

ETM/V 214-325

09.11

Operating instructions

Ⓒ

51198768

03.16

ETM 214
ETM 216
ETV 214
ETV 216
ETV 318
ETV 320
ETV 325
ETM 325



CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: www.heydownloads.com by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

Item		Component	Item		Component
5	●	Overhead guard	12	●	Armrest
6	●	Entry grab handle	13	●	Steering wheel
7	●	Emergency Disconnect switch	14	●	Paper compartment
8	●	Solo-Pilot	15	●	Bottle holder
	○	Multi-Pilot	16	●	Accelerator pedal
9	●	Key switch	17	●	Driver's seat
	○	CanCode	18	●	Brake pedal
	○	ISM access module	19	●	Deadman switch
10	●	Mast protection pane	20	●	Drive wheel
11	●	Control and display unit			
	●	Standard equipment		○	Optional equipment

	Description	ETM 325	ETV 325	
Q	Capacity (where c = 600 mm)	2500	2500	kg
	Travel speed with / without load	14.0 / 14.0	14.0 / 14.0	km/h
	Lift speed with / without load	0.35 / 0.64	0.35 / 0.64	m/s (±10%)
	Lowering speed with / without load	0.55 / 0.55	0.55 / 0.55	m/s (-15%)
	Traverse speed with / without load ¹	0.2 / 0.2	0.2 / 0.2	m/s
	Gradeability with / without load	7 / 11	7 / 11	%
	Max. gradeability (5 min on-time rating) with / without load	10 / 15	10 / 15	%
	Acceleration with / without load	5.4 / 4.8	5.4 / 4.8	S
	Drive motor, output S2 60 min	6.9	6.9	kW
	Lift motor, output S3 15%	14.0	14.0	kW

1. Mast-dependent: over h3 = 6200 mm: 0.1 m/s, h3 = 8000: 0.08 m/s

Electromagnetic compatibility (EMC)

The manufacturer confirms that the truck adheres to the limits for electromagnetic emissions and resistance as well as the static electricity discharge test in accordance with EN 12895 as well as the standardised instructions contained therein.

- No changes to electric or electronic components or their arrangement may be made without the written agreement of the manufacturer.

WARNING!

Medical equipment can be damaged by non-ionised radiation

Electrical equipment on the truck emitting non-ionised radiation (e.g. wireless data transmission) can affect operators' medical equipment (pacemakers, hearing aids etc.) and result in malfunctions. Consult a doctor or the manufacturer of the medical equipment to clarify whether it can be used near the industrial truck.

6.9 Conditions of use

Ambient temperature

– operating at -30°C to +40°C

- Special equipment and authorisation are required if the truck is to be used continually in conditions of extreme temperature or condensing air humidity fluctuations.
- Special equipment and authorisation are required if the truck is to be constantly used in 0 °C.
- The permissible operating conditions change if the truck is equipped with a lithium-ion battery (○), see the manufacturer's operating instructions.

6.10 Electrical Requirements

The manufacturer certifies compliance with the requirements for the design and manufacture of electrical equipment, according to EN 1175 "Industrial Truck Safety - Electrical Requirements", provided the truck is used according to its purpose.

2 Lifting by crane

WARNING!

Improper loading by crane can result in accidents

Improper use or use of unsuitable lifting gear can cause the truck to crash when being loaded 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 may be loaded only by people who are trained in using lifting accessories and lifting gear.
 - ▶ Wear personal protective equipment (e.g. safety shoes, safety helmet, hi-vis jacket, protective gloves) when loading by crane.
 - ▶ Do not stand under suspended loads.
 - ▶ Do not walk into or stand in a hazardous area.
 - ▶ Always use lifting gear with sufficient capacity (for truck weight, see truck data plate).
 - ▶ Always attach the crane lifting gear to the prescribed attachment points and prevent them from slipping.
 - ▶ Use the lifting accessories only in the prescribed load direction.
 - ▶ Crane lifting gear must be fastened in such a way that it does not come into contact with any attachments when lifting.
-

