedure

- Adapt your travel speed to the conditions of the route and the load you are transporting.
- · Move truck at a constant speed.
- · Watch out for other traffic at crossings and passageways.
- · Always move the truck with a lookout at blind spots.

↑ WARNING!

Do not negotiate slopes or inclines.

4.7.3 Depositing a load

NOTE

Loads must not be deposited on travel or escape routes, in front of safety mechanisms or operating equipment that must be accessible at all times.

Requirements

- Storage location suitable for storing the load.

Procedure

- Drive the truck carefully up to the storage location.
- Push the handle (4) in direction S (lower) to lower the load handler.



Do not set the load down abruptly in order to avoid damaging the load and the load handler.

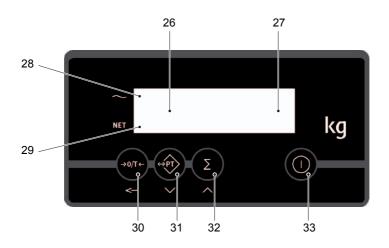


The load has been set down.



4.8 AMW 22 / AMW 22p Standard Weigher (●)

4.8.1 Display and Controls



Item	Indicator	Meaning	
26		 Weight display in kg, messages 	
27	-	 The displayed weight has a negative value. 	
28 (~)	•	 The weighing system including the load is stable. 	
29 (NET)	4	 The displayed weight is a net weight. 	

Only if the load is stable and the "Stable load" segment (28) is activated will key commands be accepted and functions executed.

Item	Operating function key	Input function key
30	Zero setting,	 Confirm, Skip to next
	Automatic tare	
31	Enter tare weight	 Reduce the value
32	Add a weight	 Increase value.
33	On / Off	Adjustment

4.8.2 Display Messages

HELP 1	The weighing system has been overloaded.
--------	--

NOTE

The weight to be weighed exceeds the maximum setting. To avoid damage, immediately relieve the weighing system of the load.

HELP 2	Negative signal from the load cells to the AD converter / inclination.
HELP 3	Negative signal from the load cells to the AD converter / inclination.
HELP 4 The tare weight entered is too high.	



HELP 7	The signal from the load cells to the AD converter is too high.	
LO-BA	The charge status is too low. Change the batteries soon (AMW 22).	
	The battery module must be charged (AMW 22p).	

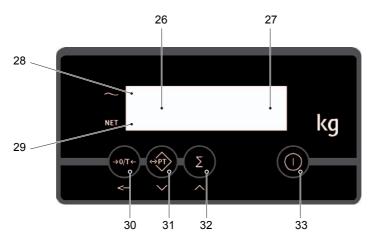
4.8.3 Operation

→

After the load is raised, the display shows the gross value of the weighed weight.

Before each weighing operation, make sure that the system is unloaded and is free to move. The weighing system has an automatic zero correction and automatically compensates for small variations in the zero point. For larger variations in the zero point, the correction must be performed manually using the 0/T key (30).

The weighing system offers the facility to make manual allowances for tare weights and to track changes in the net weight:



Procedure

- · Raise the load.
- Press the 0/T key (30). The display indicates zero. The NET segment (26) shows the activated tare weight.
- · Loading or unloading the net load.



The net value of the weighed weight is displayed. On unloading, the a negative value is shown for the net weight.

Performing a zero correction in the unloaded condition causes the system to return to the standard weighing mode. A tare weight can be entered manually, in either the loaded or unloaded condition. Tare weights higher than the first weight range (in the standard version up to 200 kg) will not be accepted and will lead to the display message HELP 4.

Checking the current tare weight:

Procedure

- Press the ENTER key (31). The most recently used tare value will appear. The segment on the right side will flash.
- To continue to use the displayed value, keep the Confirm key (30) pressed for three seconds.

To input a new tare weight:

Procedure

- · Press the ENTER key (31).
- Press the Increase value key (32) or Decrease value key (31) to change the tare weight. Press the Skip (30) to skip to the next field. Repeat this operation until the desired value is displayed.

Activate or save the tare weight:

Procedure

- To confirm the value, keep the Confirm key (30) pressed for three seconds.
 The tare weight is now activated (NET segment (26) active). If at this time the
 system is laden, the net value for the weighed weight will appear in the display. If
 at this time the system is unloaded, the display will show the entered tare weight as
 a negative value.
- The entered value will remain active until the weighing system is switched off, a new tare weight is entered, a new load is tared or a new zero setting is performed.

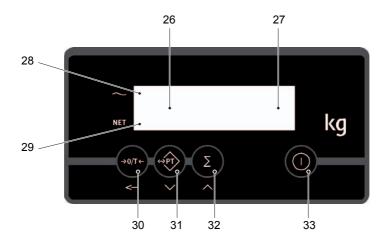
Activate and save the tare weight:

Procedure

- Confirm all segments by pressing the Confirm key (30). The tare weight is now
 activated (NET segment (29) active) and is saved. If at this time the system is
 laden, the net value for the weighed weight will appear in the display. If at this time
 the system is unloaded, the display will show the entered tare weight as a negative
 value.
- The entered value will remain active even after the system is switched off, until a new tare weight is entered, a new load is tared or a new zero setting is performed.

Deactivating the tare weight by performing a Zeroing:

- If the weighing system is loaded: Keep the PT key (31) pressed for two seconds. The tare weight is reset. The system reverts to standard weighing mode.
- If the weighing system is unladen: Press the 0/T key (30).
 A zero correction will be performed. The system reverts to standard weighing mode.



Addition of individual weighings:

Procedure

- · Load the system with the load to be added.
- Press the (32) key to add the weighed weight to the saved total weight.
 The display shows the number of weighings recorded alternating with the total weight. If the system is fitted with a built-in printer (○), the displayed value will be printed out. After a few seconds the system reverts to standard weighing mode.
- If a tare weight is active, the net weights will be totalled.

To display the total weight:

Procedure

- Keep key (32) pressed for three seconds; the total weight calculated thus far will be displayed.
 - The display shows the current number of weighings alternating with the total weight. After a few seconds the system reverts to standard weighing mode.

Resetting the total of individual weighings:

Procedure

- Press the (32) key whilst the total weight is being displayed.
 If the system is fitted with a built-in printer (O), a cumulative printout is performed before the total is reset.
 - After resetting, the display shows the number of weighings recorded as 00 and the starting value for the total weight as 0 kg (AMW 22) or 0.0 kg (AMW 22p). After a few seconds the system reverts to standard weighing mode.

Printing (○)

→

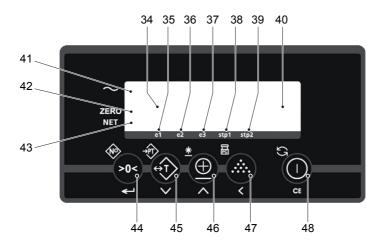
A gross weight will be identified on the printout by "B/G", a net weight by "N". If a tare weight has been input, this will also be printed out and identified by "PT". The total net weight is identified by "TOT" (Total).

Example of a printout:

01	B/G	6.8	kg
02	B/G	158.2	kg
03	N	426.5	kg
04	N	1200.0	kg
04	PT	150.0	kg
04	TOT	1791.5	kg

4.9 AMW 22p Weigher, Special Version (O)

4.9.1 Display and Controls



Item	Indicator	Meaning	
34	-	 The displayed weight has a negative value. 	
35 (e1)	▼	 The displayed weight lies in weight range 1. 	
36 (e2)	▼	 The displayed weight lies in weight range 2. 	
37 (e3)	▼	 The displayed weight lies in weight range 3. 	
38 (Stp1)	▼	- The limit value 1 is activated.	
39 (Stp1)	▼	- The limit value 2 is activated.	
40		 Weight display in kg or lb, messages, quantities 	
41 (~)	•	The weighing system including the load is stable.	
42 (ZERO)	4	 The displayed weight is within the zero range. 	
43 (NET)	4	- The displayed weight is a net weight.	

Only if the load is stable and the "Stable load" segment (41) is activated will key commands be accepted and functions executed.

Item	Operating function level 1 (Press key briefly)	Operating function level 2 (Press key for a longer time)	Input function press the
44	Zero offset	 Input the code 	- Confirm
45	Tare the weight	 Enter tare weight 	 Reduce the value
46	Print out the weight and total it	 Check subtotal, print out final total 	 Increase value.
47	Calculate piece weight Relay control (o)	 Input the piece weight 	 Skip to next, activate the value

Item	Operating function level 1 (Press key briefly)	Operating function level 2 (Press key for a longer time)	Input function press the
48	On / Off	 Change over units of measure 	 Adjustment

4.9.2 Display Messages

Err01	Weigh cell signal not stable.
Err02	The weighing system has been overloaded.

NOTE

The weight to be weighed exceeds the maximum setting. To avoid damage, immediately relieve the weighing system of the load.

Err03	Negative gross weight. This action is not permitted.	
Err04	Outside the zero range. Acknowledge with any key.	
Err05	Accuracy of the piece calculation too low. Acknowledge with any key.	
Err06	Load cell signal too high. Automatic for correction of the input.	
Err07	Load cell signal too low. Automatic for correction of the input.	
Err08	Calibration out of range (negative).	
Err09	Calibration out of range (signal too low).	
Err10	Calibration value from point 2 to 3 lower than from point 1 to 2.	
Err11	Calibration from unit counting mode	
Err14	rr14 Limit value 2 < limit value 1 (not permitted)	
Err97	Err97 Calibration blocked (jumper JP1 present)	
Err98	The calibration value must be higher than the previous one.	
Err99	Activation permitted only on power-up unit.	
LO-BA	The charge status is too low. The battery module must be charged.	

The following additional messages may appear on the display and printout:

Err00	Error report	
AddEd	Addition confirmation	
Add10	Add quantity of pieces	
Adj08	Reporting calibration value	
TarE	Tare setting of metering operation performed	
DonE	Confirmation of metering operation performed	
PA 00	Parameter number display	
StoP	Metering operation aborted	
ho 00	Hour setting display	
m 00	Minute setting display	
dA 00	Day setting display	
m 00	Month setting display	

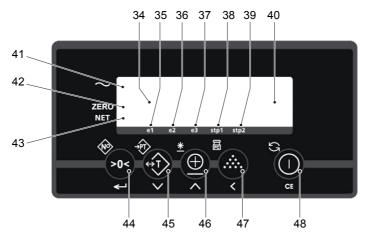
4.9.3 Operation

→

After the load is raised, the display shows the gross value of the weighed weight.

Before each weighing operation, make sure that the system is unloaded and is free to move. The weighing system has an automatic zero correction and automatically compensates for small variations in the zero point. For larger variations in the zero point, the correction must be performed manually using the >0< key (44).