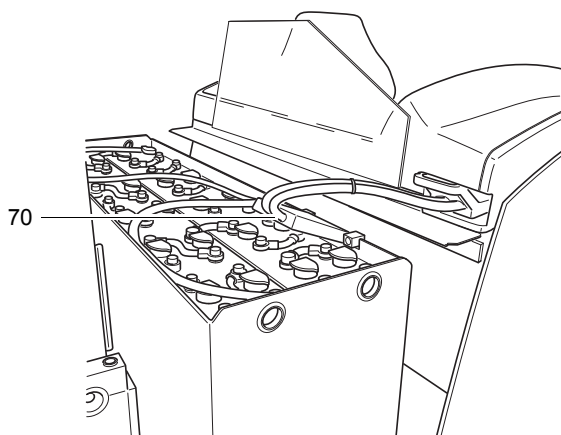
3 Exposing the battery

CAUTION!

Moving parts can cause accidents

The mast moves when the battery is exposed. This constitutes a risk of accidents and trapping in the hazardous area.

- ▶ Instruct any persons to leave the hazardous area.
 - ▶ Make sure there is nothing between the battery and the mast holder when you move the mast holder.
-



NOTE

Trapped battery cables can cause damage

When the battery is inserted the battery cable can be damaged if fitted without a cable duct.

- ▶ Always install the battery with a cable duct (70).
 - ▶ The cable duct (70) must match the battery used. The battery cable length depends on the battery type.
 - ▶ Contact the manufacturer's service department when replacing the factory-fitted battery.
-

Installing the battery with the battery trolley (O)

Requirements

- Battery removed.
- Battery cover removed.

Tools and Material Required

- Battery trolley

Procedure

- Bring the battery trolley with the battery up to the truck.
- Push the battery off the trolley into the battery compartment.
- Insert the battery stop (76).
- Tighten the retaining screw (78) and jam nut (77) or handle (79) on the battery stop (76).
- Attach the battery connector to the truck connector.
- Fit the battery cover.

The battery is now assembled.

2.1.1 Adjusting the display unit

Setting the time

Procedure

- Press the Shift key (112) for approx. 8 seconds to change to setting mode.
- Set the hours. To do this, press the parking brake button (104) to increase the hours and press the slow travel button (107) to reduce the hours.
- Press the Shift key (112) briefly.
- Set the minutes. To do this, press the parking brake button (104) to increase the minutes and press the slow travel button (107) to reduce the minutes.
- Press the Shift key (112) briefly.

The time is now set.

Changing time / residual time display mode

Procedure

- Press the Shift key (112) for approx. 3 seconds to change to display mode.

The time / residual time indicator is shown.

Changing the time format

Procedure

- Press the Shift key (112) for approx. 11 seconds to change the time display format from 12h am/pm to 24h.

Time display format changed.

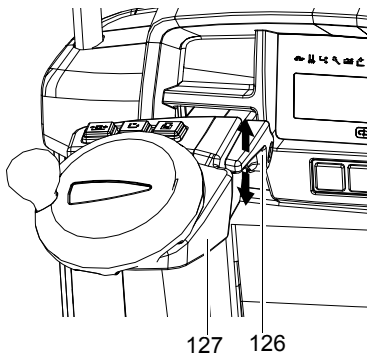
3.3.3 Adjusting the steering column

Adjusting the steering column

Procedure

- Release the steering column stop (126).
- Position the steering head (127).
- Fix the steering column stop (126) in position.

The steering column is now positioned.





Travel

Requirements

- Truck prepared for operation, see page 94.

Procedure

- Release the parking brake, to do this press the parking brake button (104).
- Select the travel direction, to do this
 - Push the direction button (130) up to select travel in the forks direction.
 - Push the direction button (130) down to select travel in the drive direction.
- Press and hold down on the deadman button (19).
 The deadman button (19) ensures that the driver's feet do not extend beyond the geometry of the truck during travel. If it is not pressed, travel and lifting are inhibited with the exception of steering, the control and display unit and the horn. The truck coasts according to the coasting brake parameter setting and after a short time comes to a halt via the drive brake.
- Apply the accelerator pedal (16).
 The travel speed is governed by the accelerator (16).