The weighing system offers the facility to make manual allowances for tare weights and to track changes in the net weight:



Procedure

- · Lift the load.
- Press the T key (45). The display indicates zero. The NET segment (26) shows the
 activated tare weight.
- · Loading or unloading the net load.



The net value of the weighed weight is displayed. On unloading, the a negative value is shown for the net weight.

Press the T key (45) to read off the gross weight. The NET segment (43) is deactivated. Press the T key (45) again to perform a new net weighing.

A tare weight can be entered manually, in either the loaded or unloaded condition. The tare weight is input at high resolution, irrespective of weight range and value. A tare weight that is greater than the capacity of the weighing system will not be accepted.

Checking the current tare weight:

Procedure

 Keep the PT key (45) pressed for three seconds. The most recently used tare value will appear. The segment on the right side will flash. • Press Confirm (44) to continue to use the displayed value.

To input a new tare weight:

Procedure

- · Keep the PT key (45) pressed for three seconds.
- Press the Increase value key (46) or Decrease value key (45) to change the tare weight. Press the Skip (47) to skip to the next field. Repeat this operation until the desired value is displayed.

Activate or save the tare weight:

Procedure

- Press the Confirm key (44) to confirm the value.
 The tare weight is now activated (NET segment (43) active). If at this time the
 system is laden, the net value for the weighed weight will appear in the display. If
 at this time the system is unloaded, the display will show the entered tare weight as
 a negative value.
- The value that is input will remain active until a new tare weight is entered. Press the T key (45) to read off the gross weight.

Checking the identity code number:

The weighing system offers the facility to assign identity code numbers to weighings, to identify them for subsequent processing. These identity code numbers may be up to five digits long.

Procedure

- Keep the No key (44) pressed for three seconds.
 The identity code number most recently input will be displayed. The last position on the right of the display will flash.
- Press Confirm (44) to continue to use the displayed value.
- The identity code number will be accepted. The weighing system reverts to weighing mode.

Inputting a new identity code number:

Procedure

- Keep the No key (44) pressed for three seconds. The identity code number most recently input will be displayed. The last position on the right of the display will flash.
- Press the Increase value key (46) or Decrease value key (45) to change the identity code number. Press the Skip (47) to skip to the next field.
 Repeat this operation until the desired value is displayed.
- Press Confirm (44) to load the displayed value.
 The identity code number will be accepted. The weighing system reverts to weighing mode.
- The identity code number "00000" is not reported separately on the print-out.

Piece Counting by Calculating the Piece Weights

Pieces can be counted using a known or weighed piece weight. Larger differences in weight and larger quantities for determining the piece weight result in more accurate

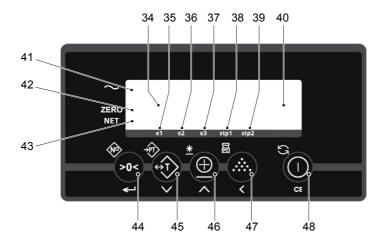
piece weights. The piece weight and the calculated quantity of pieces can be printed out.

The difference in weight for calculating the piece weight should not be less than 4 to 5 kg.

Piece counting over a piece weight to be weighed, preset to 10 pieces:

Procedure

- Press the piece weight key (47).
 The message "Add10" is displayed. The unit displayed changes from "kg" to "pcs".
- Increasing or reducing the number of goods placed on the load handler by 10 pieces.
- Press the Confirm key (44).
 The calculation of the piece weight will be performed. The quantity of pieces determined by the weighing will be displayed.



Piece counting over a piece weight to be weighed, with a different quantity of pieces:

- Press the piece weight key (47).
 The message "Add10" is displayed. The unit displayed changes from "kg" to "pcs".
- Press the Increase value key (46) or Decrease value key (45) to change the quantity of pieces to a maximum of 95 pieces.
- If the accuracy of the piece weight that was determined is too low, the display message "Err05" appears. Press any key to acknowledge and to increase the quantity of pieces.
 - Increasing or reducing the number of goods placed on the load handler by the number of pieces entered.
 - Press the Confirm key (44).
 The calculation of the piece weight will be performed. The quantity of pieces determined by the weighing will be displayed.

Counting the pieces over the piece weight that was entered:

Procedure

- Keep the Input Piece Weight key (47) pressed for three seconds.
 The most recently input piece weight will be displayed. The last position on the right of the display will flash.
- Press Confirm (44) to load the displayed value.
 The quantity of pieces determined by the weighing will be displayed.

To input a new tare piece weight:

Procedure

- Keep the Input Piece Weight key (47) pressed for three seconds.
 The most recently input piece weight will be displayed. The last position on the right of the display will flash.
- Press the Increase value key (46) or Decrease value key (45) to change the piece weight. Press the Skip (47) to skip to the next field.
 Repeat this operation until the desired value is displayed.
- Press Confirm (44) to load the displayed value.
 The quantity of pieces determined by the weighing will be displayed.

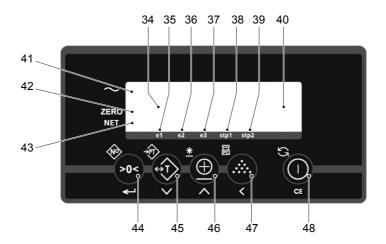
End the piece counting to revert to standard weighing mode:

Procedure

Keep the Change Over key (48) pressed for three seconds.
 The system reverts to standard weighing mode. The quantity of pieces that was determined is cleared down.

Addition of individual weighings:

- · Load the system with the load to be added.
- Press the ± key (46) to add the weighed weight to the saved total weight.
 The gross, net and tare weights will be added. The weight summation is confirmed
 with the display message "Added". The system reverts to standard weighing mode.
 If the system is fitted with a built-in printer (o), the displayed value will be printed
 out.
- No weight can be added twice. The system must be brought into the zero range before a second weight can be added.



To display the total weight:

Procedure

- Keep key (46) pressed for three seconds; the total weight calculated thus far will be displayed.
- The display shows the current number of weighings alternating with the total weight on a three second cycle. If no key is pressed whilst this display is being shown, the system reverts to standard weighing mode after 60 seconds. The current total weight is retained in the memory.

Resetting the total of individual weighings, with print-out:

Procedure

Press key (46) for three seconds whilst the total weight is being displayed.
 The total weight will be reset. A cumulative printout is performed before the total is reset.

Resetting the total of individual weighings, without print-out:

Procedure

Press the On/Off key (48) whilst the total weight is being displayed.
 The total weight will be reset.

Switching the unit of weight display between "kg" and "lb":

- Keep the Change Over key (48) pressed for three seconds.
 The current weight will be displayed for 5 seconds in the second unit of weight. The display switches automatically back into the preset start unit of weight.
- Whilst the display is showing weights in the change-over unit of weight, the weighing functions cannot be performed: If any key is pressed, the display message "Err99" appears. The system reverts to standard weighing mode.

Printing (○)

A gross weight will be identified on the printout by "B/G", a net weight by "N". If a tare weight has been input, this will also be printed out and identified by "PT". The total net weight is identified by "TOT" (Total).

Example of printout of a weighing:

without identity code number		le number	with identity	y code n	umber
B/G	1234.5	kg	CODE	12345	
Т	34.5	kg	B/G	1234.5	kg
N	1200.5	kg	T	34.5	kg
			N	1200.5	kg
No.		1			
10/07/03		17:45	No.		1
			10/07/03		17:45

Example of a printout of a piece counting:

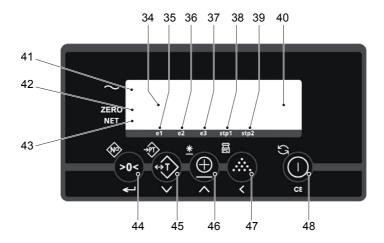
without identity code number

Without luc	stilly COC	ie number	with identifi	ly code i	iuiiibei
B/G	1234.5	kg	CODE	12345	
T	34.5	kg	B/G	1234.5	kg
N	1200.5	kg	T	34.5	kg
			N	1200.5	kg
PcWt	1234.5	kg			
Qty	1234	PCs	PcWt	1234.5	kg
			Qty	1234	PCs
No.		1			
10/07/03		17:45	No.		1
			10/07/03		17:45

with identity code number

Example of a printout of a total weight (also without identity code number):

Tot. B/G	1234.5	kg
Tot. T	34.5	kg
Tot. N	1200.5	kg
Tot. No.		999
10/07/03		17:45



Check the time:

Procedure

- Keep the (47) key pressed for six seconds.
 The display shows the message "ho 00" or the last hours setting.
- Press Confirm (44) to load the displayed value.

Setting the date and time:

Procedure

- Keep the (47) key pressed for six seconds.
 The display shows the message "ho 00" or the last hours setting. The last position on the right of the display will flash.
- Press the Increase value key (46) or Decrease value key (45) to change the
 position that is flashing. Press the Skip (47) to skip to the next field.
- · Press Confirm (44) to load the displayed value.
- The display shows the message "m 00" or the last minutes setting.
 The change procedure is as above.

Press Confirm (44) to load the displayed value.

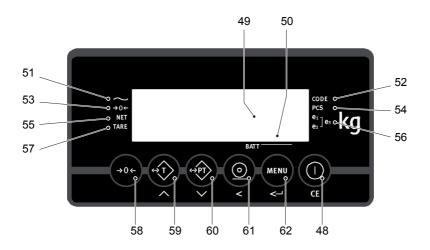
- The display shows the message "m 00" or the last month setting. The change procedure is as above.
 - Press Confirm (44) to load the displayed value.
- The display shows the message "YE 00" or the last year setting.
 The change procedure is as above.

Press Confirm (44) to load the displayed value.

The system reverts to standard weighing mode.

4.10 AMW 22p Weigher, Special Calibrated Version (O)

4.10.1 Display and Controls



Item	Indicator	Meaning		
49		 Weight display in kg, messages 		
50		 Bar display (10 segments): The charge status of the battery module is displayed. When only one active segment remains, the charge status is too low, the battery module must be recharged. 		
		 Bar position: When values are input, the bar position gives the position in the memory. 		
51	~ •	 The weighing system including the load is stable. 		
52	► CODE	 Flashing segment: The identity code number is displayed and can be changed. 		
		 Activated segment: The identity code number that is entered is active and will be printed out (○). 		
53	→ 0← ◀	 The zero point is corrected. 		
54	► PCS	 Flashing segment: The piece weight is displayed and can be changed. 		
		 Activated segment: The quantity of pieces is displayed. 		
55 "GRO - SS"		The displayed weight is a net weight.		
56	▶ e1	 The displayed weight lies in weight range 1. 		
	▶ e2	 The displayed weight lies in weight range 2. 		
	▶ e1 ▶ e1	The displayed weight lies in weight range 3.		
57	TARE ◀	Flashing segment: The tare weight is displayed and can be changed.		
		 Activated segment: The tare weight that is entered is active. 		

→

Only if the load is stable and the "Stable load" segment (51) is activated will key commands be accepted and functions executed.

Item	Operating function key	Input function key
58	Zero correction	
59	Taring the lifted load, resetting the tare weight	Increase value.
60	Enter tare weight	Reduce the value
61	Add a weight / print it	Activation of the flashing position, skip to next
62	Choice: Input identity code number / piece weight	Confirm
48	On/Off switch	Adjustment

4.10.2 Display Messages

	Under eccentric loading, or at inclinations greater than 2°, the display is				
	blocked. The truck must be centrally loaded and standing on level				
	ground.				
Err02	The weighing system has been overloaded.				

NOTE

The weight to be weighed exceeds the maximum setting. To avoid damage, immediately relieve the weighing system of the load.

Err 2001	Parameter error			
Err 2101	System unstable			
Err 2102	Parameter exceeds the maximum capacity setting			
Err 2103	Parameter below zero			
Err 2104	Beyond zero range			
Err 2105	Arithmetic error			
Err 2106	Signal entered too high			
Err 2107	Signal entered too low			
Err 2108	Adjustment out of range (negative)			
Err 2109	Adjustment out of range (signal too low)			
Err 2111	Flash ROM error			
Err 2112	Header text error			
Err 2113	Data saving error			
Err 2114	Header text input not accepted			
Err 2115	Deactivate old data not accepted			
Err 2116	Data not found in memory			
Err 2118	Error in data memory			
Err 2119	Incorrect adjustment			
Err 2120	Operation refused			

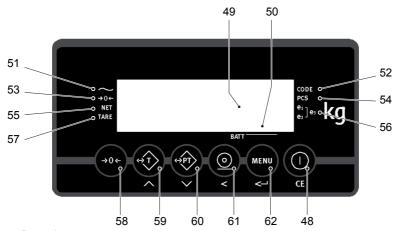
4.10.3 Operation

→

After the load is raised, the display shows the gross value of the weighed weight.

Before each weighing operation, make sure that the system is unloaded and is free to move. The weighing system has an automatic zero correction and automatically compensates for small variations in the zero point. For larger variations in the zero point, the correction must be performed manually using the >0< key (58).

The weighing system offers the facility to make manual allowances for tare weights and to track changes in the net weight:



Procedure

- · Lift the load.
- Press the T key (59). The display indicates zero. The NET segment (55) shows the
 activated tare weight.
- · Loading or unloading the net load.



The net value of the weighed weight is displayed. On unloading, the a negative value is shown for the net weight.

Press the T key (59) to read off the gross weight. The NET segment (55) is deactivated. Press the T key (59) again to perform a new net weighing.

A tare weight can be entered manually, in either the loaded or unloaded condition. The tare weight is input at high resolution, irrespective of weight range and value. A tare weight that is greater than the capacity of the weighing system will not be accepted.

Interrogating the most recently used tare weight:

- Press the ENTER key (60).
 The most recently used tare value will appear. The TARE segment (57) will flash.
- To continue to use the displayed value, keep the Confirm key (62) pressed for three seconds.

The tare weight is activated, the NET (55) and TARE (57) segments are active.

Selecting an existing tare weight:

Procedure

- Press the ENTER key (60).
- Press the Increase value key (59) or Decrease value key (60) to switch between the existing tare weights. The bar display (50) indicates which memory position is being shown.
- To load the displayed value, keep the Confirm key (62) pressed for three seconds.
- The tare weight is activated, the NET (55) and TARE (57) segments are active.

To input a new tare weight:

Procedure

- Press the ENTER key (60).
- Press the Skip (61) to input a new value.
- Press the Increase value key (59) or Decrease value key (60) to change the tare weight. Press the Skip key (61) to skip to the next field. Repeat this operation until the desired value is displayed.
- To load the displayed value, keep the Confirm key (62) pressed for three seconds.
- The tare weight is activated, the NET (55) and TARE (57) segments are active. If at this time the system is laden, the net value for the weighed weight will appear in the display. If at this time the system is unloaded, the display will show the entered tare weight as a negative value.

The value that is input will remain active until a new tare weight is entered.

Checking the most recently used identity code number:

The weighing system offers the facility to assign identity code numbers to weighings, to identify them for subsequent processing. These identity code numbers may be up to six digits long. The identity code number is printed on each printout.

Procedure

- Press the MENU key (62) until the CODE segment (52) is flashing.
 The identity code number most recently input will be displayed.
- To continue to use the displayed value, keep the Confirm key (62) pressed for three seconds.

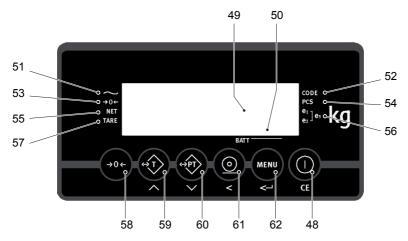
The identity code number will be accepted. After the CE key (48) has been pressed, the weighing system reverts to the standard weighing mode.

Selecting an existing identity code number:

- Press the MENU key (62) until the CODE segment (52) is flashing.
 The identity code number most recently input will be displayed.
- Press the Increase value key (59) or Decrease value key (60) to switch between the existing identity code numbers. The bar display (50) indicates which memory position is being shown.
- To load the displayed value, keep the Confirm key (62) pressed for three seconds.

→

The identity code number will be accepted. After the CE key (48) has been pressed, the weighing system reverts to the standard weighing mode.



Inputting a new identity code number:

Procedure

- Press the MENU key (62) until the CODE segment (52) is flashing.
 The identity code number most recently input will be displayed.
- Press the Skip key (61).
 The last position on the right of the display will flash.
- Press the Increase value key (59) or Decrease value key (60) to change the identity code number. Press the Skip key (61) to skip to the next field. Repeat this operation until the desired value is displayed.
- To load the displayed value, keep the Confirm key (62) pressed for three seconds.
- **→**

The identity code number will be accepted. After the CE key (48) has been pressed, the weighing system reverts to the standard weighing mode.

The value that is input will remain active until a new identity code number is entered. The CODE segment (52) is activated.

Deactivating the identity code number:

Procedure

- Press the MENU key (62) until the CODE segment (52) is flashing.
- Keep the CE key (48) pressed for three seconds.
 The CODE segment (52) is deactivated. The weighing system reverts to standard weighing mode.

Counting the pieces over the piece weights that were entered



Quantities are determined using known piece weights. Rounding errors or piece weights that are not exactly known lead to inaccurate results. The piece weight and the calculated quantity of pieces can be printed out.

Interrogating the most recently used piece weight:

Procedure

Press the MENU key (42) until the PCS segment (35) is flashing.
 The most recently used piece weight will be displayed (##.#### kg).

• To load the displayed value, keep the Confirm key (42) pressed for three seconds. The piece weight is accepted. The quantity of pieces weighed will be displayed. After the CE key (43) is pressed, the weighing system reverts to the standard weighing mode.

Selecting an existing piece weight:

Procedure

- Press the MENU key (62) until the PCS segment (54) is flashing.
 The most recently used piece weight will be displayed (##.#### kg).
- Press the Increase value key (59) or Decrease value key (60) to switch between the existing tare weights. The bar display (50) indicates which memory position is being shown.
- To load the displayed value, keep the Confirm key (62) pressed for three seconds. The piece weight is accepted. The quantity of pieces weighed will be displayed. After the CE key (48) has been pressed, the weighing system reverts to the standard weighing mode.

To input a new tare piece weight:

Procedure

- Press the MENU key (62) until the PCS segment (54) is flashing.
 The most recently entered piece weight will be displayed (##.#### kg).
- Press the Skip key (61).
 The last position on the right of the display will flash.
- Press the Increase value key (59) or Decrease value key (60) to change the piece weight. Press the Skip key (61) to skip to the next field. Repeat this operation until the desired value is displayed.
- To load the displayed value, keep the Confirm key (62) pressed for three seconds. The piece weight is accepted. The quantity of pieces weighed will be displayed. After the CE key (48) has been pressed, the weighing system reverts to the standard weighing mode.

Printing the piece weights:

Procedure

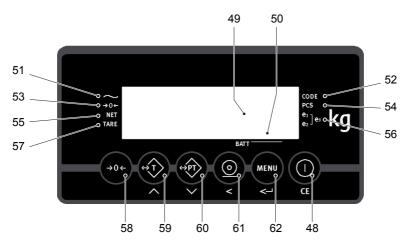
- Press the Print weight key (61).
 Piece weight (PCS ##.#### kg) and quantity of pieces (QTY ######) will be printed out. No printout can be performed in standard weighing mode.
- After the CE key (48) has been pressed, the weighing system reverts to the standard weighing mode.

Addition of individual weighings:

- · Load the system with the load to be added.
- Press the (61) key to add the weighed weight to the saved total weight.
 The display shows the current number of weighings alternating with the total

weight. If the system is fitted with an on-board printer (o), the displayed value will be printed out. After a few seconds, the system reverts to standard weighing mode.

If a tare weight is active, the net weights will be totalled.



To display the total weight:

Procedure

- Keep key (61) pressed for three seconds; the total weight calculated thus far will be displayed.
 - The display shows the current number of weighings alternating with the total weight.
- Press key (62) for three seconds to revert to standard weighing mode.

Resetting the total of individual weighings, with print-out:

Procedure

Press the (61) key whilst the total weight is being displayed.
 The total weight will be reset. A cumulative printout is performed before the total is reset. The system reverts to standard weighing mode.

Resetting the total of individual weighings, without print-out:

Procedure

Press key (58) for three seconds whilst the total weight is being displayed.
 The total weight will be reset. The system reverts to standard weighing mode.

Setting the date and time:

- · Switch on the weighing system.
- Whilst it is starting up, press the (61) key. The current date will be shown in the format day.month.year.
- Press the Skip key (61) to input a new date.
 The last position on the right of the display will flash.

- Press the Increase value key (59) or Decrease value key (60) to change the position that is flashing. Press the Skip key (61) to skip to the next field.
- Press Confirm (62) to load the displayed value and input a new time.
 The current time will be shown in the format hours.minutes. The last position on the right of the display will flash.
- Press the Increase value key (59) or Decrease value key (60) to change the position that is flashing. Press the Skip key (61) to skip to the next field.
- Press Confirm (62) to load the displayed value.
 The system reverts to standard weighing mode.

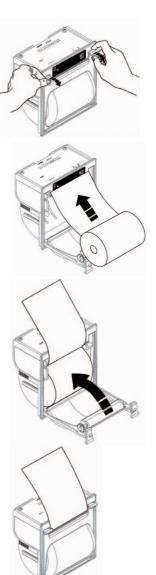
Clearing the memory:

- · Switch on the weighing system.
- After the first beep, keep the 0 key (58) pressed for several seconds.
- If a weight is displayed, release key 0 (58).
 The memory positions for tare weights, identity code numbers and piece weights have now been reset.

4.11 On-Board Printer (○)

4.11.1 Changing the Thermal Paper Roll:

- Open the paper flap: Push both the retaining clips down and open the printer cover.
- Remove the old paper roll. Insert the new roll with the direction of unrolling as shown in the diagram.
- Unroll some paper from the new roll, hold the end of the paper against the upper edge of the built-in printer and close the printer cover.



5 Troubleshooting

This chapter enables the user to locate and rectify basic faults or the results of incorrect operation on his own. When trying to locate a fault, proceed in the order shown in the table.

→

If the industrial truck cannot be restored to operational status after carrying out the following remedial operations, contact the manufacturer's service department. Additional troubleshooting must only be performed by the manufacturer's specialist service engineers. The manufacturer has a service department specially trained for these tasks.

In order for customer services to react quickly and specifically to the fault, the following information is essential:

- Truck serial number
- Error description
- Current location of truck.

5.1 Load cannot be lifted

Possible Cause	Action		
Handle in the wrong position	Push handle into "H" position		
Excessive load	Note maximum capacity, see data plate.		

F Checking the Industrial Truck

1 Operational Safety and Environmental Protection

The checks and servicing operations contained in this chapter must be performed in accordance with the maintenance checklist service intervals.

↑ WARNING!

Risk of accidents and component damage

Any modification to the truck, in particular the safety mechanisms, is prohibited.

NOTE

Only original spare parts are subject to the manufacturer's quality control. To ensure safe and reliable operation of the truck, use only the manufacturer's spare parts.

2 Safety Regulations for Checks

Lifting and jacking up

↑ WARNING!

Lifting and jacking up the truck safely

In order to raise the truck, the lifting gear must only be secured to the points specially provided for this purpose.

In order to raise and jack up the truck safely, proceed as follows:

- ▶ Jack up the truck only on a level surface and prevent it from moving accidentally.
- ► Always use a jack with sufficient capacity.
- ▶In order to raise the truck, the lifting gear must only be secured to the points specially provided for this purpose, see "Transport and Commissioning" on page 19.
- ► When jacking up the truck, take appropriate measures to prevent it from slipping or tipping over (e.g. wedges, wooden blocks).

Cleaning

↑ CAUTION!

Fire hazard

Do not use flammable liquids to clean the industrial truck.

⚠ CAUTION!

Risk of component damage when cleaning the truck

Do not clean with a steam jet.

After cleaning, carry out the test operations as described, see page 69.

Consumables and used parts

↑ CAUTION!

Consumables and used parts are an environmental hazard

Used parts and consumables must be disposed of in accordance with the applicable environmental-protection regulations. Oil changes should be carried out by the manufacturer's customer service department, whose staff are specially trained for this task.

▶ Note the safety regulations when handling these materials.

WARNING!

The use of wheels that do not comply with the manufacturer's specifications can result in accidents

The quality of wheels affects the stability and driving characteristics of the truck. Uneven wear affects the truck's stability and increases the stopping distance.

- ▶ After replacing wheels, make sure the truck is not skewed.
- ► Always replace wheels in pairs, i.e. the left- and right-hand wheels at the same time.



When replacing wheels fitted at the factory, only use the manufacturer's original spare parts. Otherwise the manufacturer's specification will not be adhered to.

Hydraulic system

WARNING!

Hydraulic leaks can cause accidents

Hydraulic oil can escape from a leaky and faulty hydraulic system. Pressurised hydraulic oil can penetrate the skin through fine holes or hairline cracks in the hydraulic system, causing severe injury.

- ► Call for a doctor immediately in the event of an injury.
- ▶ Report any defects immediately to your supervisor.
- ▶ Tag out the defective truck and take it out of service.
- ▶ Do not return the truck to service until you have identified and rectified the fault.
- ▶ Spilled or leaking fluids must be removed immediately with an appropriate binding agent. The mixture of binding agent and consumable must be disposed of in accordance with the relevant regulations.

3 Lubricants and Lubrication Schedule

3.1 Handling consumables safely

Handling consumables

Consumables must always be handled correctly. Follow the manufacturer's instructions.

⚠ WARNING!

Improper handling is hazardous to health, life and the environment

Consumables can be flammable.

- ▶ Keep consumables away from hot components and naked flames.
- ► Always keep consumables in prescribed containers.
- ► Always fill consumables in clean containers.
- ▶ Do not mix up different grades of consumable. The only exception to this is when mixing is expressly stipulated in the operating instructions.

↑ CAUTION!

Spilled consumables can cause slipping and endanger the environment

Risk of slipping from spilled consumables. The risk is greater when combined with water.

- ▶ Do not spill consumables.
- ► Spilled consumables must be removed immediately with an appropriate bonding agent.
- ►The bonding agent / consumable mixture must be disposed of in accordance with regulations.

↑ WARNING!

Improper handling of oils can be hazardous

Oils (chain spray / hydraulic oil) are flammable and poisonous.