The truck travels in the direction selected.

Mast lift speed reduction (○)

The mast lift speed reduction safety feature prevents the truck from accelerating accidentally if the load is beyond the free lift range.

After the safety switch has applied, the truck can only operate at crawl speed.

Deactivating the speed reduction

Procedure

- Lower the load handler.
- Set the accelerator pedal to the zero (home) position.

This deactivates the speed reduction and releases normal travel.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: www.heydownloads.com by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

4.11 Fitting additional attachments

WARNING!

Incorrectly connected attachments can cause accidents.

Attachments with incorrectly connected hydraulic attachments can result in accidents.

- ▶ Attachments must only be assembled and commissioned by trained, specialist personnel.
 - ▶ Observe the manufacturer's operating instructions.
 - ▶ Before starting, check the fasteners are positioned correctly and securely and make sure they are complete.
 - ▶ Before starting, make sure the attachment is working correctly.
-

Connecting attachments hydraulically

Requirements

- Non-pressurised hydraulic hoses.
- The exchange ports on the truck are marked HF4 and HF5.
- Attachment directions of movement defined to match the controls' direction of movement.

Procedure

- Non-pressurised hydraulic hoses
 - Switch off the truck and wait a few minutes.
- Attach the plug connector and engage it in position.
- Mark the controls with symbols that indicate their function.

The attachment is now hydraulically connected.



Spilled hydraulic oil must be set using a suitable agent and disposed of in accordance with environmental regulations.

If hydraulic oil comes into contact with the skin, wash it off immediately with soap and water. If it comes into contact with the eyes rinse them immediately with flowing water and call for a doctor.

6 Optional equipment

6.1 Keypad (CanCode) (○)

6.1.1 Code lock

The code lock enables an operator or a group of operators to be assigned an individual user code. The user code is configured with a master code and is outlined in the following sections of this chapter.

When you have entered the valid user code the truck will be operational. The truck will be able to perform travel, steering and hydraulic operations.

When you have entered the valid master code the truck will be switched on. Travel operations are inhibited. The truck will be able to perform steering and hydraulic operations. The code lock is in programming mode. When you enter one of the following parameters the settings in the code lock can be changed.

Parameters	Description
0-0-0	– To change the master code (see page 131)
0-0-1	– To add user codes (see page 133)
0-0-2	– To change a user code (see page 135)
0-0-3	– To clear a user code (see page 137)
0-0-4	– To clear all user codes (see page 139)
0-1-0	– To set the automatic cutout of the truck (see page 141)

Newly supplied trucks have the code indicated on a sticker. When using the truck for the first time change the master and user codes and remove the sticker.

- User code factory setting: 2-5-8-0
- Master code factory setting: 7-2-9-5

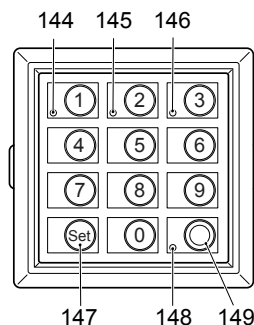
The keypad consists of 10 digit keys, a Set key (147) and a ○ key (149).

Digit keys

The digit keys are used to enter the user or master codes.

○ key

Pressing the ○ key switches the truck off and sets it to the "non operational" status.

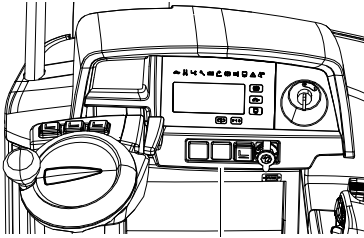


Error displays deleting individual user codes

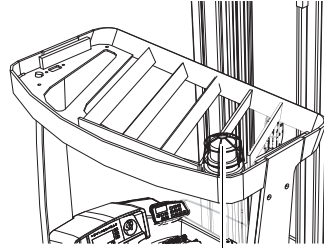
For the following events the LED (148) flashes red:

Cause	Remedy
– The user code entered is not the same length as the master code	– Switch off the truck, see page 130. – Repeat the entry, making sure that the master code is the same length as the user code.
– Tried to delete an operator code that does not exist.	– Switch off the truck, see page 130. – Check the user code entered.
– The user codes to be changed do not match	– Switch off the truck, see page 130. – Delete the user code again, see page 137.