- ▶ Dispose of used oils in accordance with regulations. Store used oil safely until it can be disposed of in accordance with regulations.
- ▶ Do not spill oil.
- ▶ Spilled oils must be removed immediately with an appropriate bonding agent.
- ▶The mixture consisting of the bonding agent and oil must be disposed of in accordance with regulations.
- ▶ Observe national regulations when handling oils.
- ► Wear safety gloves when handling oils.
- ▶ Prevent oil from coming into contact with hot motor parts.
- ▶ Do not smoke when handling oil.
- ► Avoid contact and digestion. If you swallow oil do not induce vomiting but seek medical assistance immediately.
- ▶ Seek fresh air after breathing in oil fumes or vapours.
- ▶ If oil has come into contact with your skin, rinse your skin with water.
- ► If oil has come into contact with your eyes, rinse them with water and seek medical assistance immediately.
- ▶ Replace oil-soaked clothing and shoes immediately.

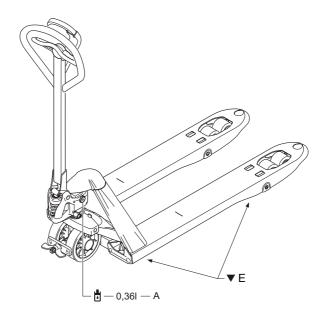
↑ CAUTION!

Consumables and used parts are an environmental hazard

Used parts and consumables must be disposed of in accordance with the applicable environmental-protection regulations. Oil changes should be carried out by the manufacturer's customer service department, whose staff are specially trained for this task.

▶ Note the safety regulations when handling these materials.

3.2 Lubrication Schedule



•	Contact surfaces	ı	Hydraulic oil filler plug
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3.3 Consumables

Code	Order no.	Quantity	Description	Used for
Α	51 132 716	5.0 I	HVLP32	Hydraulic system
Е	29 202 050	1.0 kg	Grease, Polylub GA 352P	Lubrication service

Grease guidelines

Code	Saponification	Dew point °C	Worked penetration at 25 °C	NLG1 class	Application temperature °C
Е	Lithium	>220	280 - 310	2	-35/+120

4 Checks

4.1 Preparing the Truck for Checking

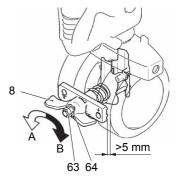
To avoid accidents observe the following:

Procedure

- · Park the truck securely, see page 29.
- When working under a raised lift truck, secure it to prevent it from lowering, tipping
 or sliding away.

4.2 (O) Check and Adjust Foot-Activated Parking Brake

Check the parking brake



Procedure

- Press the foot-operated parking brake (8) in direction "A" as far as the stop (releases the brake).
- Measure the gap between the brake pad and the wheel. If the gap is greater than 5 mm, the foot-operated parking brake must be adjusted.

Adjusting the parking brake

Procedure

- Press the foot-operated parking brake in direction "A" as far as the stop (releases the brake).
- Hold nut (64) and loosen nut (63).
- Turn nut (64) clockwise until the brake pad contacts the wheel. Then loosen the nut anticlockwise by two turns.
- Do not operate the foot-operated parking brake (8) while carrying out the adjustment.
 - Lock nut (64) in the set position with nut (63).

The parking brake has now been adjusted.

5 Decommissioning the Industrial Truck

If the truck is to be out of service for more than a month, it must be stored in a frostfree and dry room.

5.1 Prior to decommissioning

Procedure

- Thoroughly clean the truck, see page 61.
- · Prevent the truck from rolling away accidentally.
- Apply a thin layer of oil or grease to any non-painted mechanical components.
- Lubricate the truck according to the lubrication diagram, see page 65.

5.2 Restoring the truck to service after decommissioning

↑ WARNING!

Faulty brakes can cause accidents

Test the brakes immediately as soon as the truck has been commissioned.

- ▶ Report any defects immediately to your supervisor.
- ▶ Tag out and decommission a faulty lift truck.
- ▶ Only return the truck to service when you have identified and rectified the fault.

- · Thoroughly clean the truck.
- Lubricate the truck according to the lubrication diagram, see page 65.
- Start up the truck, see page 27.

6 Safety tests to be performed at intervals and after unusual incidents

The truck must be inspected at least annually (refer to national regulations) or after any unusual event by a qualified inspector. The manufacturer offers a safety inspection service which is performed by personnel specifically trained for this purpose.

A complete test must be carried out on the technical condition of the truck with regard to safety. The truck must also be examined thoroughly for damage.

The operating company is responsible for ensuring that faults are rectified immediately.

7 Final de-commissioning, disposal

Final de-commissioning or disposal of the truck in must be performed in accordance with the regulations of the country of use. In particular, regulations governing the disposal of batteries, consumables and electronic and electrical systems must be observed.

The truck must only be disassembled by trained personnel in accordance with the procedures as specified by the manufacturer.

8 Operating Company Checks

Insufficient checks can result in accidents

Failure to perform regular checks can lead to truck failure and poses a potential hazard to personnel and equipment.

► Thorough checking is one of the most important requirements for the safe operation of the industrial truck.

The application conditions of an industrial truck have a considerable impact on component wear. The intervals must be reduced accordingly for more arduous conditions.

The following checks must be carried out by the operating company at least weekly.

1	Test brakes.
2	Check wheels for wear and damage.
3	Check bearings and mounting.
4	Check tiller return function.
5	Check chassis and load-bearing components for damage.
6	Check screw connections
7	Check labels are legible and complete.
8	Test lifting/lowering function.
9	Check lubrication points and lubricate according to the lubrication diagram as required.