6.6 Beacon



85



160

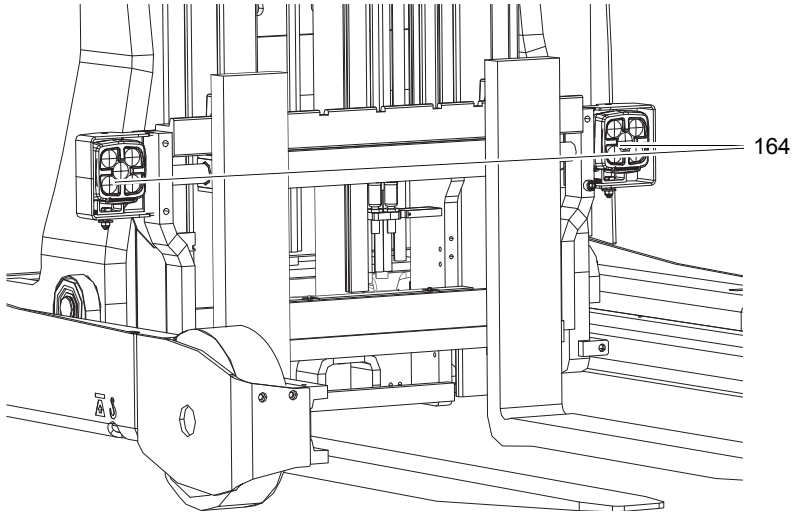
Switching the beacon on and off

Procedure

- Press the beacon button (85).

The beacon is switched on / off.

6.13 Load handler work lights LED



Item	Component
164	Load handler work lights LED



Load handler work lights LEDs are available for trucks that work with a sideshifter.

The LED work lights on the load handler are

- switched on automatically when a hydraulic function is activated and the travel speed is less than 8 km/h.
- switched off when a hydraulic function is inactive and the travel speed is greater than 4 km/h for $t > 2$ s.
- switched off when a hydraulic function is inactive for $t > 5$ min.

2.3 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.
-

2.4 Tyre type

WARNING!

The use of tyres that do not match the manufacturer's specifications can result in accidents.

The quality of tyres affects the stability and performance of the truck.

Uneven wear affects the truck's stability and increases the stopping distance.

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



When replacing rims and tyres fitted at the factory, only use the manufacturer's original spare parts. Otherwise the manufacturer's specifications cannot be ensured. If you have any queries contact the manufacturer's customer service department.

4.3 Removing the seat panel

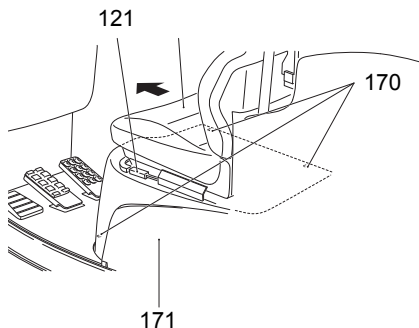


The drive unit and hydraulic aggregate can be made accessible for service by removing the seat panel.

Removing the seat panel

Procedure

- Pull seat locking lever (121) up and pull the seat towards the steering wheel and take it off.
- Disconnect the fan.
- Undo the screws (170) and remove the seat panel (171).
- Assembly is the reverse order.



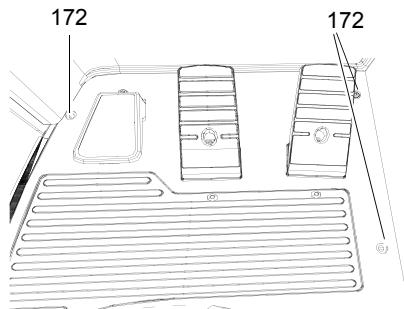
The seat panel is now removed.

4.4 Removing the floor plate

Removing the floor plate

Procedure

- Loosen and remove the 3 screws (172).
- Open the lock with the Allen key.
- Raise the floor plate carefully.
- Remove the plug connections from the pedal.
- Store the floor plate in a safe place.



Floor plate removed.

5.3 Restoring the truck to service after decommissioning

Procedure

- Thoroughly clean the truck, see page 166.
- Lubricate the truck according to the lubrication schedule, see page 174.
- Clean the battery, grease the terminal screws and connect the battery.
- Charge the battery, see page 62.
- Start up the truck, see page 80.

Aquamatik

Power supply		W	A	B	C
1	Test Aquamatik plug, hose connections and float and check for leaks.			●	
2	Test flow indicator and check for leaks.			●	

Intercom system

Electrics		W	A	B	C
1	Test the intercom system and check for damage.			●	

Fork adjuster

Hydr. movements		W	A	B	C
1	Test the hose reel and check for leaks and damage.			●	
2	Check attachment bearings, guides and stops for wear and damage; grease and clean these components.			●	
3	Check attachment lubrication; clean and lubricate if necessary.			●	
4	Check axial play of the front and rear rollers and adjust if necessary.			●	
5	Check sliding blocks are complete.			●	
6	Check the attachment is properly secured to the truck and check the load-bearing components.			●	
7	Test operation and setting of the attachment. Check attachment for damage.			●	
8	Check hydraulic ports and tighten if necessary.			●	
9	Test the fork positioner and check for damage.			●	
10	Check cylinder piston rods and bushings.			●	
11	Check cylinder seals.			●	

Clamping device

Hydr. movements		W	A	B	C
1	Test the acknowledgement key.			●	
2	Test the hose reel and check for leaks and damage.			●	
3	Check attachment bearings, guides and stops for wear and damage; grease and clean these components.			●	
4	Check attachment lubrication; clean and lubricate if necessary.			●	
5	Check axial play of the front and rear rollers and adjust if necessary.			●	
6	Check sliding blocks are complete.			●	

Hydr. movements		W	A	B	C
18	Check sliding blocks are complete.			●	
19	Check forks or load handler for wear and damage.			●	
20	Test the sideshifter, check settings and check for damage.			●	
21	Check cylinder piston rods and bushings.			●	
22	Check cylinder seals.			●	
23	Check piston rod screw depth and counter fixing / clamp.			●	
	Where two tilt cylinders with the same stroke length are used, check their setting in respect of each other.				
24	Check tilt cylinders and mounting.			●	
25	Check mast holder guide rollers for wear and damage.				●

Agreed performance		W	A	B	C
1	Carry out a test run with the rated load and, if necessary, with a customer-specific load.			●	
2	Demonstration after maintenance.			●	
3	Lubricate the truck according to the lubrication schedule.			●	

Steering		W	A	B	C
1	Test the electric steering and its components.			●	
2	Check the steering bearings, steering play and steering toothing or steering chain. Lubricate the steering toothing or steering chain.			●	

2.2.2 Optional equipment

Cold store cab

Chassis and superstructure		W	A	B	C
1	Test the roof hatch and check for damage.			●	
2	Check cold store cabin for damage and make sure it is secure.			●	
3	Check windows for damage.			●	
4	Test the window heating and check for damage.			●	
5	Test the doors and check for damage.			●	

Electrolyte circulation

Power supply		W	A	B	C
1	Check hose connections and test the pump.			●	
2	Replace air-filter wadding.			●	

4.3.3 Weekly

- After re-charging, carry out a visual inspection for dirt and physical damage.
- If the battery is charged regularly according to the IU characteristic, carry out a compensation charge.

4.3.4 Monthly

- Towards the end of the charging process measure and record the voltages of all the cells with the charger switched on.
- After charging measure and record the electrolyte density and the electrolyte temperature in all the cells.
- Compare the results with the previous ones.



If you find significant differences compared with the previous measurements or differences between the cells, contact the manufacturer's customer service department.

4.3.5 Annually

- Measure the insulation resistance of the truck in accordance with EN 1175-1.
- Measure the insulation resistance of the battery in accordance with DIN EN 1987-1.



In accordance with DIN EN 50272-3 the battery insulation resistance should not be less than 50 Ω per volt of rated voltage.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: www.heydownloads.com by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL