

**< M B85=TANDEM ROLLER**

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# 1 MACHINE DESIGNATION, MANUFACTURER AND NOTES

## 1.1 Machine designation and intended use

Designation	Type
HYUNDAI tandem rollers	HR25/G 30T-9
<b>Purpose of use:</b>	
The tandem rollers serve to compact soil and to perform work on asphalt surfaces.	
<b>Intended use:</b>	
The tandem roller may only be used for the purposes and work mentioned in this manual. Any use of the machine for further purposes is considered as misuse and is not permitted.	

## 1.2 Manufacturer

<b>Name of manufacturer:</b>
<b>ATLAS WEYHAUSEN</b> F. Weyhausen AG & Co. KG Maschinenfabrik
<b>Address:</b>
27793 Wildeshausen, Visbeker Straße 35 (Germany)
<b>Contact:</b>
Phone: +49 (0) 4431 981-0 Fax: +49 (0) 4431 981-139 E-Mail: <a href="mailto:info@f-veyhausen.de">info@f-veyhausen.de</a> Web: <a href="http://www.rادلader.com">http://www.rادلader.com</a>

## 1.2A Distributor

Distributor, Address
Hyundai Heavy Industries co., Ltd. 1000, Bangeojin sunhwan-doro, Dong-Gu, Ulsan, 682-792, Korea

1.3 Type plate and serial number

1.3.1 Type plate vehicle

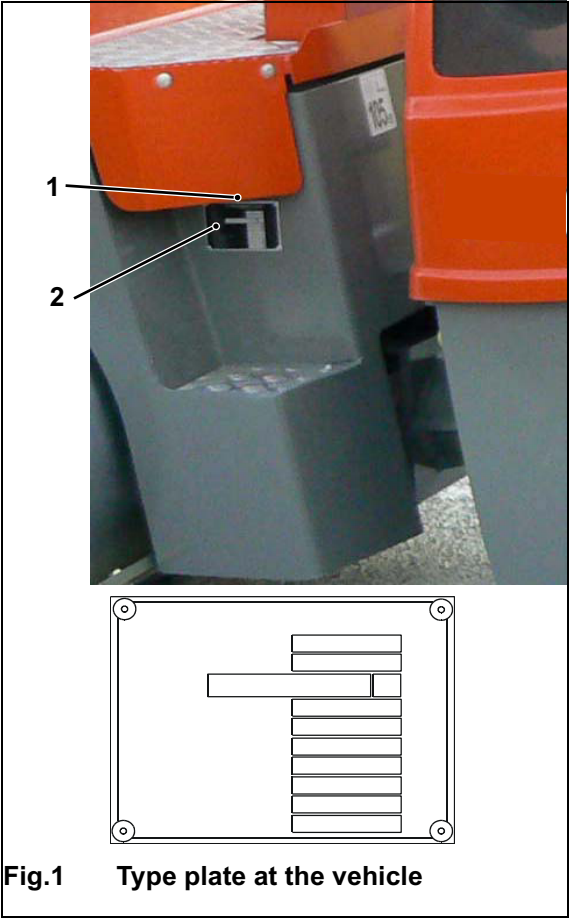


Fig.1 Type plate at the vehicle

1.3.2 Type plate Diesel engine

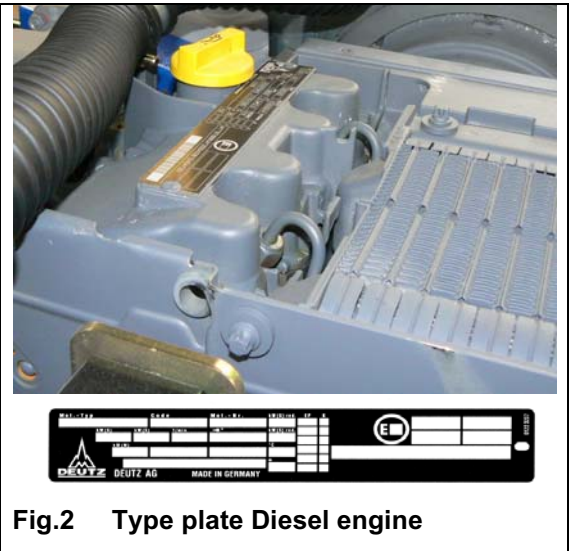


Fig.2 Type plate Diesel engine

**Type plate labeling**

3 6 0 0 X X X X X X X

The serial number (1) features reference numbers X in order to identify specific equipment.

The serial number (1) can be found on the type plate (2) on the left side, below the driver's compartment, and in addition, it has been engraved on the basic frame.

The following information is provided by the type plate:

- Type
- Year of manufacture
- Vehicle identification number (serial number)
- Service weight
- Engine type
- Engine output (kW)
- Maximum permissible total weight

**Serial number**

3600 X 110

1 2 3 4 5 6

**Type**  
HR25T-9  
HR26T-9  
HR30T-9

1  
2  
3

**Engine output**  
22.5 kW  
33.6 HP

1

**Transmission / Drive**  
Standard

1

**Cabin**  
Standard

0

current serial number

## 1.4 Declaration of conformity

### EC DECLARATION OF CONFORMITY

#### THE SIGNATORY

F. WEYHAUSEN AG & CO. KG, VISBEKER STRASSE, 27793 WILDESHAUSEN, GERMANY

ACTING AS AUTHORIZED REPRESENTATIVE OF THE MANUFACTURER

FA. F. WEYHAUSEN AG & CO. KG, VISBEKER STRASSE, 27793 WILDESHAUSEN, GERMANY

HEREBY DECLARES THAT THE MACHINE / EQUIPMENT DESCRIBED BELOW

1. MACHINE DESCRIPTION tandem roller
2. MANUFACTURER: FA. F. WEYHAUSEN AG & CO. KG, VISBEKER STRASSE, 27793 WILDESHAUSEN, GERMANY
3. TYPE: HR25T-9, HR30T-9
4. SERIAL NUMBER:
5. YEAR OF MANUFACTURE: 2013
6. ENGINE TYPE: DEUTZ DIESEL ENGINE
7. ENGINE OUTPUT:
8. ESTABLISHED AVERAGE SOUND POWER LEVEL (WITH REFERENCE TO ITEM 2 OF THE DIRECTIVES BELOW) WITH AN EQUIPMENT CORRESPONDING TO THIS TYPE: LWA 99.8 DB/1 PW
9. WARRANTED SOUND POWER LEVEL (WITH REFERENCE TO ITEM 2 OF THE DIRECTIVES BELOW) FOR THIS EQUIPMENT: LWA 101 DB/ 1 PW

COMPLIES WITH THE REQUIREMENTS OF THE FOLLOWING EUROPEAN DIRECTIVES AND GUIDELINES:

1. MACHINE DIRECTIVE: 89/392/EC SUPPLEMENTED BY 91/368/EG, 93/44/EC AND 93/68/EC AND ALL FURTHER APPENDICES; HOWEVER, NOT RESTRICTED TO THE CONSOLIDATION IN 98/37/EC
2. NOISE LEVEL DIRECTIVES: 2000/14/EC AND APPENDICES
3. ELECTROMAGNETIC COMPATIBILITY: 89/33G/EC AND APPENDICES/
4. ENGINE EMISSION GUIDELINES: 97/68 AND APPENDICES

HARMONIZED STANDARDS: EN 474, PART 1, EN 474 PART 3, EN 292 PART 2 (1994 RATIFICATION) AND APPLICABLE NATIONAL TECHNICAL SAFETY GUIDELINES:

1. GUIDELINES REGARDING ROAD WORTHINESS / ROAD TRAFFIC REGULATIONS (STVZO) I
2. ACCIDENT PREVENTION GUIDELINES FOR VEHICLES (VBG 12)

THE FOLLOWING CONFORMITY EVALUATION PROCESS (CONCERNING THE DIRECTIVES MENTIONED ABOVE, ITEM 2) : 2000/14/EC, INDICATE APPENDIX (VI)

#### NOTIFIED BODY

1. TÜV NORD CERT, EUROPEAN NOTIFIED BODY 0044, AM TÜV 1, 30519 HANNOVER, GERMANY.
2. TECHNICAL DOCUMENTATION (CONCERNING THE DIRECTIVES MENTIONED ABOVE) AVAILABLE AT F. WEYHAUSEN AG & Co. KG, VISBEKER STRASSE, 27793 WILDESHAUSEN, GERMANY

#### ISSUED

COUNTRY: GERMANY  
TOWN: WILDESHAUSEN  
DATE: XX.XX.XX  
BY: Fa. F. WEYHAUSEN AG & Co. KG  
SURNAME: GABRIEL  
FIRST NAME: ARTUR  
POSITION: HEAD OF THE CONSTRUCTION DEPARTMENT

#### SIGNATURE

THIS IS AN ELECTRONICALLY GENERATED DOCUMENT; THE ORIGINAL DOCUMENT IS AVAILABLE AT THE COMPANY.





## 1.5 User instructions

### 1.5.1 Using the tandem roller

#### Responsibility of the contractor



The **contractor** is the **owner** or **hirer** of the tandem roller.

- The responsibility to ensure that the tandem roller is exclusively operated, serviced and maintained by staff that is
  - physically, mentally and professionally fit and
  - has read and understood the operating and maintenance manualrests entirely with the owner or hirer of the vehicle.
- Prompt the operating and service staff to confirm this in written form before authorizing them to use the vehicle.
- Individuals under the influence of alcohol or drugs must not operate the tandem roller.
- Make sure that, in addition to the instructions and guidelines stated in this manual, the mandatory national or local safety regulations and laws referring to the operation of construction machines are observed.

#### Responsibility of the driver and the service staff



Any individual intending to operate the tandem roller must have read and understood this operating and maintenance manual before starting to carry out any work related to the vehicle.

This also applies to individuals that are familiar with the operation and maintenance/servicing of this particular type of machine or similar vehicles.

The **driver of the tandem roller** is the person who operates and drives the tandem roller.

- Before starting to operate the tandem roller, it is the driver's obligation to ascertain that the vehicle is in faultless condition. In addition, the driver must observe the instructions concerning the operation of the tandem roller while it is being used.
- The responsibility to ensure that the machine and its operation do not cause any danger rests entirely with the driver of the tandem roller.
- Before working with the tandem roller, be sure to familiarize yourself with all its control elements and functions as well as its driving characteristics.

The **service staff** includes all individuals involved in servicing, maintaining and repairing the tandem roller.

- The service staff must abide by the default maintenance intervals and is responsible for carrying out the required inspections and work.
- The staff needs to ensure that the execution of the maintenance and service work in question does not cause any dangers to the environment.



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## 1.6 Notes on this operating and maintenance manual



This operating and maintenance manual serves to ensure the correct operation and maintenance of the tandem roller.

- It is an essential part of the tandem roller and needs to be kept close at hand in the vehicle at all times.
- This manual contains all the information required for putting the tandem roller into operation, for working with it and driving it.
- Furthermore, it contains instructions regarding service and maintenance measures which need to be taken by the driver or the service staff. They serve to ensure that the vehicle is always ready for operation and contribute to a prolonged service life.
- Observing the safety instructions both in the corresponding chapters and in the descriptions is of vital importance.
- If you have any further questions concerning the operation or maintenance of the tandem roller, please contact your local authorized HYUNDAI dealer.
- In case you lose the operating and maintenance manual, order a new copy. Please state the serial number and the order number (if available).
- The owner or hirer of the tandem roller will be held liable for any damage resulting from inexpert operation or lack of skill on the part of the staff.

### 1.6.1 Symbols in the operating and maintenance manual

The warning notices in this operating and maintenance manual are accentuated by means of signal words and symbols which reflect the extent and the type of danger involved.

In order to prevent bodily injury and material damage, observing the warning notices in this operating and maintenance manual is **of vital importance!**



#### **DANGER!**

Warns of an imminently dangerous situation which may result in severe bodily injury or death if it is not avoided.



#### **WARNING!**

Warns of a dangerous situation which may result in severe bodily injury or death if it is not avoided.



#### **CAUTION!**

Warns of a dangerous situation which may result in slight injury if it is not avoided.



#### **CAUTION!**

Warns of a dangerous situation which may result in material damage if it is not avoided.



#### **NOTE**

Refers to further information and gives advice in order to ensure trouble-free and efficient operation.

## 2 SAFETY INSTRUCTIONS

### 2.1 General use of the tandem roller



#### **DANGER!**

##### ***Operation in danger zones!***

Before starting the tandem roller, obtain information on the specific safety requirements for work in the danger zone and check whether the necessary precautions have been taken.



#### **CAUTION!**

##### ***Unknown environmental and working conditions!***

Prior to starting your work, make sure that the weather, the road and the condition of the ground allow for a safe operation of the tandem roller. Watch out for potential sources of danger and act accordingly.

### 2.2 Driving and working with the tandem roller



#### **CAUTION!**

##### ***The tandem roller is to be used in faultless condition only!***

- Carry out the required checks and maintenance measures, see chapters on maintenance.
- Repair damage immediately or contact the **HYUNDAI SERVICE**.
- Do not resume your work before the damage is repaired.



#### **WARNING!**

##### ***Danger of falling while getting on / off the tandem roller!***

- Always face the tandem roller, use handles and steps!
- Always keep steps and handles dry and clean!
- Do not use any control elements, the steering column or the steering wheel as handles!



#### **WARNING!**

##### ***Optional feature: Foldable roll-over bar!***

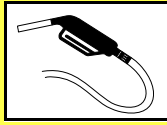
- If your tandem roller is equipped with a foldable roll-over bar, this may only be folded in order to transport the tandem roller.
- Driving the tandem roller with the roll-over bar folded is strictly prohibited - make sure the roll-over bar is lifted before operating the vehicle.
- The ROPS safety is suspended while the roll-over bar is folded.



#### **WARNING!**

##### ***Restricted visibility caused by smoke, dust, fog, etc.!***

- Stop the tandem roller or reduce speed until visibility improves.



## WARNING!

### ***Ensure the operational readiness of the tandem roller!***

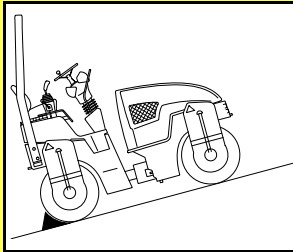
- Prior to beginning your work, check the fill levels and add the required amount of consumables (fuel and water in the sprinkler system), if necessary. Refer to the maintenance instructions.



## CAUTION!

### ***Parking the tandem roller!***

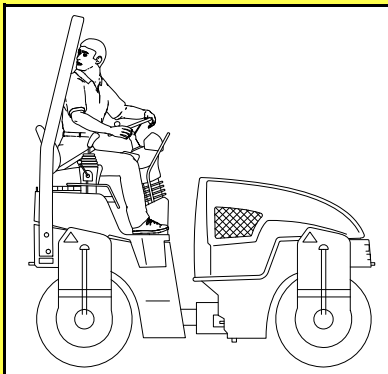
- Secure the tandem roller by applying the parking brake, pushing the emergency stop button and removing the ignition key after each operation. In order to protect the dashboard, put the cover onto it.



## DANGER!

### ***Risk of injuries!***

- Secure the tandem roller against rolling!



## DANGER!

### ***Watch out for individuals in the work area and within the operating range of the vehicle!***

- Secure the work area against unauthorized trespassing.
- Before and while driving backwards, check the area behind you by looking backwards.

## 2.3 Safety instructions in emergencies



### **CAUTION!**

***The emergency equipment can save lives!***

- Always keep a first aid kit and a fire extinguisher close at hand.
- Make sure the emergency equipment is always ready for use.
- Familiarize yourself with using the emergency equipment beforehand.

### 3 TECHNICAL SPECIFICATIONS

#### 3.1 Operating data

Tandem roller type	HR25T-9	HR26T-9	HR30T-9
<b>General data:</b>			
Service weight	2700 kg	2900 kg	3000 kg
Average axle load	1350 kg	1450 kg	1500 kg
<b>Compaction performance:</b>			
Average linear drum load	13.50 kg/cm	12.08 kg/cm	12.00 kg/cm
Amplitude	0.5 mm	0.5 mm	0.5 mm
Frequency I / II	53 / 61 Hz	53 / 61 Hz	52 / 58 Hz
Centrifugal force I / II	21.5 / 28 kN	25 / 34 kN	29 / 37 kN
<b>Drum:</b>			
Drum width	1000 mm	1250 mm	1250 mm
Drum diameter	750 mm	750 mm	750 mm
Drum thickness	12 mm	12 mm	12 mm
Lateral drum offset	50 mm	50 mm	50 mm
<b>Drive / Transmission:</b>			
Speed range	0 - 9 km/h	0 - 9 km/h	0 - 9 km/h
Angular movement	± 12 degrees	± 12 degrees	± 12 degrees
Gradeability with / without vibration	30 / 35 %	30 / 35 %	30 / 35 %
<b>Noise level:</b>			
Sound power level $L_{wa}$	101	101	101

#### 3.2 Fill levels

Tandem roller type	HR25T-9	HR26T-9	HR30T-9
Fuel tank	50 l	50 l	50 l
Hydraulic tank	40 l	40 l	40 l
Water tank	210 l	210 l	210 l

#### 3.3 Diesel engine

Tandem roller type	HR25T-9	HR26T-9	HR30T-9
Make	Deutz D 2011 L2 i	Deutz D 2011 L2 i	Deutz D 2011 L2 i
Nominal output	22.5 kW (33.6 HP)	22.5 kW (33.6 HP)	22.5 kW (33.6 HP)

### 3.4 Dimensions

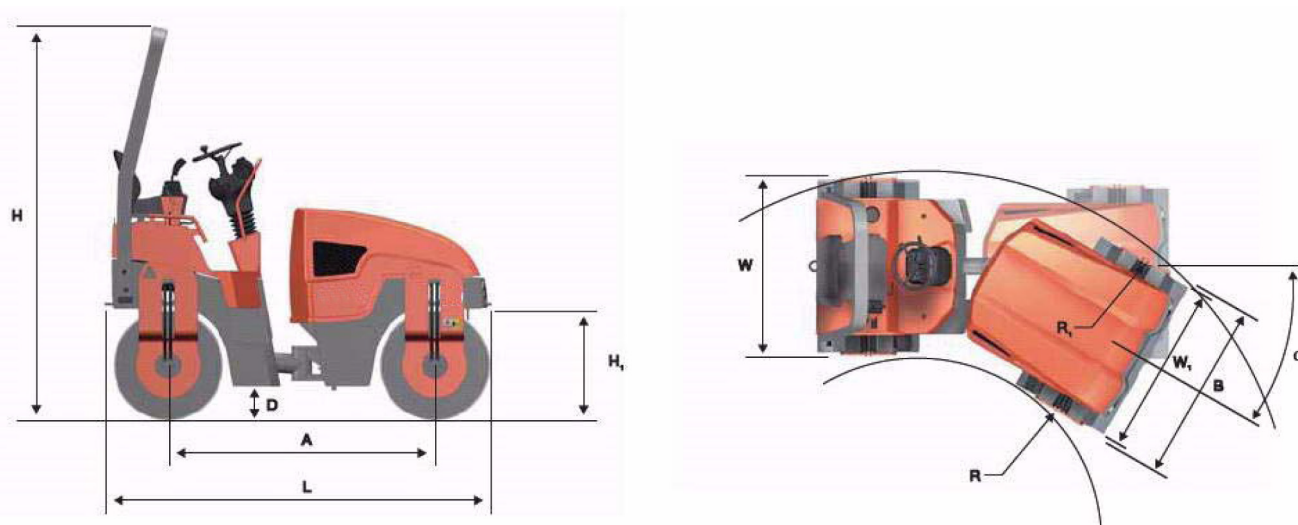


Fig.3 Dimensions

Tandem roller type	HR25T-9	HR26T-9	HR30T-9
Dimensions [mm]			
A	1830	1830	1830
B	1180	1364	1414
D	166	166	166
H	2720	2720	2720
H <sub>1</sub>	750	750	750
L	2670	2670	2670
R	2865	2765	2740
R <sub>1</sub>	3865	3965	3990
W	1050	1250	1300
W <sub>1</sub>	1000	1000	1000
$\alpha$	$\pm 30^\circ$	$\pm 30^\circ$	$\pm 30^\circ$



## 4 TRANSPORTING THE TANDEM ROLLER

### 4.1 Securing the tandem roller before transporting it



#### WARNING!

**Secure attachments and objects before transporting the compaction roller!**

Remove objects attached to the exterior of the vehicle and transport them separately.

#### 4.1.1 Loading and securing the tandem roller



#### CAUTION!

**Precautionary measures for transporting the tandem roller!**

The tandem roller may be loaded and unloaded by experienced and adequately trained persons only. The tandem roller may only be loaded and unloaded on level and solid ground.

- Transporting the tandem roller requires a flat bed truck with a sufficient load capacity, which is adequately equipped for securing the tandem roller. Observe the total weight of the tandem roller before loading it onto the truck; see chapter on technical specifications.

#### 4.1.2 Loading and unloading the tandem roller

Driving the tandem roller onto a flat bed truck

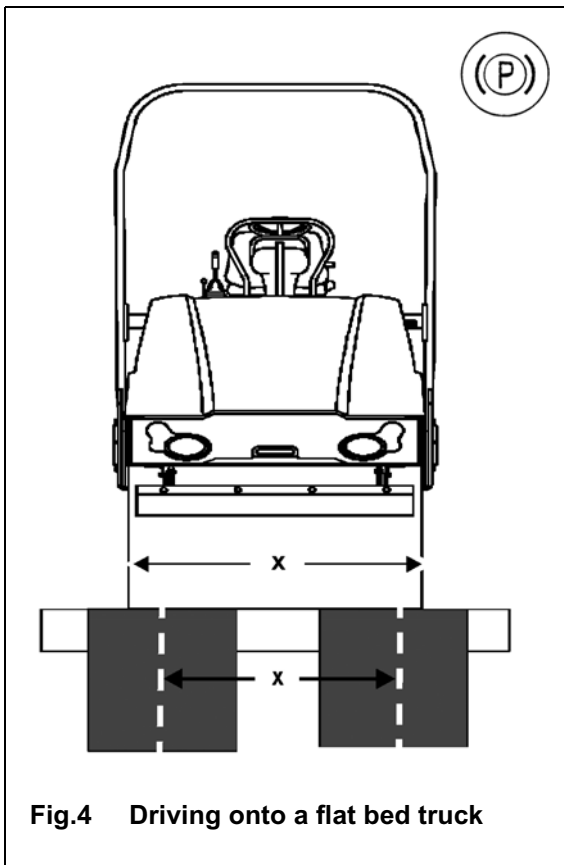


Fig.4 Driving onto a flat bed truck

- Check the position of the ramps of the flat bed truck before driving the tandem roller onto it.
- The ramps need to be positioned in a way that ensures that the tires roll on the center of the ramps.
- Start the Diesel engine.
- Release the parking brake.
- Drive the tandem roller onto the flat bed truck.
- Activate the parking brake and stop the diesel engine.
- Remove the ignition key.

### 4.1.3 Folding the roll-over bar (Optional feature)

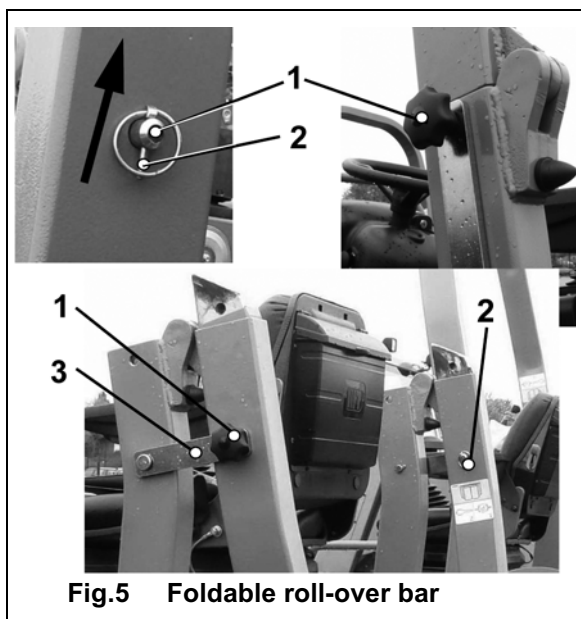


Fig.5 Foldable roll-over bar

As an optional feature, the tandem roller may be equipped with a foldable roll-over bar.



#### **WARNING!**

The roll-over bar may only be folded for loading and transporting the tandem roller. Any operation of the tandem roller with the roll-over bar folded is strictly prohibited.

In order to fold the roll-over bar, remove the locking pins (2) from the locking bolts (1).

Pull out the bolts (1) and fold the roll-over bar backwards.



#### **DANGER!**

##### ***Risk of pinching!***

When folding the roll-over bar, be sure to take its weight into account and hold on to it. Do not reach into the hinge area.

Align the retaining plates (3) with the drill holes and insert the locking bolts (1) into the drill holes on both sides.

Put the locking pins (2) into the bolts (1).

### 4.1.4 Securing the tandem roller on the transport vehicle

#### Fastening the anti-buckling device between the front and the rear end

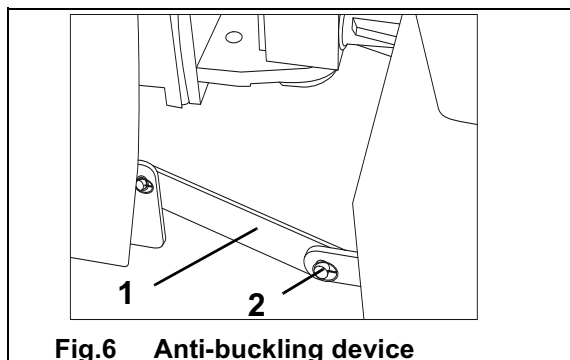


Fig.6 Anti-buckling device

- Install the anti-buckling device (1) on the left side between the front and the rear end.
- Secure the bolt (2) by means of a safety splint pin.

#### Tying the tandem roller to the transport vehicle

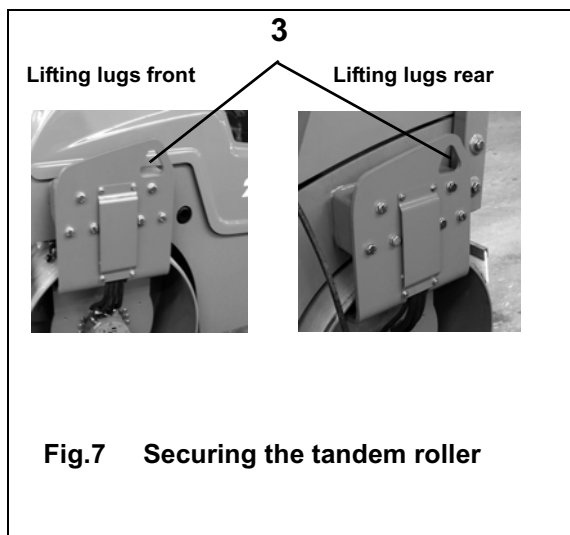


Fig.7 Securing the tandem roller

- The tandem roller disposes of two lifting lugs at the front end and two lifting lugs at the rear end (3).



#### **WARNING!**

The tandem roller may only be fastened to the transport vehicle at the labeled lifting lugs at the front and at the rear end.



#### **NOTE**

Observe the national regulations and guidelines regarding tie-down safety standards!

- Use chain hoists to secure the tandem roller on the flat bed truck at the four lifting lugs (3).

### 4.1.5 Lifting the roll-over bar after transporting the tandem roller

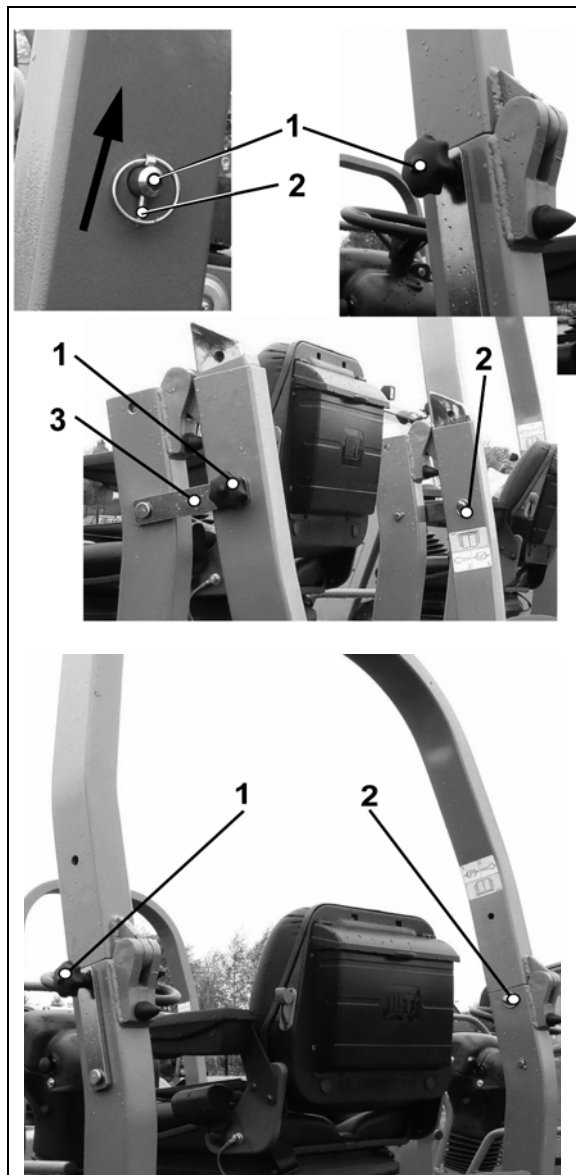


Fig.8 Foldable roll-over bar

After transporting the tandem roller, immediately lift the roll-over bar.



#### **DANGER!**

##### ***Risk of death!***

Operation of the tandem roller with the roll-over bar folded can be fatal. With the roll-over bar folded, the ROPS safety is suspended.

In order to lift the roll-over bar, pull the locking pins (2) out of the the locking bolts (1).

Remove the bolts (2) from the drill holes and the retaining plates (3).

Lift the roll-over bar.



#### **DANGER!**

##### ***Risk of crushing / pinching!***

Do not reach into the hinge area while lifting the roll-over bar.

Put the locking bolts (2) back into the drill holes and secure them by means of the locking pins (1).



#### **NOTE**

Make sure that the locking pins are properly inserted in the drill holes of the roll-over bar!

### 4.1.6 Transport by crane



#### NOTE

Before transporting the machine by means of a crane, inform yourself of its total weight, see Technical Specifications. Make sure the crane and the hoisting gear dispose of a lifting capacity that is appropriate for lifting the tandem roller.

Lifting lugs front



Lifting lugs rear

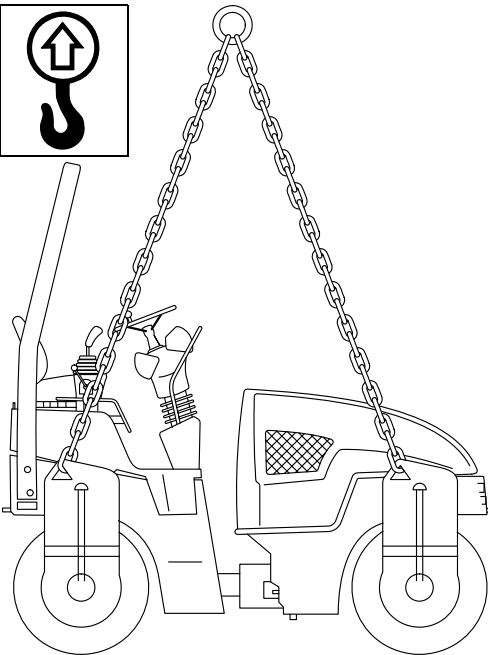
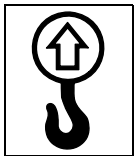


Fig.9 Transport by crane



#### WARNING!

In order to determine the total weight of the tandem roller, take the filled water tank into account! If possible, empty the water tank via the sprinkler system.

- Secure the tandem roller, see Securing the tandem roller for a transport.



#### NOTE

Check whether the anti-buckling device is inserted. Make sure the anti-buckling device is inserted before lifting the tandem roller.

- Shackle the hoisting gear to the four lifting and tie-down lugs of the tandem roller.
- Be sure that all four lifting ropes are of the same length.
- Insert the crane hooks and carefully lift the tandem roller.



#### NOTE

If the tandem roller is not operable, you need to load it onto a flat bed truck by crane.

**Towing the tandem roller is not possible!**

## 5 BEFORE STARTING THE TANDEM ROLLER

### 5.1 Before the initial start



#### NOTE

##### **Obligation to inform yourself!**

- Inform yourself of all issues related to operating the tandem roller.
- Read the safety instructions before starting the wheel loader. In addition to this, be sure to observe the national and local laws and directives concerning the operation of earth-moving construction machines. In case of doubt, contact your local HYUNDAI dealer.

### 5.2 Checking the tandem roller

#### 5.2.1 Visual inspection and fill levels

Before starting the tandem roller, perform a visual inspection to get a picture of the current condition of the tandem roller.

##### **Check:**

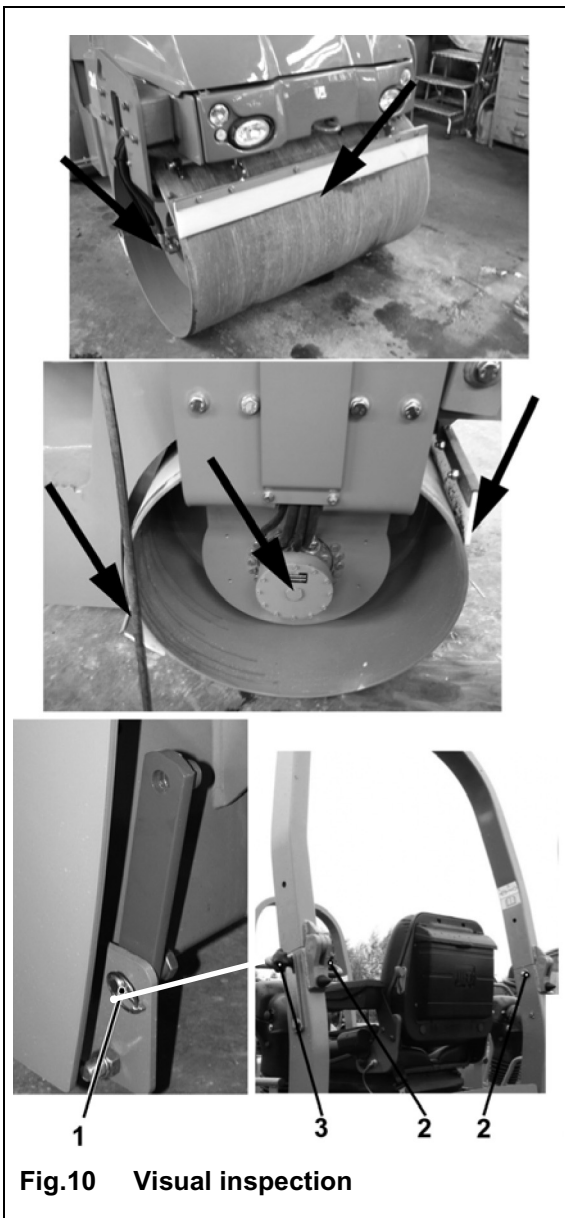
- the accumulation of dirt; use a high pressure washer to clean the wheel loader, if necessary .
- the roller drums and the condition of the contact scrapers with the elastic vulcollan bar.
- the following fill levels:
  - fuel (Diesel),
  - hydraulic oil,
  - engine oil,
  - the sprinkler system; add water, if required.
- Check whether the anti-buckling device is opened and whether the locking pin (1) has been inserted into the bolt.
- Make sure the roll-over bar is lifted and secured.
- The locking bolts (3) need to be attached and locked by the pins (2).



#### **DANGER!**

##### **Risk of death!**

Operation of the tandem roller with a folded roll-over bar can be fatal!  
The ROPS safety is suspended while the roll-over bar is folded.



**Fig.10 Visual inspection**

## 5.2.2 Refueling (Diesel)

- Before starting any operation with the tandem roller, check whether there is enough Diesel in the fuel tank and add Diesel, if required.



### **CAUTION!**

#### ***Environmental protection!***

Make sure that neither oil nor fuel can penetrate the soil, pollute water or leak into the sewer system!

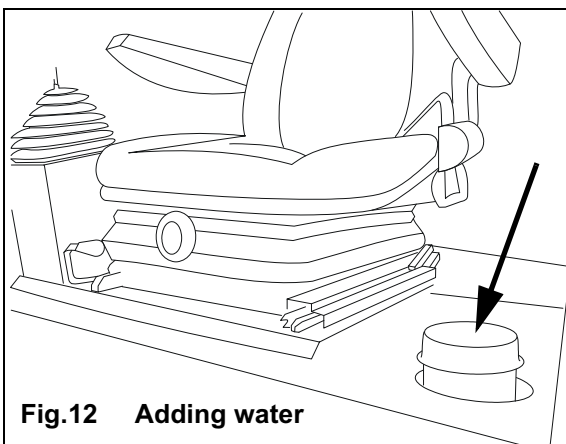
Type of fuel	according to standard	temperature range
Diesel fuel	ASTM D975-No. 1	for temperatures from below 0° C to - 30° C
Diesel fuel	ASTM D975-No. 2	for temperatures from above -10° C to 40° C



**Fig.11 Filler neck**

- The filler neck (1) for the fuel tank is to be found under the engine hood.
- Unlock the engine hood and open it.
- Unlock the tank cover.
- Open the tank cover and add a sufficient amount of Diesel fuel.
- Close the tank cover and lock it.
- Close the engine hood.

## 5.2.3 Filling and emptying the water tank



**Fig.12 Adding water**

- Open the tank cover in order to fill the sprinkler system next to the driver's seat.
- Fill a sufficient amount of water into the tank (approx. 200 liters).

## Emptying the water tank

For low environmental temperatures, empty the water tank and the conduits after parking the tandem roller.

- Empty the contents via the water filter, see maintenance instructions.



### 5.3 Getting on the vehicle and adjusting the driver's seat



#### WARNING!

*Danger of falling while getting on/off the tandem roller!*

- Dirty shoes may cause you to slip while you are accessing the driver's compartment. Clean the soles of your shoes before getting on the tandem roller.
- Always keep steps and handles dry and clean!
- Never use control elements, the steering column or the steering wheel as handles.

#### Handles and steps

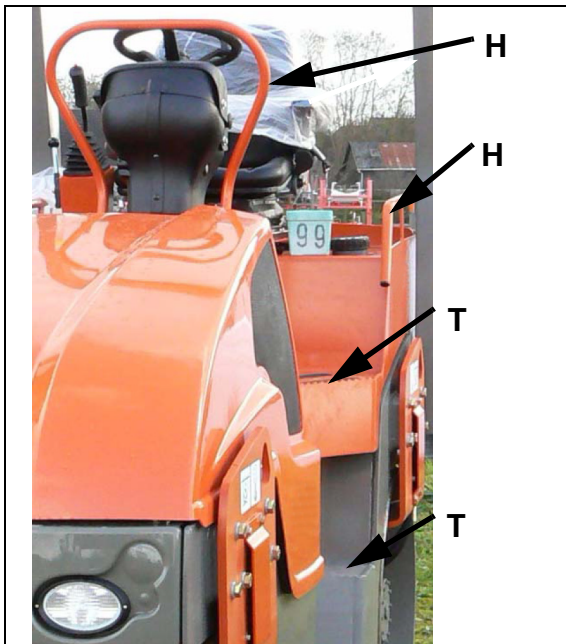


Fig.13 Handles and steps

- Hold on to the handles **H** and use the steps **T** to get on the vehicle and access the driver's compartment.
- After accessing the driver's compartment, immediately sit down on the driver's seat.

#### Weight and longitudinal adjustment of the driver's seat

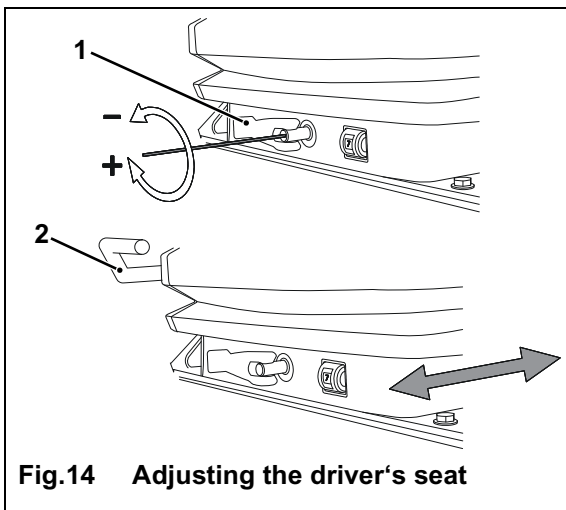


Fig.14 Adjusting the driver's seat



#### NOTE

The driver's seat has been designed for a maximum weight of 130 kg.

In order to prevent damage to your health, check and adjust the settings of the driver's seat each time before putting the wheel loader into operation.

- In order to make the necessary adjustments, the seat has to be unoccupied.
- Turn the adjustment lever (1) in the desired direction until it corresponds to your weight.
- The current setting is displayed on the vision panel.
- Use the corresponding locking lever (2) to adjust the longitudinal position of the seat.
- Lift the locking lever and move the driver's seat into the desired position until the locking lever clicks into place.

### Adjusting the backrest and the armrests

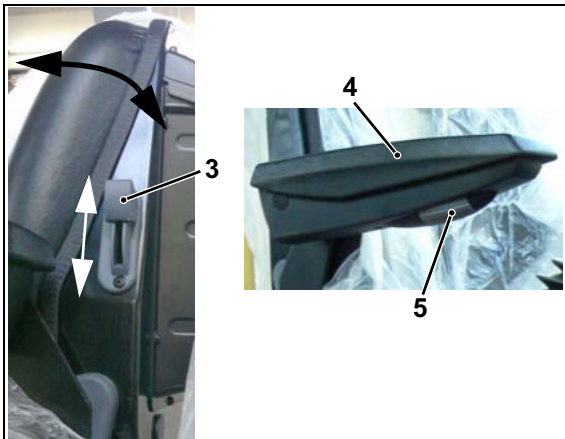


Fig.15 Backrest and armrests

- The backrest may be adjusted by means of the locking lever (3).
- Press down the locking lever (3) and adjust the backrest according to your individual needs.
- Both armrests (4) are foldable and their inclination can be adjusted.

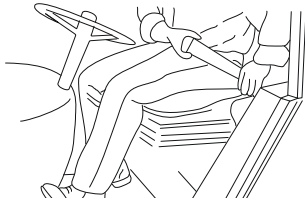


#### NOTE

Before using the tandem roller and before leaving it, lift the left armrest.

- In order to adjust the inclination, turn the corresponding adjusting wheel (5) below the armrest (4).
- Lift the armrests (4) in order to get on or off the vehicle.

### 5.3.1 Safety features of the driver's seat



#### DANGER!

##### *Risk of death!*

Before each start of the Diesel engine and before driving the tandem roller, fasten the safety belt.

### Fastening the safety belt

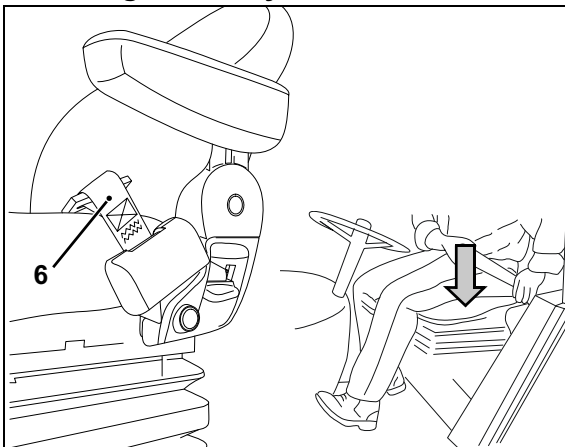


Fig.16 Safety belt

- The safety belt (6) is part of the driver's seat and is rolled up at the left side of the seat.
- Sit down on the driver's seat.
- Take the clasp of the safety belt (6) and pull the belt around your lower body.
- Attach the clasp to the lock of the safety belt.
- Ascertain that the clasp audibly clicks into the lock and is securely fastened.



#### NOTE

After locking it, the safety belt has to fit tightly.

### Seat contact switch

The driver's seat is equipped with a seat contact switch.

- The seat contact switch is activated by the weight of the driver on the driver's seat and enables the start of the Diesel engine.



#### DANGER!

##### *Risk of death!*

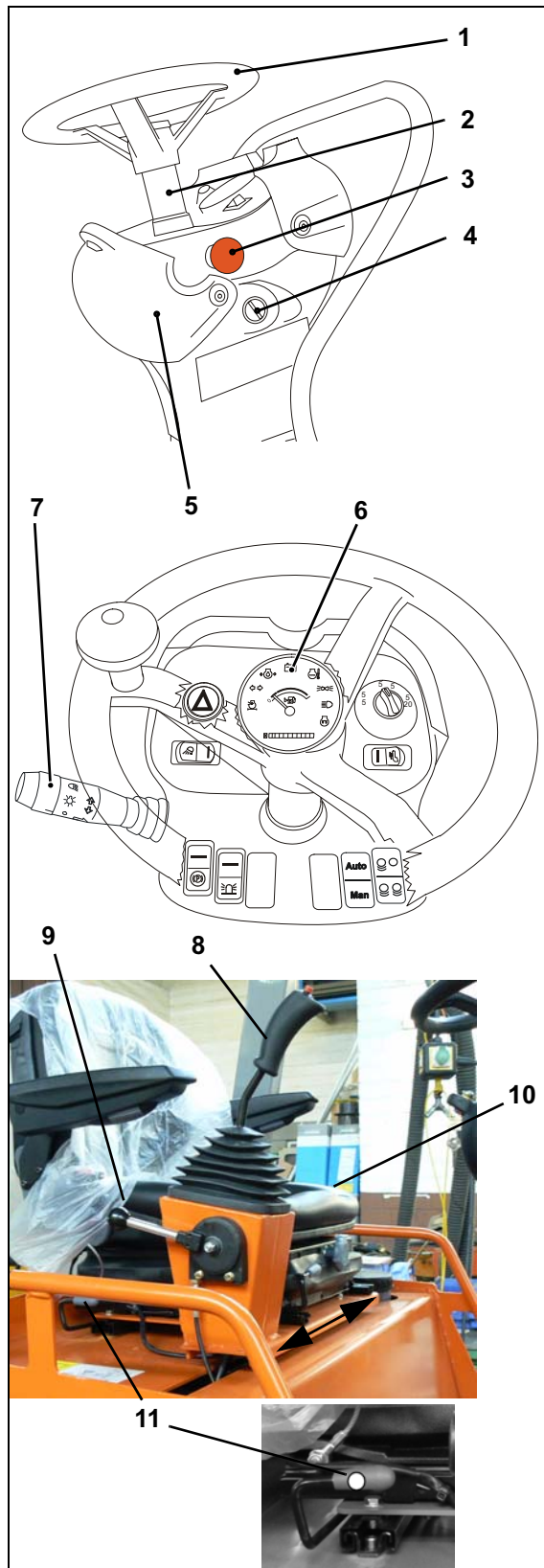
Never unfasten the safety belt and get up while the tandem roller is being operated.

The Diesel engine is stopped by the released contact switch after approx. 7 seconds.



## 6 CONTROL ELEMENTS AND DISPLAYS

### 6.1 Overview: Control elements in the driver's compartment



All control elements and displays for the operation of the tandem roller are installed in the driver's compartment.

The Diesel engine speed, the speed of the vehicle, the direction of motion and the vibration are started and adjusted by means of the joystick and the control lever in the right armrest.

- 1 Steering wheel
- 2 Steering column
- 3 Emergency stop push-button
- 4 Ignition lock
- 5 Dashboard cover
- 6 Dashboard
- 7 Steering column lever (tandem roller with StVZO equipment/ MOT approval)
- 8 Control lever/joystick: Vibration on/off
- 9 Engine speed gearshift (Diesel engine speed and frequency)
- 10 Driver's seat
- 11 Lever for the lateral adjustment of the driver's seat

**Fig.17 Control elements**

### 6.1.1 Control elements at the steering column

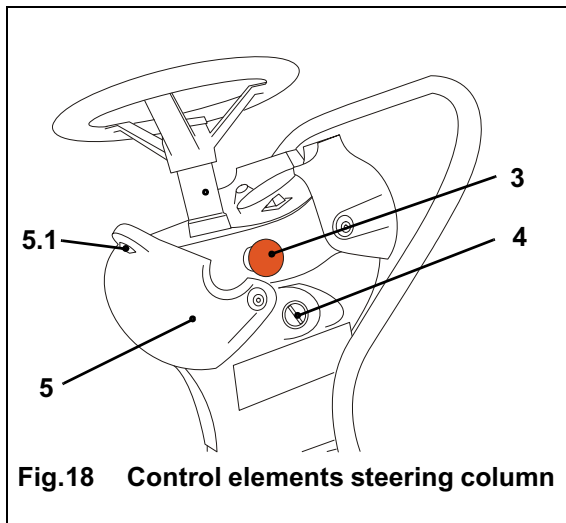


Fig.18 Control elements steering column

Right side of the steering column:

3 Emergency stop push-button



#### **DANGER!**

In an emergency which calls for an immediate stop of the tandem roller, push the **emergency stop push-button**.

4 Ignition lock:

- Position 0 = Ignition off, remove ignition key.
- Position I = Ignition on and preheating Diesel engine.
- Position II = Start Diesel engine

5 Dashboard cover with lock (5.1) for the cover.

### 6.1.2 Switches and displays on the dashboard

#### Safety switches and lighting

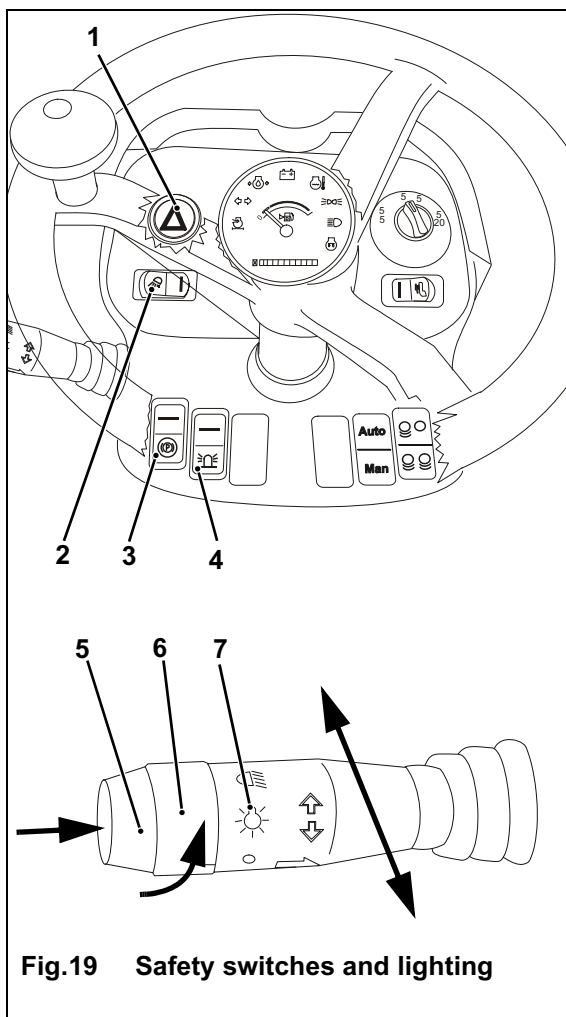


Fig.19 Safety switches and lighting

1 Switch for the hazard warning lights (StVZO equipment/MOT approval only).

2 Switch for front and rear work lights.

3 Switch for the parking brake.

4 Switch for the rotating light (optional feature).

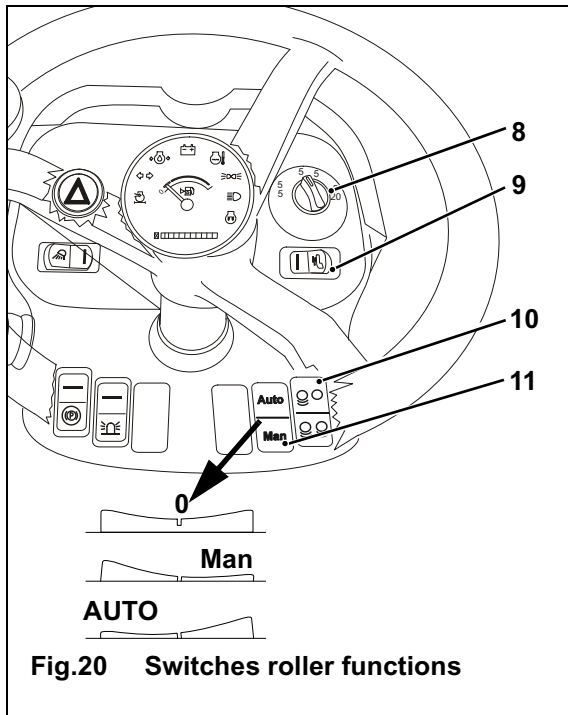
#### **Drop-arm switches (StVZO equipment/MOT approval only)**

5 Pushbutton switch horn.

6 Drop-arm switch light.

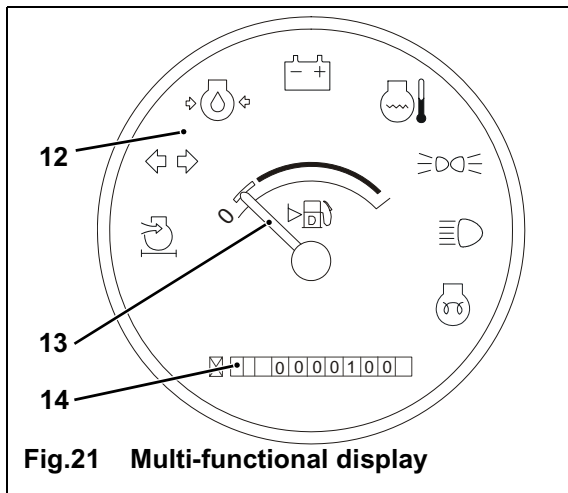
7 Drop-arm switch turn signals.

### Switches for roller functions




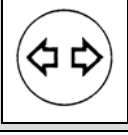
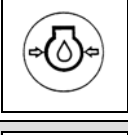
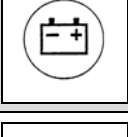
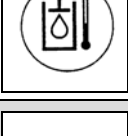
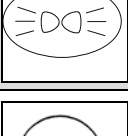
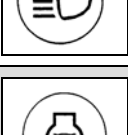
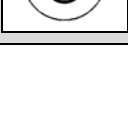
- 8 Selector switch interval sprinkling
- 9 Switch water pump sprinkling on/off
- 10 Selector switch vibration drum
  - **forward** = vibration front drum
  - **backward** = vibration front and rear drum
- 11 Selector switch vibration mode, 3 positions:
  - **0** = Off
  - **MAN** = On
  - **Auto** = Auto stop.

### Multi-functional display



- 12 Multi-functional display
- 13 Fuel gauge
- 14 Operating hour meter

### 6.1.3 Table of symbols of the multi-functional display

Symbol	Display	Description
	<b>Warning light accumulation of dirt Diesel engine air filter (red)</b>	If this warning light is activated, clean or replace the filter, see maintenance instructions.
	<b>Control lamp turn signals (green)</b>	Flashes when the turn signals have been activated, for vehicles with StVZO equipment/MOT approval only.
	<b>Warning light Diesel engine oil pressure (red)</b>	Immediately turn off the Diesel engine if this display is activated during operation.
	<b>Warning light charge control (red)</b>	Lights up on activation of the ignition. Goes out as soon as the Diesel engine and the generator have started.
	<b>Warning light hydraulic oil temperature (red)</b>	Activation indicates that the hydraulic oil temperature is too high, see maintenance instructions.
	<b>Control light low beam lights (green)</b>	Lights up when the low beam lights are activated, for vehicles with StVZO equipment/MOT approval only. Lights up when the work lights are activated.
	<b>Control light brights (blue)</b>	Lights up when the brights are activated; for vehicles with StVZO equipment/MOT approval only.
	<b>Display preheat (yellow)</b>	Lights up while the Diesel engine is being preheated (ignition lock position I). Goes out as soon as the required operating temperature has been reached.

## 6.1.4 Control lever and engine speed gearshift lever on the right side of the driver's seat

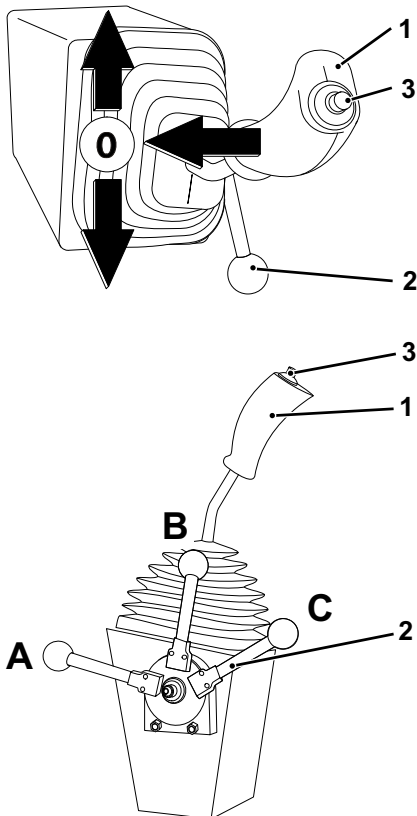


Fig.22 Console driver's seat

The control lever/joystick (1) and the engine speed gearshift (2) are installed on the right side of the driver's seat.

- The lever (1) controls the functions related to driving the tandem roller.
- In order to operate the control lever, pull it towards you and move it into the desired direction of motion.
  - Control lever moved forwards = Forward motion.
  - Control lever moved backwards = Reverse motion.



### NOTE

The more the control lever is moved into the desired direction, the more the speed of the tandem roller increases. The maximum speed is reached when the lever reaches its end position. In the neutral position **0**, the tandem roller stops.

- The engine speed gearshift (2) serves two functions:
  - it sets the Diesel engine speed for driving the tandem roller and roller drum operation and
  - during operation with vibration, the frequency gearshift sets the low and high frequency.
    - Lever position backward, position **A**  
Diesel engine idle speed
    - Lever position forward, position **B**  
low Diesel engine speed for driving, low frequency for operation with vibration.
    - Lever position forward, position **C**  
high Diesel engine speed for roller operation, high frequency for operation with vibration
- Button vibration (3)
  - Push the button once to turn on the vibration.
  - Pushing the button again deactivates the vibration.
- Ratchet lever (4) for the lateral adjustment of the driver's seat.



### NOTE

Carry out the lateral adjustment of the driver's seat before starting the tandem roller. Always stop the operation of the vehicle before moving the driver's seat into a different position.

## 7 STARTING, DRIVING AND STOPPING THE TANDEM ROLLER

### 7.1 Before the initial start



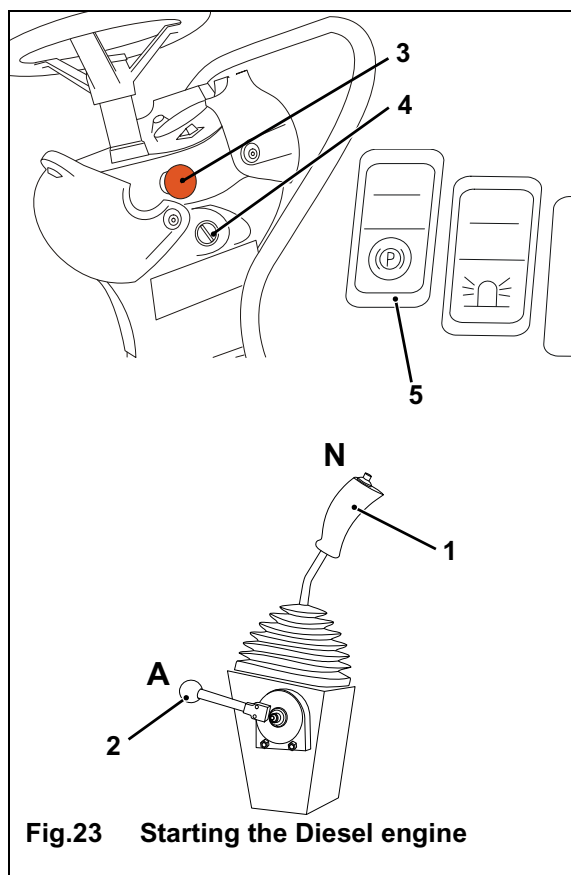
#### NOTE

##### **Obligation to inform yourself!**

- Inform yourself of all issues related to operating the tandem roller.
- Read the safety instructions before starting the tandem roller. In addition to this, be sure to observe the national and local laws and directions concerning the operation of earth-moving construction machines. In case of doubt, contact your local HYUNDAI dealer.

### 7.2 Starting the Diesel engine

#### 7.2.1 Start



#### NOTE

In order to start the Diesel engine, the contact switch in the driver's seat needs to be activated by the weight of the driver.

- Insert the ignition key into the ignition lock (4) and activate the ignition.
- Apply the parking brake (5). The control lamp in the switch lights up.
- Check whether the emergency stop push-button (3) is released.
- In order to start the Diesel engine, make sure the engine speed gearshift lever (2) is in position **A** (idle speed).
- The control lever (1) needs to be in the neutral position **N**.
- Turn the ignition key further to the right:
  - I Ignition ON.
  - II Engine start (the starter is turning).
- As soon as the Diesel engine has started, immediately release your grip on the ignition key.



#### NOTE

A warming-up phase is required prior to operating the tandem roller. Make sure the hydraulic system has reached its operating temperature before starting work.

#### The Diesel engine does not start!

- Check:
  - whether the parking brake is applied,
  - the charge condition of the battery,
  - the Diesel level in the fuel tank,
  - the engine compartment for damage.

#### The Diesel engine still does not start!

- Contact the service staff, inform your local HYUNDAI dealer.

## 7.3 Driving the tandem roller

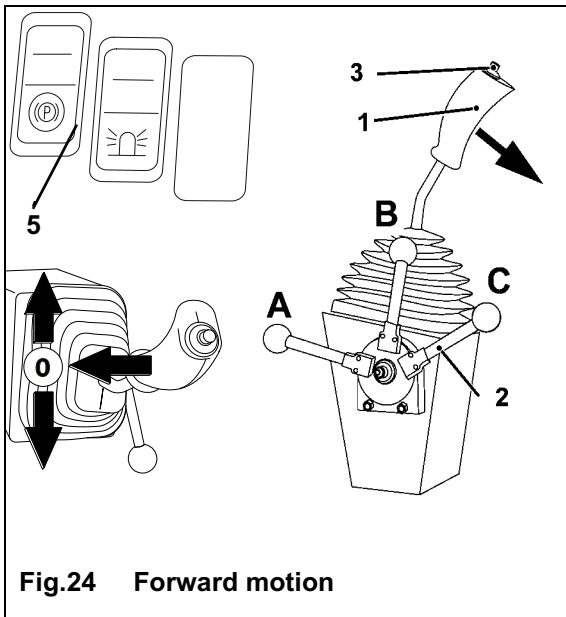


### WARNING!

The tandem roller may only be operated with the safety belt fastened.

### 7.3.1 Starting and stopping forward and reverse motion

#### Forward motion



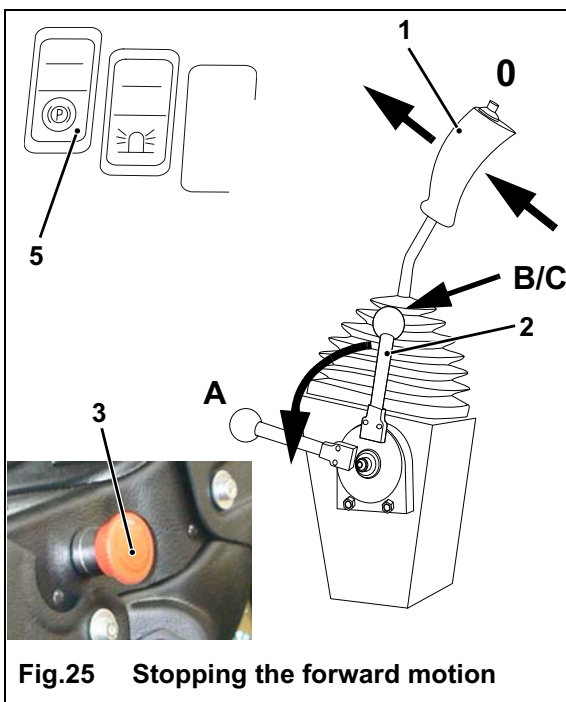
- After the Diesel engine has warmed up, move the engine speed gearshift lever (2) from position **A** to position **B** or **C**.
- The Diesel engine reaches the required engine speed.
- Hold on to the steering wheel.
- Release (deactivate) the parking brake by means of the switch (5).
- Pull the control lever (1) towards you and move it forward.
- The tandem roller starts to move forward.



### NOTE

The more the control lever is moved into the desired direction, the more the speed of the tandem roller increases. The maximum speed is reached when the lever reaches its end position. In the neutral position **0**, the tandem roller stops.

#### Stopping the forward motion



Stop the forward motion by means of the control lever (1) or, in the event of an emergency, actuate the emergency stop push-button (3).

- Move the control lever (1) back into the neutral position **0**. The tandem roller stops.
- Apply the parking brake by actuating the switch (5), which causes the corresponding lamp to light up.
- Move the engine speed gearshift lever (2) from position **B** or **C** to position **A** (Diesel engine idle speed).

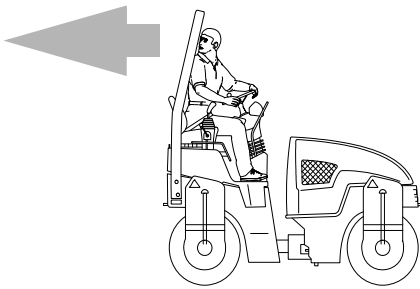


### DANGER!

In the event of an emergency which calls for an immediate stop of the tandem roller, push the emergency stop push-button (3).



## Reverse motion



### DANGER!

#### *Risk of accidents!*

- Prior to any reverse movement of the tandem roller, make sure that your view to the rear is unobstructed!
- Before and while driving backwards, always check the area behind you by looking backwards!

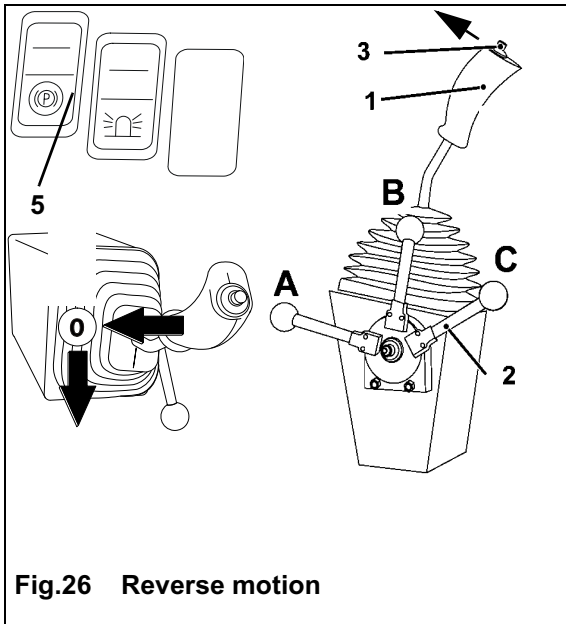


Fig.26 Reverse motion

- After the Diesel engine has warmed up, move the engine speed gearshift lever (2) from position **A** to position **B** or **C**.
- The Diesel engine reaches the required engine speed.
- Hold on to the steering wheel.
- Release (i.e. deactivate) the parking brake (5). The corresponding light goes out.
- Pull the control lever (1) towards you and move it backwards.
- The tandem roller starts to move backwards.



### NOTE

The more the control lever is moved into the desired direction, the more the speed of the tandem roller increases. The maximum speed is reached when the lever reaches its end position. In the neutral position **0**, the tandem roller stops.

## Stopping the reverse motion

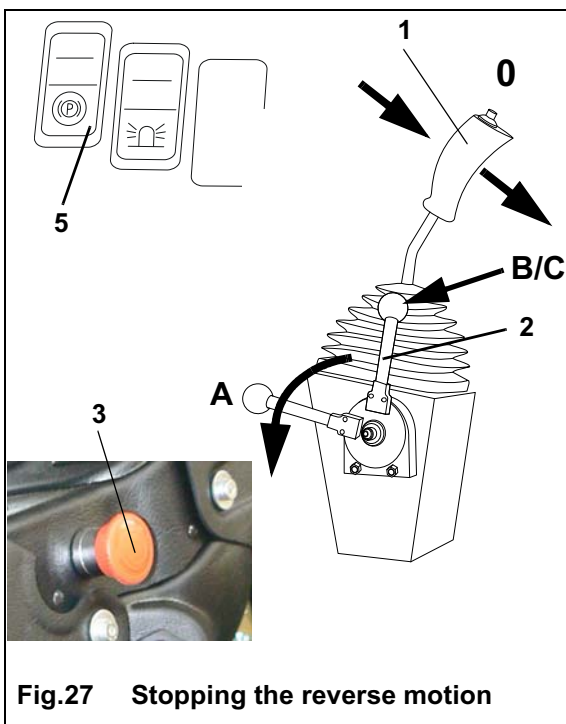


Fig.27 Stopping the reverse motion

Stop the reverse motion by means of the control lever (1) or, in the event of an emergency, actuate the emergency stop push-button (3).

- Move the control lever (1) back into the neutral position **0**. The tandem roller stops.
- Apply the parking brake by actuating the switch (5), which causes the corresponding lamp to light up.
- Move the engine speed gearshift lever (2) from position **B** or **C** to position **A** (Diesel engine idle speed).



### DANGER!

In the event of an emergency which calls for an immediate stop of the tandem roller, push the **emergency stop push-button (3)**.



### 7.3.2 Changing direction

#### Turn signals (StVZO equipment / MOT approval)

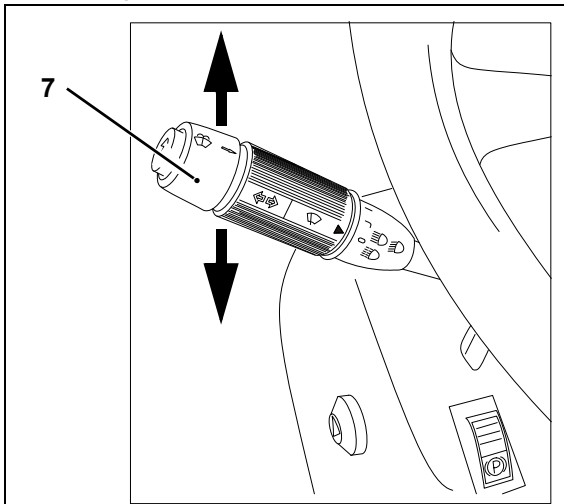


Fig.28 Turn signals

- Before changing direction, activate the turn signals by means of the drop-arm (7).
- Activation of the turn signals:
  - **Turn signal, right:** Press the drop-arm (7) upwards.
  - **Turn signal, left:** Press the drop-arm (7) downwards.

#### Steering motions

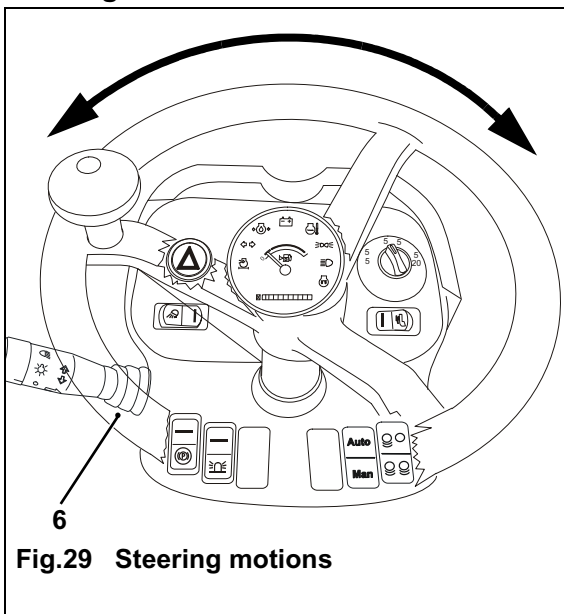


Fig.29 Steering motions

- Turn the steering wheel (6) into the desired direction of motion.
- Turning the steering wheel to the right causes the tandem roller to turn right.
- Turning the steering wheel to the left causes the tandem roller to turn left.
- The steering angle determines the turning radius.

## 7.4 Driving in unfavorable weather conditions



### **DANGER!**

#### ***Risk of accidents!***

Immediately stop the operation of the tandem roller if fog or heavy rain restricts your view.

- Stop operating the vehicle or reduce its speed in order to allow for an instant stop, if required.

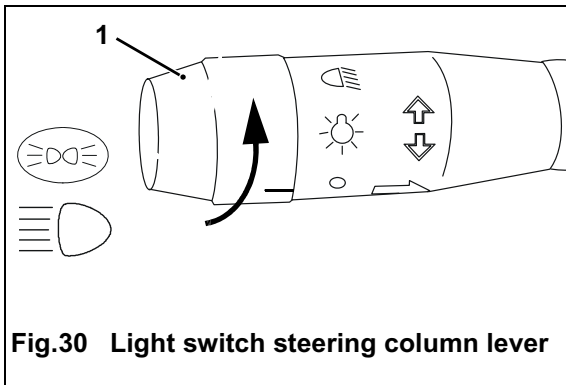
### 7.4.1 Driving the tandem roller in the dark or in poor visibility conditions



### **NOTE**

Make sure the work lights (or, if your vehicle disposes of StVZO equipment/MOT approval, the low beam lights) are always activated while operating the tandem roller.

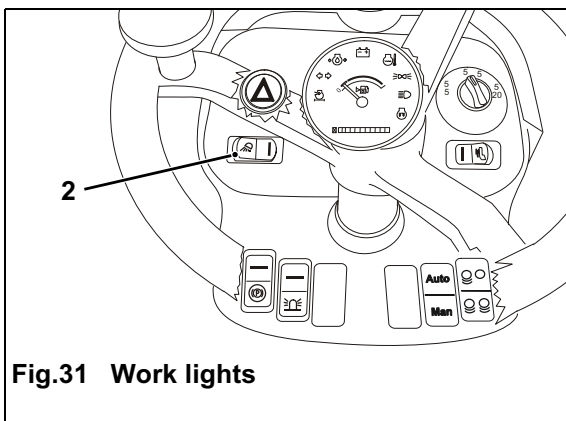
### 7.4.2 Activating the low beam lights (applies to tandem rollers with StVZO equipment/MOT approval only)



**Fig.30 Light switch steering column lever**

- Always turn on the low beam lights when operating the tandem roller.
- Before leaving the vehicle, turn off the low beam lights.
- Turn the light switch (1) in the drop arm forward.
  - Position 0: Light deactivated.
  - Position 1: Parking light activated.
  - Position 2: Low beam lights activated.
- The corresponding control lamp lights up at the multi-functional display.
- Position 3: Brights; pull the drop-arm (1) towards the driver until it reaches the stop.
- The control lamps for the brights and the low beam lights light up at the multi-functional display.

### 7.4.3 Activating the work lights (applies to tandem rollers without StVZO equipment/MOT approval)



**Fig.31 Work lights**

- Always turn on the work lights when operating the tandem roller.
- In order to operate the tandem roller in the dark, immediately turn on the work lights by means of the corresponding switch (2).



### **DANGER!**

#### ***Danger caused by restricted visibility!***

If the visibility range, despite of the activation of the work lights, is shorter than the braking distance of the tandem roller, immediately stop the operation of the vehicle.

## 7.5 Stopping and parking the tandem roller

### Stopping the Diesel engine

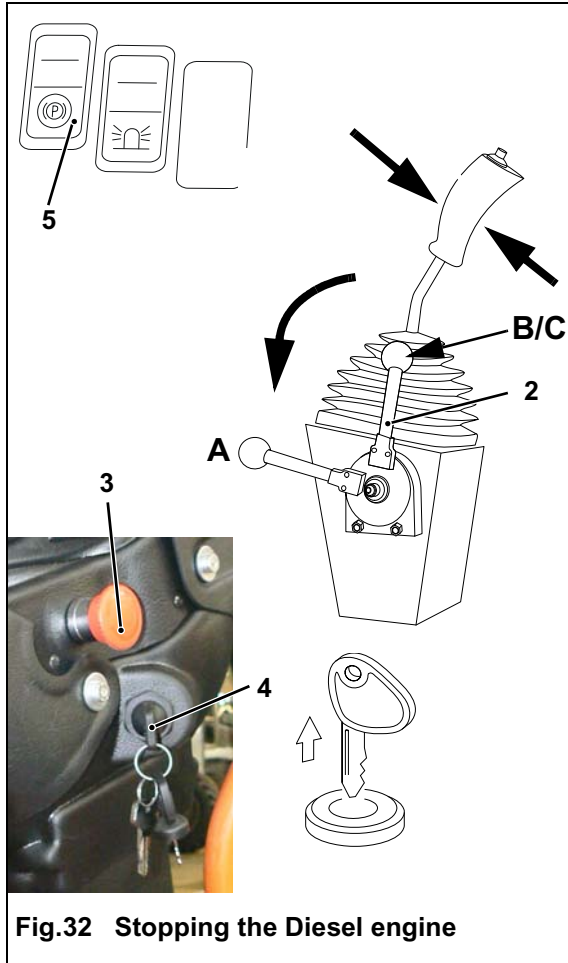


Fig.32 Stopping the Diesel engine

- Stop the tandem roller on solid and level ground.
- Apply the parking brake by means of the switch (5). The control lamp at the switch lights up.
- Move the engine speed gearshift lever (2) from position **B** to position **A** (idle speed Diesel engine).
- Stop the Diesel engine and turn the ignition key (4) to position **0**.
- Press the emergency stop push-button (3).
- Remove the ignition key.

### 7.5.1 Leaving the tandem roller

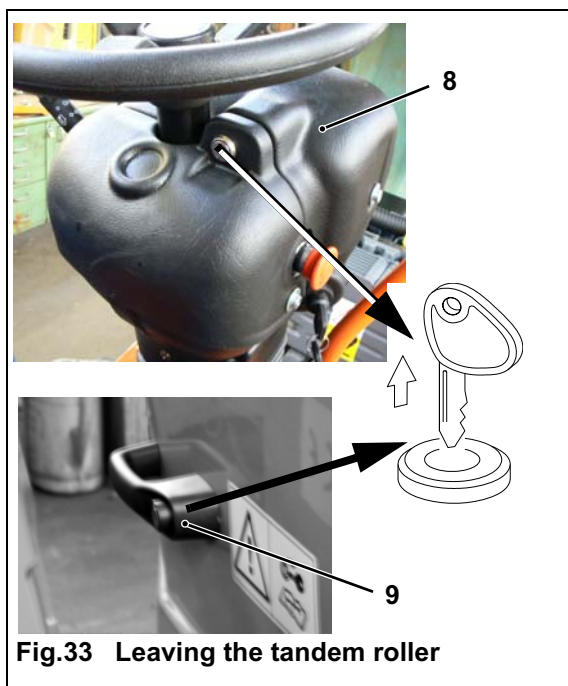


Fig.33 Leaving the tandem roller

- Before leaving the driver's compartment, close the cover (8) of the dashboard.
- Lock the cover and pull out the ignition key.
- After leaving the driver's compartment, lock the engine hood (9).
- In addition, use the wheel chocks to secure the vehicle against rolling.



#### WARNING!

If you intend to park the tandem roller in areas that are part of public road traffic, be sure to observe the applicable regulations, safety guidelines and laws.

## 8 DRIVING ON SLOPES

### 8.1 Driving on slopes

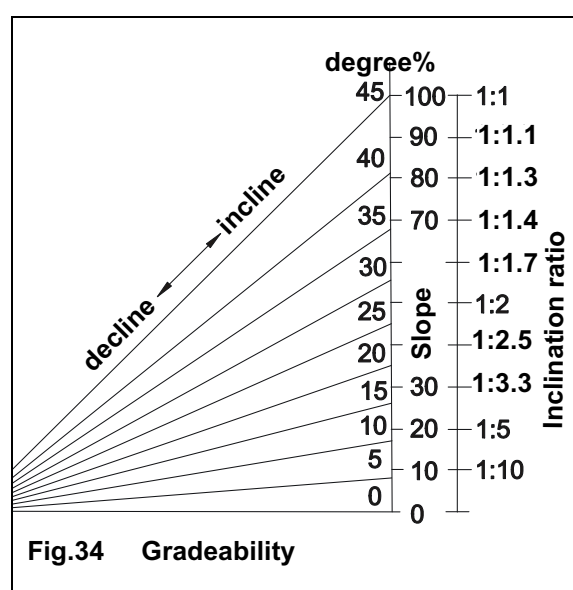


#### **DANGER!**

##### ***Danger of tipping!***

Never drive or park the tandem roller across slopes, as operation involving lateral inclinations increases the danger of tipping! Never turn the vehicle around on a slope! Take the maximum climbing ability (gradeability) of the tandem roller into account before operation on slopes.

#### 8.1.1 Maximum gradeability of the tandem rollers



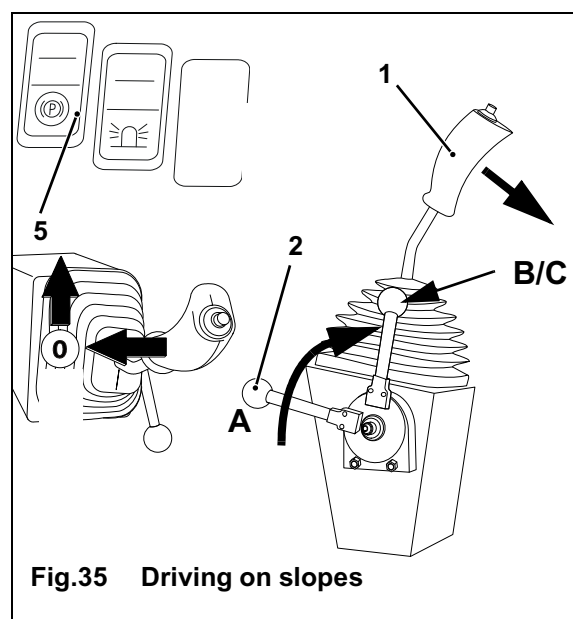
Tandem roller Type	with compaction [%]	without compaction [%]
HR25T-9	30	35
HR26T-9	30	35
HR30T-9	30	35
Inclination ratio in %/ degrees see illustration on the left.		



#### **NOTE**

The gradeability of the tandem roller depends on the characteristics of the ground.

#### 8.1.2 Starting operation on slopes



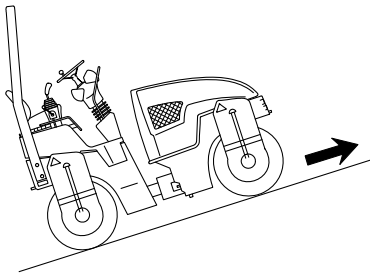
- Move the frequency gearshift lever (2) from position **A** to position **B** or **C** to drive the tandem roller.
- The Diesel engine reaches the required engine speed for operation on slopes.
- Hold on to the steering wheel.
- Deactivate (i.e. release) the parking brake (5). The lamp in the switch goes out.
- Pull the control lever (1) towards you and move it into the desired direction of motion (forward/backward).
- The tandem roller starts to move forward or backward on the slope.



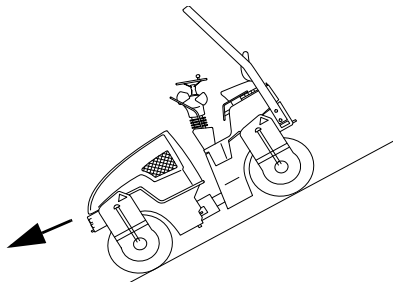
#### **CAUTION!**

Always drive slowly when going uphill or downhill. Do not perform any abrupt steering motions.

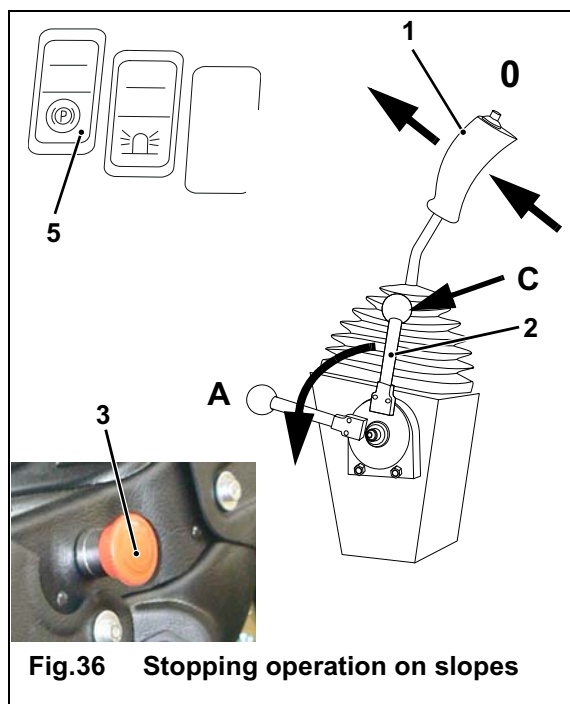
### 8.1.3 Driving uphill



### 8.1.4 Driving downhill



### 8.1.5 Stopping operation on slopes



#### NOTE

Forward motion, the drum points upwards, in the direction of motion.

In case you need to drive downhill again after moving up the hill, make sure you drive uphill with the rear end pointing upwards!



#### NOTE

Always drive downhill with the drum ahead!

Stop the operation on slopes by means of the control lever (1) or, in the event of an emergency, actuate the emergency stop push-button (3).

- Put the control lever (1) back into the neutral position **0**.
- Activate the parking brake by means of the corresponding switch (5)
- Move the engine speed gearshift lever (2) from position **C** to position **A** (Diesel engine idle speed).



#### DANGER!

In the event of an emergency which calls for an immediate stop of the tandem roller, push the **emergency stop push-button (3)**.

## 9 TOWING THE TANDEM ROLLER

### 9.1 Safety instructions referring to towing the tandem roller



#### CAUTION!

##### *Safety precautions related to towing!*

Only experienced and adequately trained persons may carry out the necessary preparations and the towing itself.

Be sure to take the total weight of the tandem roller into account, see chapter "Technical specifications".

Establish an appropriate and safe towing connection between the tandem roller and the towing vehicle.



#### WARNING!

##### *Safety precautions related to towing!*

On slopes, **tow bars** must be used to connect the tandem roller to the towing vehicle.

The tandem roller may only be towed if its emergency steering system is in working order.



#### WARNING!

##### *Material damage!*

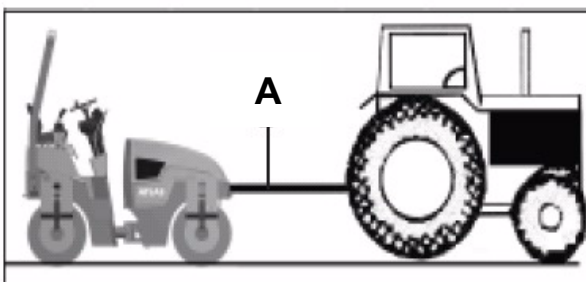
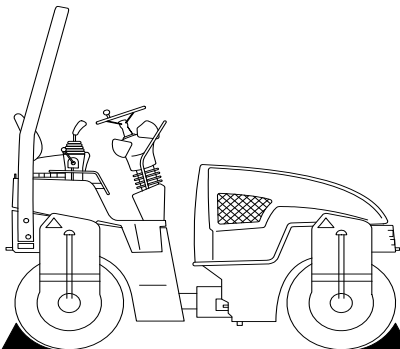
The required preparations regarding the travel pump and the parking brakes must be completed before towing the tandem roller.

The towing distance is to be kept as short as possible (maximum distance: **500 meters**).

The towing speed may not exceed **1 km/h**.

### 9.2 Measures to be taken prior to towing

#### 9.2.1 Securing the tandem roller against rolling



#### DANGER!

##### *Risk of death!*

Be sure to use chocks to secure the drums of the tandem roller against rolling!

With the parking brake and the HP valves of the travel pump released, the tandem roller is not secured against rolling.

On slopes, use a **tow bar (A)** in order to connect the tandem roller to the towing vehicle.

## 9.2.2 Releasing the parking brake and the HP valves



### WARNING!

#### *Risk of death!*

If the tandem roller is not secured against rolling, you must **not** carry out the following work!

In order to tow the tandem roller, short-circuit the hydraulic circuit between the travel pump and the hydraulic drum drives.

### Releasing the HP valves at the travel pump

4 mm socket head wrench

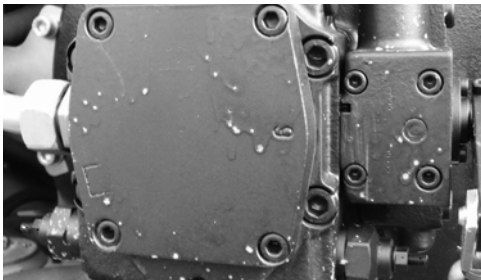


Fig.37 Opening the HP valves

- The HP valves are to be found below the travel pump.
- In order to release the HP valves, you need a socket head wrench (size WW 4).
- Mark the position of the adjusting spindles (1).
- Loosen the counter nuts (2) by a half-turn.
- Use the socket head wrench to tighten the adjusting spindles (1) until they closely fit to the spring plate.
- By approx. another half-turn, short-circuit the valves.

### Deactivating (releasing) the parking brake

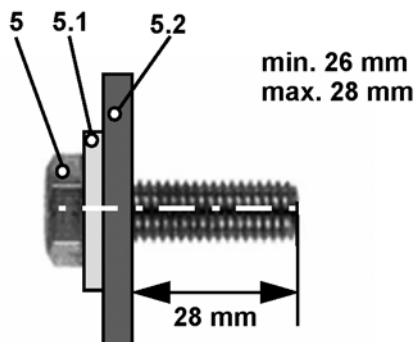
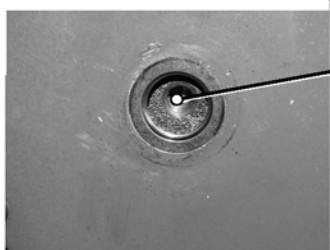
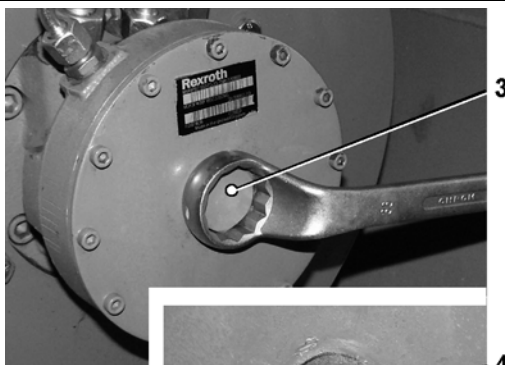


Fig.38 Releasing the parking brake

- In order to tow the tandem roller, loosen the discs of the parking brakes in the drum drives.
- Unscrew the lock screws (3) at the front and rear drum drive.



### NOTE

The washers (5.1 & 5.2) and the screws (5) required in order to release the brakes are to be found in the tool kit.

The minimum thread length from the interior surface of the big disc (5.2) is 26 mm and may not exceed **28 mm**. Be sure to choose an appropriate screw length.

- Manually attach an M12 screw (5) with a small (5.1) and a big (5.2) washer to the interior tap hole (4) of the drum drives and screw them in by hand until you reach the limit stop.
- Use the wrench to tighten the screws (5) by another 3/4-turn.
- As a result, the brakes are released.



### 9.3 Carrying out the towing process



#### WARNING!

The tandem roller may only be towed within the closed off work zone.

Be sure to keep the towing distance as short as possible, towing the tandem roller out of the immediate danger or work zone only.



#### WARNING!

##### *Material damage!*

The preparations at the travel pump and the parking brakes need to be completed before starting the towing process.

- The towing distance is to be kept as short as possible (maximum towing distance: **500 meters**).
- The towing speed must not exceed **1 km/h**.

#### Tie-down and towing distance

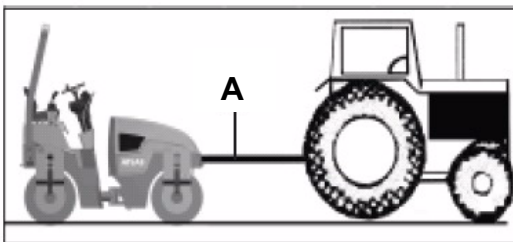
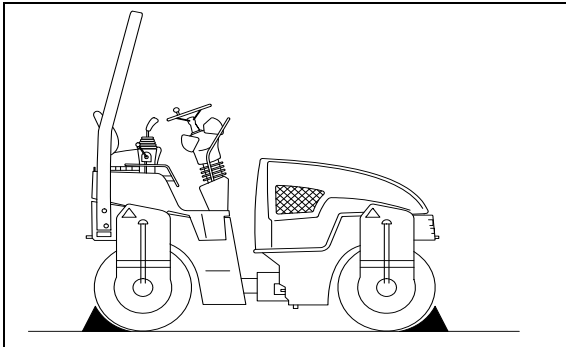


Fig.39 Tie-down

- Always fasten the tandem roller at the towing lug (1).
- Be sure to secure the tandem roller against rolling! Use a tow bar **A** to establish a safe connection between the towing vehicle and the tandem roller.
- Remove the chocks and other safeguarding material from the drum and the rear wheels.
- Keep the towing distance as short as possible.



### 9.3.1 After towing



#### Closing the HP valves at the travel pump

4 mm socket head wrench

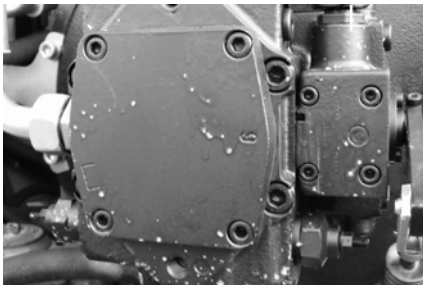


Fig.40 Closing the HP valves

#### Activating the parking brake

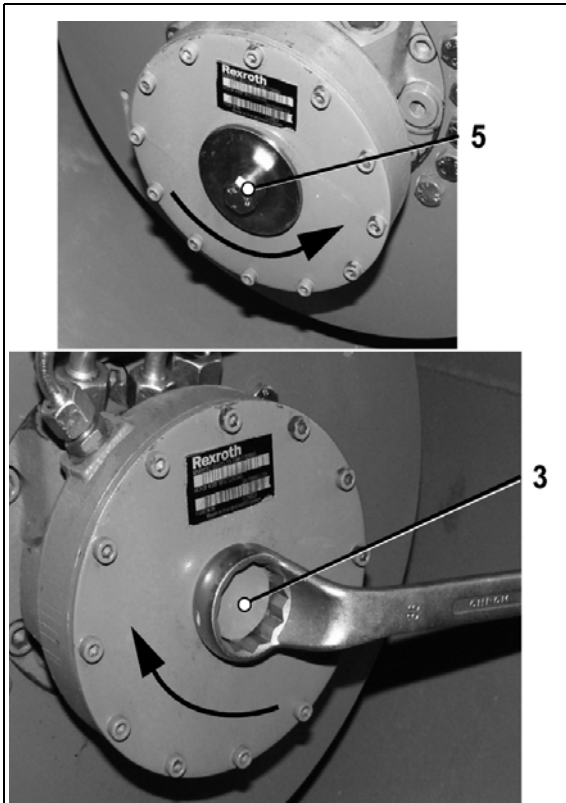


Fig.41 Activating the parking brake



#### **DANGER!**

Immediately after towing, secure the tandem roller against rolling by means of chocks. Be sure the parking brake is activated before disconnecting the tandem roller from the towing vehicle.

- After completing the towing process, the hydraulic circuit between the travel pump and the drum drives needs to be closed and the parking brake activated.
- The HP valves are to be found below the travel pump.
- In order to close the HP valves, you need a socket head wrench (size WW 4).
- Use the wrench to loosen the adjusting spindles (1) until they clear the
- Use the socket head wrench to tighten the adjusting spindles (1) until they release the spring plate and reach the previously marked position.
- Tighten the counter nuts (2) at a tightening torque of **22 Nm**.
- After towing the tandem roller, the parking brakes in the drum drives need to be activated again (i.e. the braking function is re-established).
- Unscrew the M12 screws (5) from the interior tap hole of each drum drive.
- Store the screws (5) and the washers in the tool kit.
- The brakes are activated and the braking function has been established.
- Tighten the lock screws (3) at the front and rear drum drives.



#### **NOTE**

After activating the parking brake, you can disconnect the tandem roller from the towing vehicle.

## 10 WORKING WITH THE TANDEM ROLLER

### 10.1 Safety instructions referring to work with the vehicle



#### NOTE

##### **Obligation to inform yourself!**

- Inform yourself of all issues related to operating the tandem roller.
- Read the safety instructions before starting the tandem roller. In addition to this, be sure to observe the national and local laws and directives concerning the operation of earth-moving construction machines.
- In case of doubt, contact your HYUNDAI dealer.



#### DANGER!

##### **Risk of injuries!**

Transporting individuals is strictly prohibited! The driver needs to make sure that no persons are on the steps or in the driver's compartment while the tandem roller is being operated .

### 10.2 Control elements related to working

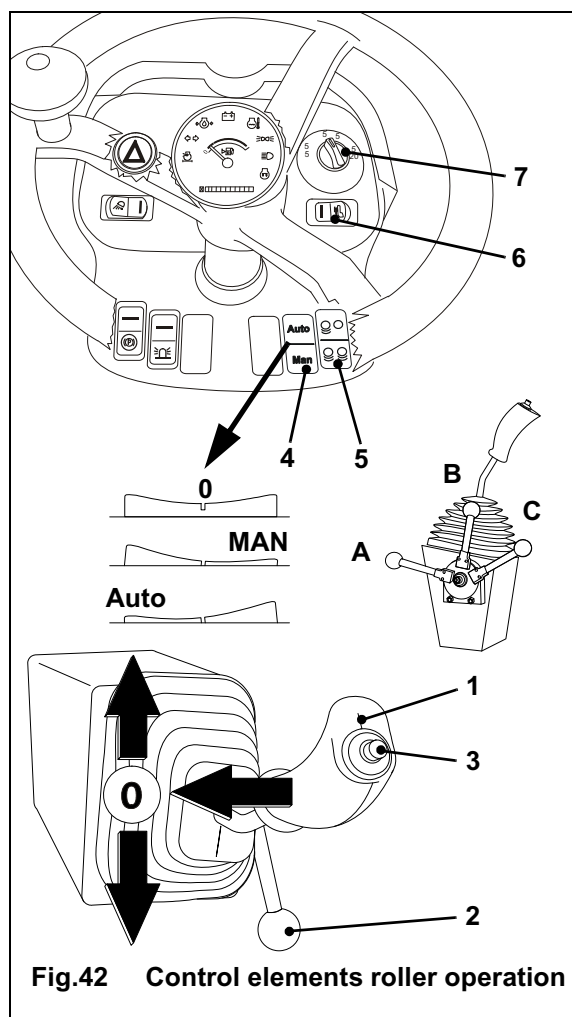


Fig.42 Control elements roller operation

The functions related to working with the tandem roller are activated by the selector switches vibration on the dashboard and the joystick/control lever to the right of the driver's seat.

- 1 Control lever for tandem roller operation (forward/reverse motion) and for adjusting the speed of the vehicle.
- 2 The Diesel engine speed gearshift lever (2) sets the Diesel engine speed for driving and roller operation and
  - increases the frequency for operation with vibration.
  - Lever set to position **A**: Diesel engine idle speed
  - Lever set to position **B**: low Diesel engine speed and low frequency for operation with vibration
  - Lever set to position **C**: high Diesel engine speed and high frequency for operation with vibration.
- 3 Button on the control lever to activate/deactivate vibration
- 4 Selector switch vibration mode, 3 positions:
  - **0** = Off
  - **MAN** = On
  - **Auto** = Auto stop
- 5 Selector switch vibration drum:
  - **forward** = vibration front drum
  - **backward** = vibration front and rear drum
- 6 Switch to activate/deactivate the water pump.
- 7 Selector switch for the sprinkling intervals.

## 10.3 Fields of application

The tandem rollers may be used for the following fields of application:

- repairing asphalt surfaces
- pavements/sidewalks and bicycle paths
- landscaping and gardening
- light foundations.

### 10.3.1 Starting roller operation (forward/reverse motion) on asphalt surfaces

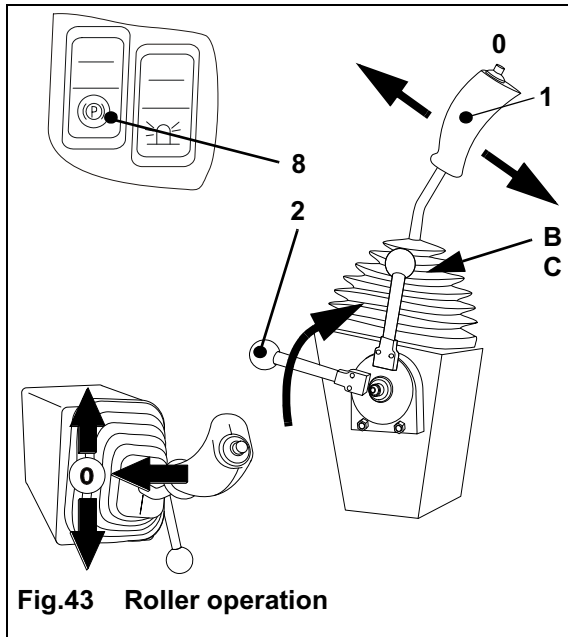


Fig.43 Roller operation



#### NOTE

##### Conditions for roller operation!

The tandem roller needs to be serviceable with the Diesel engine started and warmed up, see chapter Starting the tandem roller.

- Deactivate (i.e. release) the parking brake by means of the switch (8). The light in the switch goes out.
- Put the Diesel engine speed gearshift lever (2) into position **B** or **C** for roller operation at a low or a high Diesel engine speed.
- The Diesel engine reaches the engine speed required for roller operation.
- Hold on to the steering wheel.
- Pull the control lever (1) towards you and move it into the desired direction of motion (forward/backward).
- The further you move the control lever (1) into the respective direction, the more the speed of the vehicle increases.

### 10.3.2 Roller operation and sprinkling

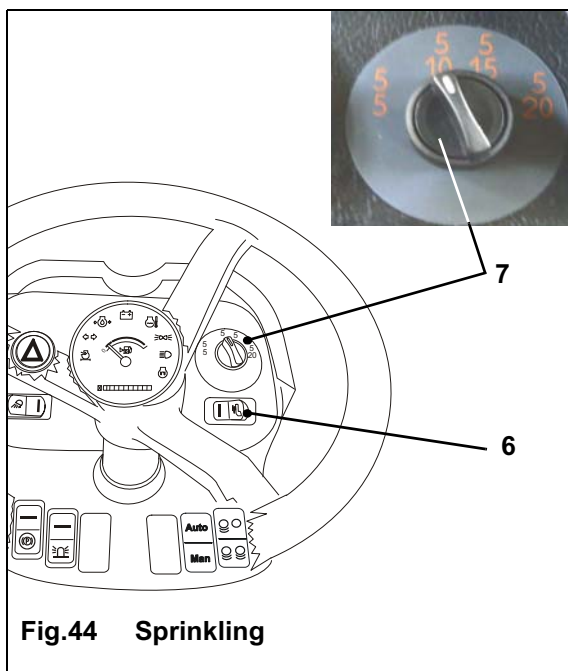


Fig.44 Sprinkling

If the roller operation calls for sprinkling the drums, you can choose from a number of different sprinkling intervals.

- Activate the sprinkling by means of the switch for the water pump (6).
- Set the selector switch (7) to the desired sprinkling interval.
- There are the following sprinkling options:
  - 5/5 = sprinkling: 5 secs, intermission: 5 secs
  - 5/10 = sprinkling: 5 secs, intermission: 10 secs
  - 5/15 = sprinkling: 5 secs, intermission: 15 secs
  - 5/20 = sprinkling: 5 secs, intermission: 20 secs
- In order to stop the sprinkling, deactivate the water pump by means of the corresponding switch (6).

## 10.4 Roller operation with vibration

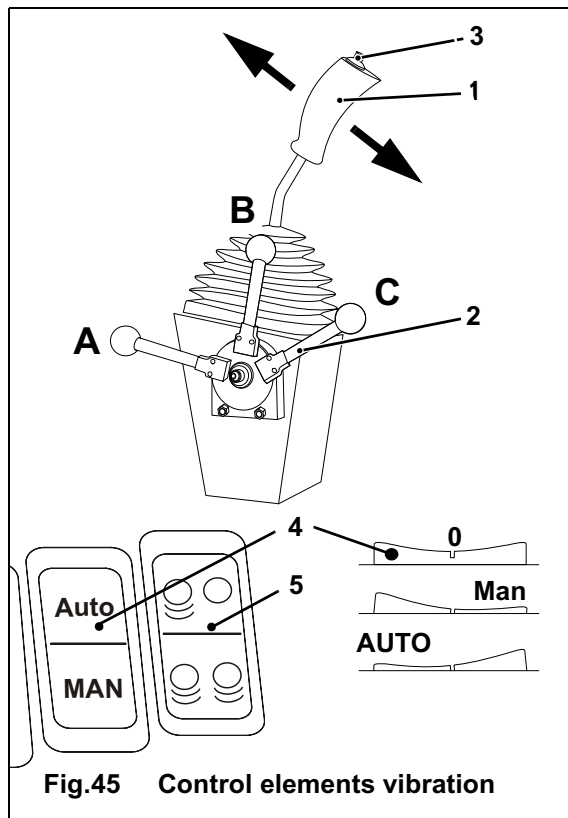
### 10.4.1 Control elements for roller operation with vibration



#### WARNING!

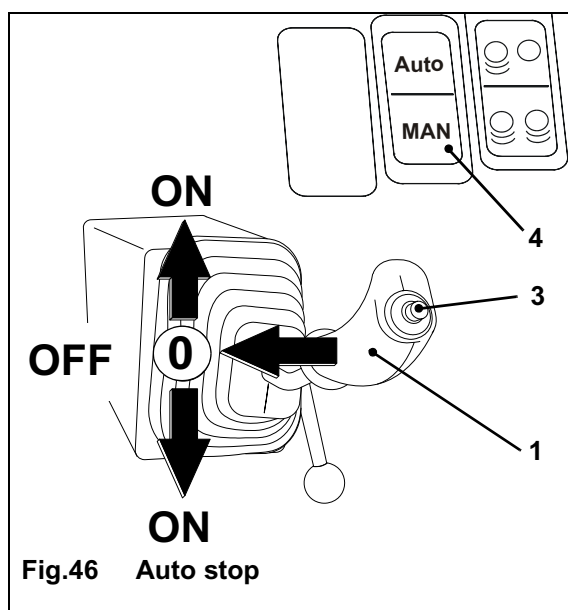
##### Material damage!

Never activate the vibration on solid grounds such as concrete or cold asphalt!



- 1 Control lever (1) for roller operation forward/backward or for adjusting the speed of the vehicle.
- 2 Diesel engine speed gearshift lever (2) for setting the Diesel engine speed and the desired vibration frequency.
  - lever (2) set to position **B**:
    - low Diesel engine speed and low frequency for operation with vibration,
  - lever (2) set to position **C**:
    - high Diesel engine speed and high frequency for operation with vibration.
- 3 Button (3) on the control lever to activate/deactivate vibration
- 4 Selector switch vibration mode, 3 positions:
  - **0** = Off
  - **MAN** = On
  - **Auto** = Auto stop.
- 5 Selector switch vibration drum:
  - **forward** = vibration front drum
  - **backward** = vibration front and rear drum

### 10.4.2 Auto stop function



#### NOTE

With the auto stop function turned on, the vibration is automatically activated and deactivated.

- Set the selector switch vibration mode (4) to position **Auto stop**.
- Press the red button (3) vibration on/off on the control lever (1).
- The vibration is **activated** by moving the control lever (1) into the desired direction of motion.
- The vibration is **deactivated** by moving the control lever (1) into the neutral position **0**.



#### NOTE

Any movement of the control lever beyond **0** leads to a **deactivation** of the vibration. Moving it into the desired direction of motion again re-activates the vibration.

### 10.4.3 Roller vibration without auto stop

#### Operation without auto stop: low or high vibration frequency

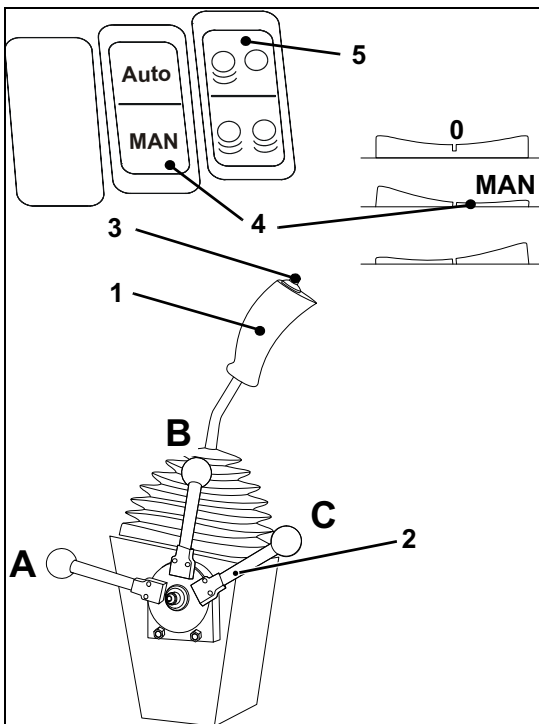


Fig.47 without auto stop

- Set the vibration mode selector switch (4) to **MAN On**.
- Selector switch vibration drum (5)
  - **forward** = Vibration front drum only
  - **backward** = Vibration front and rear drum
- Engine speed gearshift lever (2): set the Diesel engine speed and the desired vibration frequency
  - lever (2) set to position **B**:
    - low Diesel engine speed and low frequency
  - lever (2) set to position **C**:
    - high Diesel engine speed and high frequency

#### Implications:

- Vibration mode without auto stop.
- Vibration low / high frequency, depending on the position of the lever
- Vibration at the front drum only or
- Vibration at the front and rear drum.



#### NOTE

The vibration mode and the frequency have been set.  
The vibration is not activated before the button (3) on the control lever (1) is pushed.

### 10.4.4 Roller vibration with auto stop

#### Operation with auto stop: low or high vibration frequency

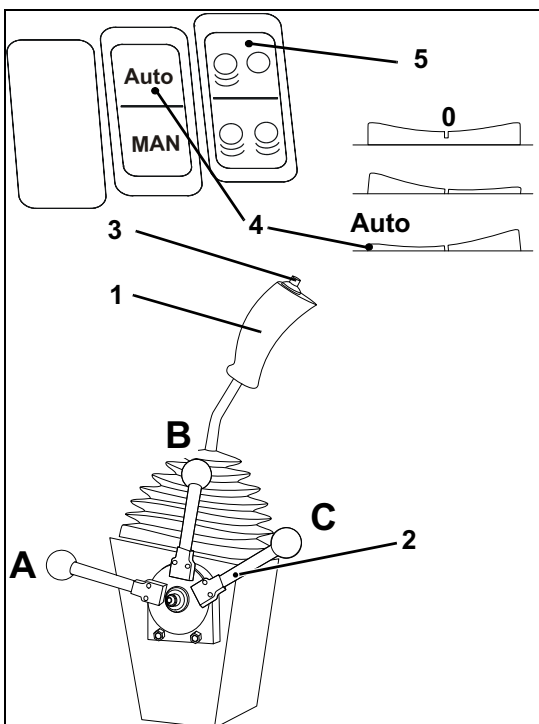


Fig.48 with auto stop

- Set the vibration mode selector switch (4) to **Auto stop**.
- Selector switch vibration drum (5).
  - **forward** = Vibration front drum only
  - **backward** = Vibration front and rear drum
- Engine speed gearshift lever (2): set the Diesel engine speed and the desired vibration frequency
  - lever (2) set to position **B**:
    - low Diesel engine speed and low frequency
  - lever (2) set to position **C**:
    - high Diesel engine speed and high frequency

#### Implications:

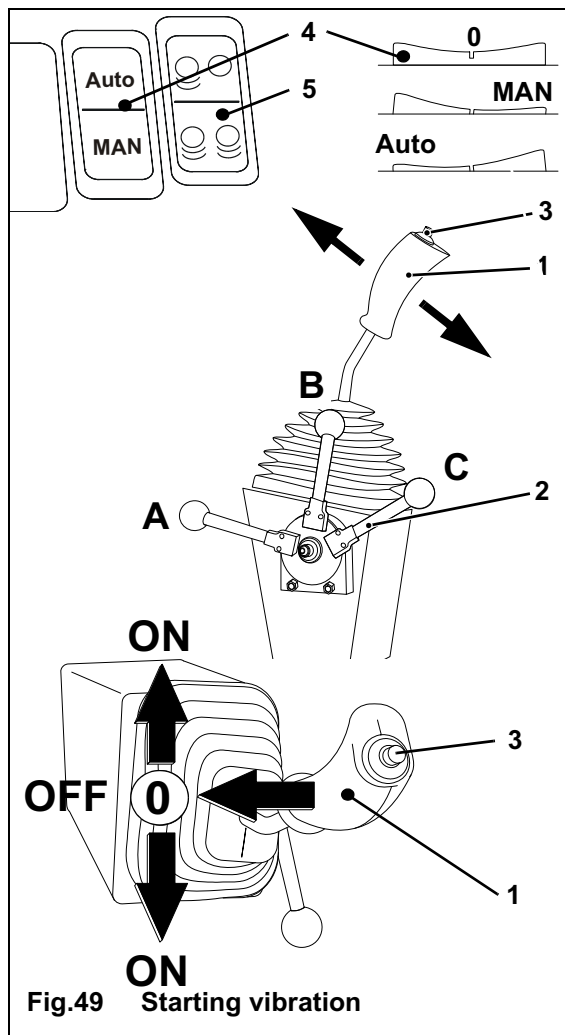
- Vibration mode with auto stop.
- Vibration low / high frequency, depending on the position of the lever
- Vibration at the front drum only or
- Vibration at the front and rear drum.



#### NOTE

The vibration mode and the frequency have been set.  
The vibration is not activated before the button (3) on the control lever (1) is pushed.

### 10.4.5 Starting vibration



- Use the vibration drum selector switch (5) to select the drum position.
- Set the vibration mode selector switch (4) to **MAN On** or to **Auto stop**.
- Move the frequency gearshift lever (2) from position **A** to the position for the required vibration frequency:
  - lever (2) set to position **B**:
    - low Diesel engine speed and low frequency,
  - lever (2) set to position **C**:
    - high Diesel engine speed and high frequency.
- Start the vibration by pushing the **red button vibration on/off** (3) on the control lever (1).
- Pull the control lever (1) towards you and move it into the desired direction of motion (forward/backward).
- In order to deactivate the vibration, press the **red button vibration on/off** (3) on the control lever (1).



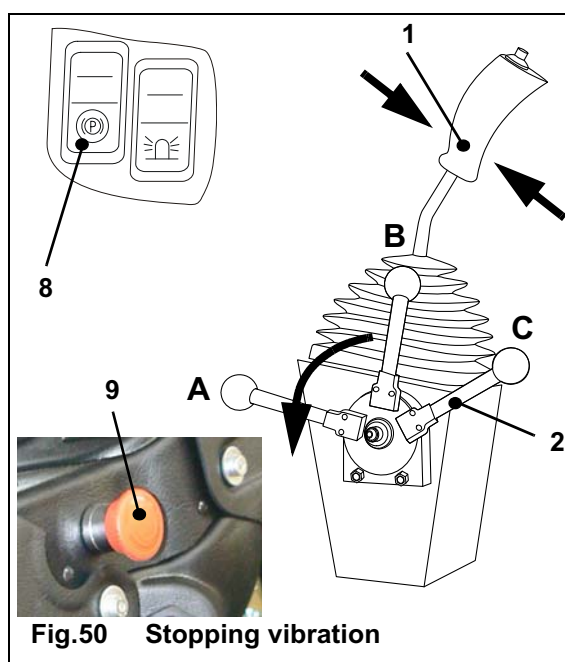
#### **WARNING!**

##### **Material damage!**

As soon as the tandem roller stops, immediately deactivate the vibration. If the vehicle is stopped but the vibration remains activated, it will cause dents in the ground.

Never activate the vibration on solid grounds such as concrete or cold asphalt!

### 10.4.6 Stopping roller operation



Stop the operation of the roller by means of the control lever or the emergency stop push-button (9).

- Move the control lever (1) back into the neutral position **0**. The tandem roller stops.
- Activate the parking brake by means of the switch (8). The light in the switch is activated.
- Move the lever (2) from position **B** or **C** to position **A** (Diesel engine idle speed).



#### **DANGER!**

In the event of an emergency which calls for an immediate stop of the tandem roller, push the **emergency stop push-button** (9).



## 11 FAILURES AND TROUBLE SHOOTING





### 11.1 Detecting faults and failures






#### NOTE

In case faults or failures occur which you cannot detect or repair yourself, immediately contact the service staff.

### 11.2 Faults and failures during operation

Fault/ Failure	Possible causes	Trouble shooting
<b>Diesel engine does not start</b> 	Environmental temperature too low.	Preheat sufficiently, repeat the starting procedure.
	The fuel tank is empty.	Add Diesel. Have the fuel system ventilated by the service staff, if required. See sections on maintenance.
	The fuel filter is plugged.	Clean or replace the fuel filter.
	Cold weather causes paraffine to leak.	Add fuel (winter Diesel) with the necessary specifications for use in cold weather.
	Leaking fuel pipes or connections.	<b>Immediate action is required to prevent fuel from penetrating the ground!</b> Contact the service staff.
	After activating the ignition, the control lamp for the battery does not light up.	Check the charge condition of the battery; if necessary, charge the battery or carry out a jump start.  <div>  <b>NOTE</b>            The tandem roller disposes of an electrical system with an <b>operating voltage of 12 V</b>. Be sure to take this into account when jump-starting the vehicle!         </div>
<b>After starting the engine, the battery charge lamp does not go out.</b> 	The starter does not turn.	Contact the service staff.
	Defective contact in the electrical system.	Cable connections or plug-in connections are loose or defective. Contact the service staff.
	The engine speed of the generator is too low.	Insufficient V-belt tension; tension the V-belts, if required. See Maintenance instructions for the service staff.
	The generator is defective or a V-belt torn.	Replace the V-belt. See Maintenance instructions for the service staff.
<b>After starting the Diesel engine, the compaction roller does not move.</b> 	The generator is activated but the battery is not charged.	Contact the service staff or the HYUNDAI dealer.
	The parking brake is applied.	Release the parking brake by means of the corresponding switch.
	The direction of motion has been set (joystick), but the tandem roller does not move.	Contact the service staff or the HYUNDAI dealer.
	Drum drive not activated.	Contact the service staff or the HYUNDAI dealer.

Fault/ Failure	Possible causes	Trouble shooting
<b>The warning lamp for the air filter lights up.</b> 	The air filter cartridge is dirty.	Clean the air filter and the air filter cartridge. For operation with a high formation of dust, insert a new filter cartridge and be sure to store a sufficient amount of filter cartridges.
<b>The warning lamp for the engine oil pressure lights up.</b> 	The oil pressure in the Diesel engine is insufficient or does not build up after starting the engine.	<div style="background-color: yellow; padding: 10px;">  <p><b>WARNING!</b>  <b>Immediately stop the Diesel engine!</b>  Check the fill level of the engine oil. In case it is insufficient, add engine oil according to the specifications in this manual.  If the engine oil level turns out to be correct, <b>stop the tandem roller and do not start it again.</b>  Immediately contact the HYUNDAI service team.</p> </div>



## 12 MAINTENANCE INSTRUCTIONS

### 12.1 Safety instructions referring to maintenance work



#### WARNING!

Be sure to take all safety precautions and to observe all instructions regarding the operation of the tandem roller when carrying out maintenance work!

Read the safety instructions and warnings in this operating manual before starting any maintenance work and follow them!



#### WARNING!

Use signs and warning notices to point out that maintenance work is being carried out.



#### WARNING!

Prevent the tandem roller from unintentionally starting by removing the ignition key from the ignition lock.

#### 12.1.1 Safety precautions to be taken prior to maintenance work

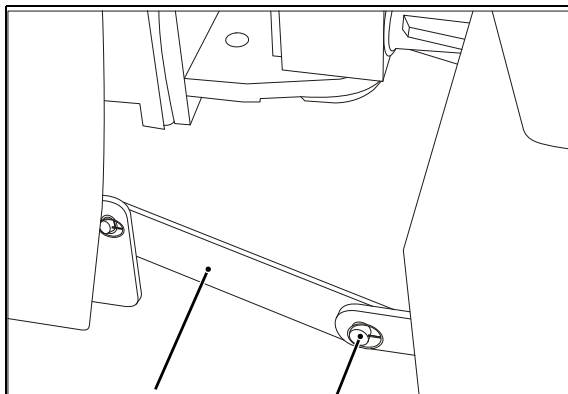


Fig.51 Installing the anti-buckling device

- Secure the tandem roller before starting work.
- Stop the Diesel engine and secure it against unintentional activation by pulling out the ignition key.
- Apply the parking brake.
- Secure the drums by means of wheel chocks.
- In case the maintenance work needs to be carried out in the work zone, be sure to create a safe working environment.
- Ensure the compaction roller's stability.
- Protect the work area against moisture and dirt.
- Check whether the hydraulic system is depressurized.
- For work at the front end or the steering system, always insert and fasten the anti-buckling device (1) between the front and the rear end (2).
- 

#### 12.1.2 After completing the maintenance work

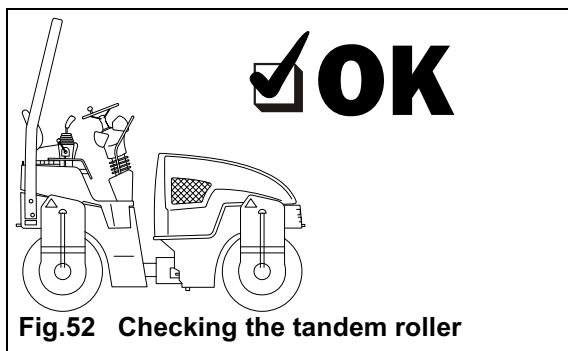


Fig.52 Checking the tandem roller

- Ascertain that the tandem roller is in a safe operating condition
- Check the hydraulic system of the tandem roller for leaks after starting it.
- Test the roller functions.
- Do not resume your work with the tandem roller before thoroughly checking the vehicle.

## 12.2 Overview: Maintenance

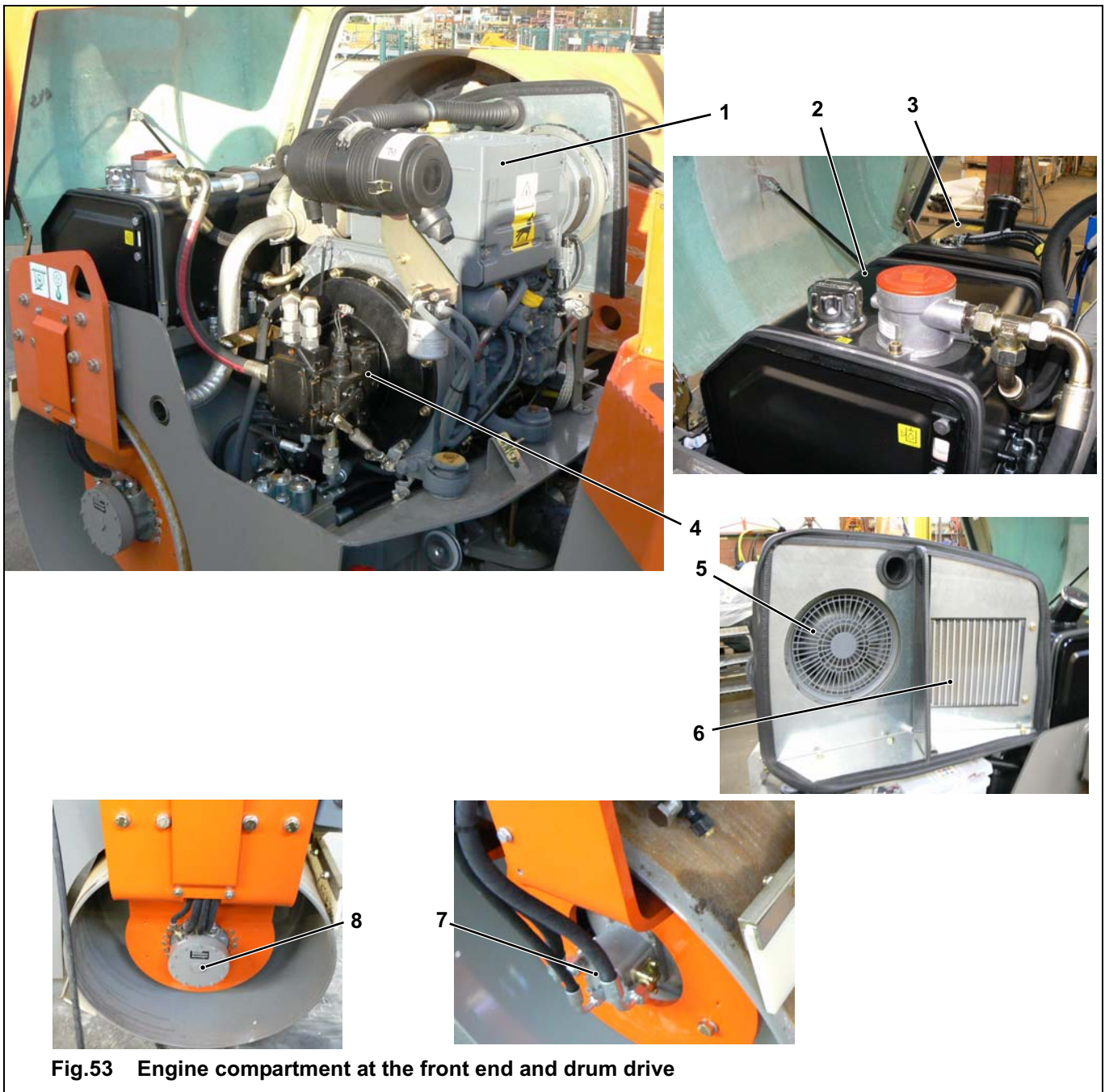


Fig.53 Engine compartment at the front end and drum drive

### Captions maintenance

- |                           |                                |
|---------------------------|--------------------------------|
| 1 Diesel engine           | 5 Cooling system Diesel engine |
| 2 Hydraulic oil tank      | 6 Hydraulic oil cooler         |
| 3 Fuel tank               | 7 Vibration drive              |
| 4 Hydraulic pump assembly | 8 Drum drive                   |

## 12.3 Maintenance instructions for the driver

### 12.3.1 Required maintenance measures



#### NOTE

Before taking any maintenance measures at the tandem roller, be sure to consult the chapters on safety instructions and safety precautions for maintenance work.



#### WARNING!

If you do not have the skills and knowledge required to perform the maintenance work, have it carried out by qualified service staff.

**Never neglect the required maintenance work!**

### 12.3.2 Table of lubricants

Greasing point	Lubricant	Viscosity	Equivalent standard
<b>Diesel engine</b>	API classification	SAE 10 W	
Arctic climate	CG 4/CH 4	SAE 20 W - 20	
Temperate climate		SAE 30	
Tropical climate		SAE 40	
All climes		SAE 15 W - 40	New machine
<b>Hydraulic oil</b>	ATRAS Spezial 46	ISO VG 32 ISO VG 46 ISO VG 68	New machine Pay particular attention to the specifications referring to operation with temperatures below 0° C. Be sure to preheat the hydraulic oil sufficiently.

### 12.3.3 Daily checks before starting operation (Maintenance certificate A)



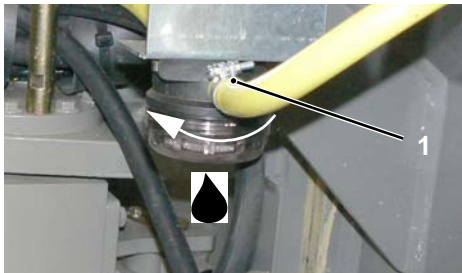
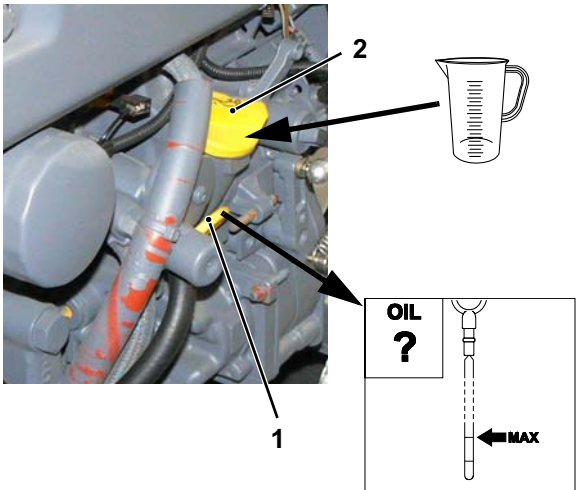
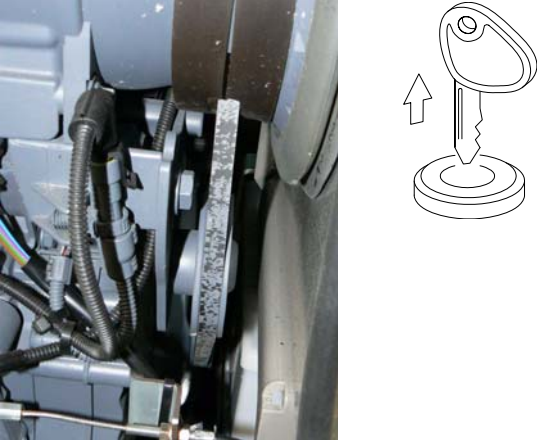
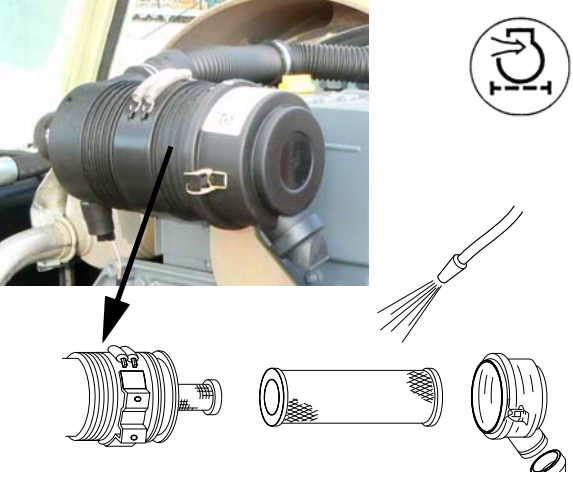

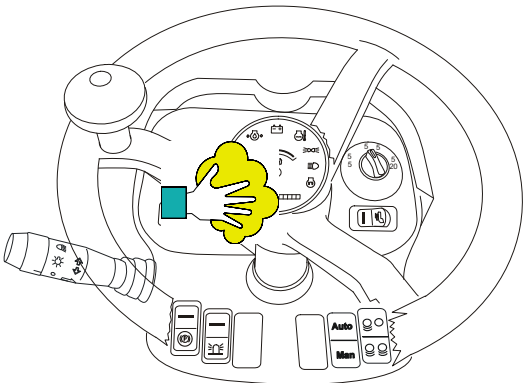
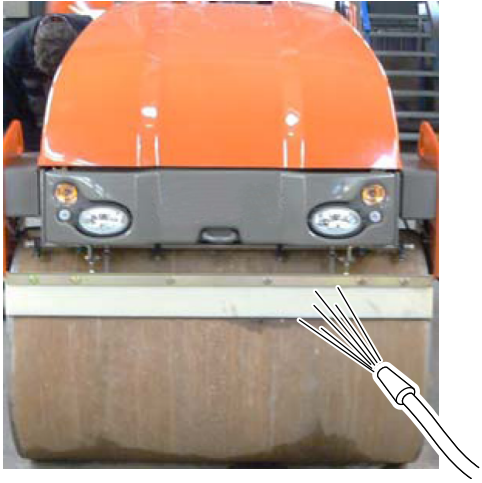
Illustration	Daily work
	<ul style="list-style-type: none"> <li>Conduct a visual inspection to check the exterior of the tandem roller. Clean it, if necessary.             <ul style="list-style-type: none"> <li>Check the hydraulic components and the hoses for leakage.</li> <li>Check the distance of the scrapers to the drum.</li> <li>Check the scrapers for damage.</li> <li>Remove coarse dirt from the roller drum and the scrapers.</li> <li>Check the vehicle for damage.</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>Check the fuel level.</li> <li>Before starting work, check the fuel level and add Diesel, if required.</li> </ul>
	<ul style="list-style-type: none"> <li>Clean the water filter (1) before using the sprinkler system.</li> <li>Unscrew the filter cartridge and rinse it.</li> </ul>
	<ul style="list-style-type: none"> <li>Check the oil level of the Diesel engine at the oil dipstick (1).</li> <li>Add engine oil via the filler neck, if required.</li> <li>Unscrew the cap (2) of the filler neck and carefully fill in engine oil.</li> </ul> <div data-bbox="727 1429 1481 1653" style="background-color: yellow;"> <p><b>i</b> <b>NOTE</b></p> <ul style="list-style-type: none"> <li>Pay attention to the information on the engine oil to be used in the engine compartment.</li> <li>If no information is displayed in the engine compartment, consult the table of lubricants for the required specifications.</li> </ul> </div> <div data-bbox="727 1659 1481 1753" style="background-color: yellow;"> <p><b>!</b> <b>CAUTION!</b></p> <p>Never mix different types of oil!</p> </div> <ul style="list-style-type: none"> <li>Attach the cap (2) correctly after adding oil.</li> </ul>



Illustration	Daily work
	<ul style="list-style-type: none"> <li>Check the V-belt tension and the V-belt for damage.</li> </ul> <p><b>WARNING!</b></p> <ul style="list-style-type: none"> <li>The V-belt tension may only be checked with the Diesel engine stopped!</li> <li>Stop the Diesel engine. Pull out the ignition key.</li> </ul> <p><b>NOTE</b></p> <p>For information on tensioning and replacing the V-belt, please refer to the Deutz 2012 Diesel engine operating manual.</p>
	<p><b>NOTE</b></p> <p>If the display indicating the accumulation of dirt at the air filter for the combustion air of the Diesel engine lights up on the dashboard, clean or replace the air filter. After a maximum of five cleanings by means of compressed air, replace the filter cartridge. Wash the interior of the air filter housing and clean it; if required, vacuum it.</p> <p><b>CAUTION!</b></p> <p><i>Damage to the engine!</i></p> <ul style="list-style-type: none"> <li>Never attempt to clean the air filter housing by blowing air into it!</li> </ul>
	<p><b>NOTE</b></p> <p>In order to check the hydraulic oil level, the tandem roller needs to be parked on level ground.</p> <ul style="list-style-type: none"> <li>Check the oil level at the inspection glass; it should reach the upper third.</li> <li>If required, add hydraulic oil via the hydraulic oil filter.</li> </ul> <p><b>CAUTION!</b></p> <p><i>Be sure to exercise extreme cleanliness when filling in hydraulic oil!</i></p> <p>Inform yourself of the type of hydraulic oil in the hydraulic system. Please refer to the table of lubricants for the required specifications</p> <p><b>CAUTION!</b></p> <p><i>Damage to the hydraulic system!</i></p> <p>Never mix different types of oil!</p>

### 12.3.4 Daily work after operating the tandem roller

Illustration	Daily work
	<ul style="list-style-type: none"> <li>• Clean the dashboard and the driver's compartment.</li> </ul>
	<ul style="list-style-type: none"> <li>• After parking the tandem roller, clean the exterior of the vehicle. If necessary, use a high-pressure washer.</li> </ul> <div data-bbox="730 772 1476 952"> <p><b>CAUTION!</b></p> <p>Make sure the high-pressure washer is not directed at:</p> <ul style="list-style-type: none"> <li>• the driver's compartment,</li> <li>• ventilation grills and slots.</li> </ul> </div> <ul style="list-style-type: none"> <li>• Clean the scrapers of the roller drum before the dirt can harden.</li> </ul>

## 12.4 Maintenance instructions for the service staff

### 12.4.1 Required maintenance work referring to the Diesel engine, the hydraulic system and the electrical system



#### NOTE

Consult the chapter Maintenance instructions for the service staff for a description of the required work.

### 12.4.2 Work to be carried out at intervals of 500 operating hours (Maintenance certificate C)



#### NOTE

These maintenance measures need to be taken in a workshop. They may be carried out by the trained service staff of an authorized HYUNDAI dealer only.

## 13 MAINTENANCE INSTRUCTIONS FOR THE SERVICE STAFF

### 13.1 Required maintenance measures



#### NOTE

Before taking any maintenance measures at the tandem roller, be sure to consult the chapters on safety instructions and safety precautions for maintenance work.



#### WARNING!

If you do not have the skills and knowledge required to perform the maintenance work, have it carried out by qualified service staff.



#### DANGER!

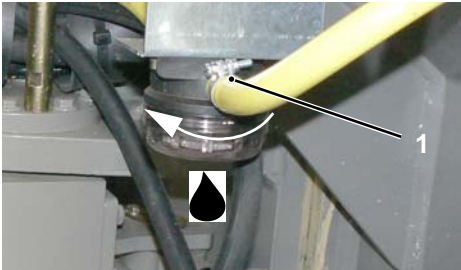
##### *Risk of burns!*

If you need to perform any work related to the Diesel engine or the engine compartment, make sure all components have cooled down before you start.

#### 13.1.1 Lubricants for maintenance work

See table of lubricants (Chapter Maintenance instructions for the driver).

#### 13.1.2 Maintenance work related to the sprinkler system

Illustration	Before putting the sprinkler system into operation
	<ul style="list-style-type: none"> <li>Prior to activating the sprinkler system, clean the water filter (1).</li> </ul> <div data-bbox="742 1317 820 1397" data-label="Image"> </div> <div data-bbox="871 1303 981 1339" data-label="Section-Header"> <h4>NOTE</h4> </div> <div data-bbox="871 1346 1468 1473" data-label="Text"> <p>Prior to screwing on the water filter (1), the water tank must be emptied. In order to empty the water tank, e.g. due to a risk of frost, open the water filter and drain the water.</p> </div> <ul style="list-style-type: none"> <li>Remove the filter cartridge and rinse it.</li> <li>If the water filter repeatedly shows an increased accumulation of dirt, rinse the sprinkler system.</li> <li>Attach the water filter (1) again.</li> </ul>

### 13.1.3 Maintenance work referring to the Diesel engine



#### NOTE

Before taking any maintenance measures related to the Diesel engine, read and observe the instructions in the Deutz Diesel engine operating manual.

#### Maintenance intervals: Diesel engine

- The first inspection of the tandem roller needs to be carried out after the initial 50 operating hours.
- For information on the subsequent intervals, refer to the table of maintenance intervals.
- As for maintenance work and default intervals related to the Diesel engine, please consult the Deutz operating manual.

#### Fuel system

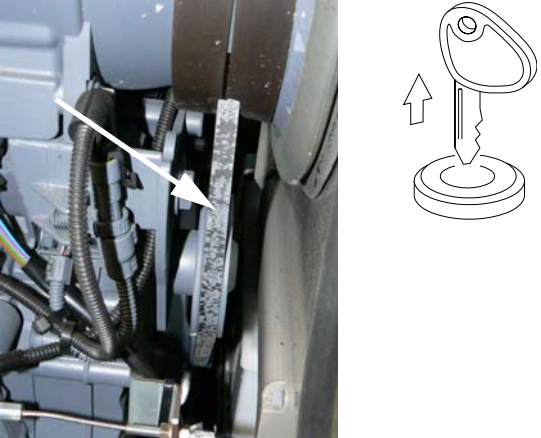
Illustration	Maintenance work and intervals
	<p><b>After the initial 50 operating hours and subsequently, at intervals of 500 operating hours</b></p> <ul style="list-style-type: none"> <li>• Replace the preliminary fuel filter (1).</li> <li>• Use a tensioning belt to open the filter cartridge.</li> <li>• Immediately remove any leaking fuel.</li> <li>• EU waste disposal key for the filter cartridge: 150299 (EU).</li> <li>• Attach the new filter cartridge (1) to the filter console by manually screwing it on.</li> <li>• Start the Diesel engine.</li> <li>• Ventilate the fuel system, if required (see Deutz operating manual).</li> </ul>

#### Cooling system

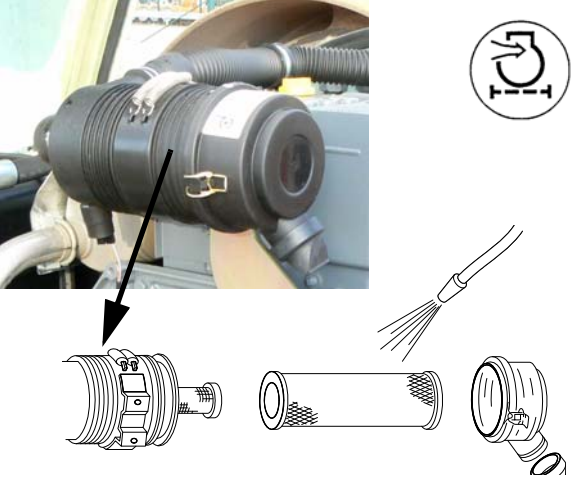
Illustration	Maintenance work and intervals
	<ul style="list-style-type: none"> <li>• For instructions related to cleaning the cooling system of the Diesel engine, see Deutz operating manual.</li> <li>• Make sure that the grill for the cooling air intake is not dirty. Clean it, if necessary.</li> </ul>



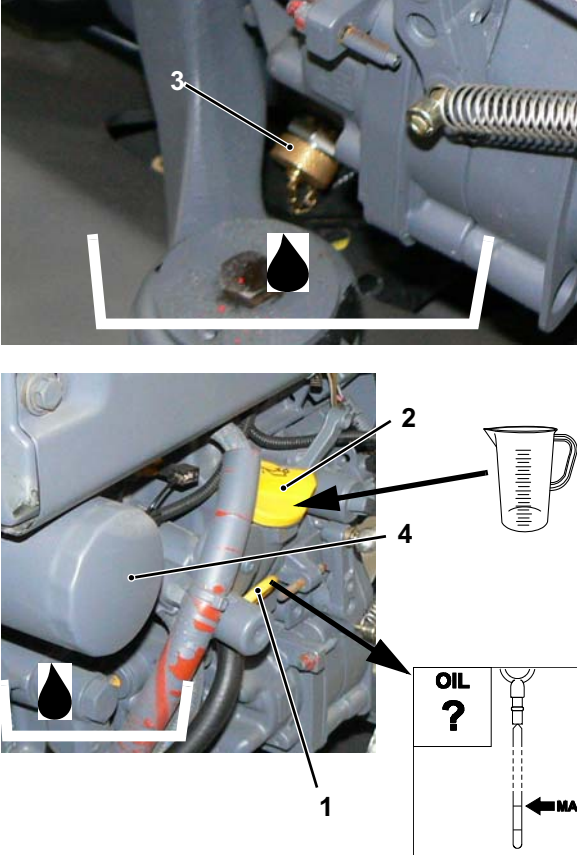
## Checking the V-belt

Illustration	Maintenance work and intervals
	<ul style="list-style-type: none"> <li>Check the V-belt tension and watch out for damage.</li> </ul> <p><b>WARNING!</b></p> <ul style="list-style-type: none"> <li>Never check the V-belt tension with the Diesel engine running!</li> <li>Turn off the Diesel engine and pull out the ignition key.</li> </ul> <p><b>NOTE</b></p> <p>Refer to the Deutz operating manual for instructions on tensioning and replacing the V-belt.</p>

## Replacing the combustion air filter

Illustration	Maintenance work and intervals
	<p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>If the respective lamp on the dashboard indicates an accumulation of dirt at the air filter for the combustion air of the Diesel engine, clean or replace the air filter.</li> <li>After a maximum of five cleanings by means of compressed air, replace the filter cartridge.</li> <li>Wash the interior of the air filter housing and clean it; if necessary, vacuum it.</li> </ul> <p><b>CAUTION!</b></p> <p><b>Damage to the Diesel engine!</b></p> <p>Never attempt to clean the air filter by blowing air into it!</p>

## Engine oil system

Illustration	Maintenance work and intervals
	<p><b>After the initial 50 operating hours and subsequently, at intervals of 500 operating hours</b> Oil change at the Diesel engine:</p> <p><b>NOTE</b> Take the tandem roller to a workshop in order to carry out the oil change.</p> <p><b>WARNING!</b> <i>Environmental protection!</i></p> <ul style="list-style-type: none"> <li>The engine oil must not penetrate the ground, pollute water or leak into the sewer system. Collect it in sufficiently dimensioned receptacles and dispose of it in an environmentally friendly way (EU waste disposal key 130202).</li> </ul> <ul style="list-style-type: none"> <li>Start the Diesel engine and let it run until it has reached operating temperature.</li> <li>Stop the Diesel engine and pull out the ignition key.</li> </ul> <p><b>DANGER!</b> <i>Risk of burns!</i> Leaking oil, the Diesel engine and its environment are extremely hot. Be sure to wear protective clothing!</p> <ul style="list-style-type: none"> <li>Unscrew the oil drain plug (3), pull out the oil dipstick (1) and drain the hydraulic oil.</li> <li>Screw in the oil drain plug (3), fitted with a new O-ring.</li> </ul> <p><b>Replacing the oil filter:</b></p> <ul style="list-style-type: none"> <li>Place an oilpan under the oil filter (4) to collect the leaking oil.</li> <li>Unscrew the filter housing (cartridge) and dispose of it in an environmentally friendly way.</li> <li>EU waste disposal key: 150299 (EU).</li> <li>Lubricate the surface of the new cartridge.</li> <li>Sttach the new oil filter cartridge and screw it on manually.</li> </ul> <p><b>Adding oil:</b></p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>For information on the required specifications of the engine oil, refer to the table of lubricants.</li> </ul> <ul style="list-style-type: none"> <li>Fill a sufficient amount of new engine oil into the Diesel engine via the filler neck (2).</li> <li>After adding oil, attach the closing cap and start the Diesel engine.</li> <li>Check the fill level at the oil dipstick (1). Add oil, if necessary.</li> <li>Start the Diesel engine and let it idle until it has warmed up.</li> </ul>

### 13.1.4 Maintenance work referring to the hydraulic system



#### NOTE

Before carrying out any maintenance work related to the hydraulic system, be sure to consult the table of lubricants for information on the specifications of the required hydraulic oils.

### Replacing the hydraulic oil and the oil filter

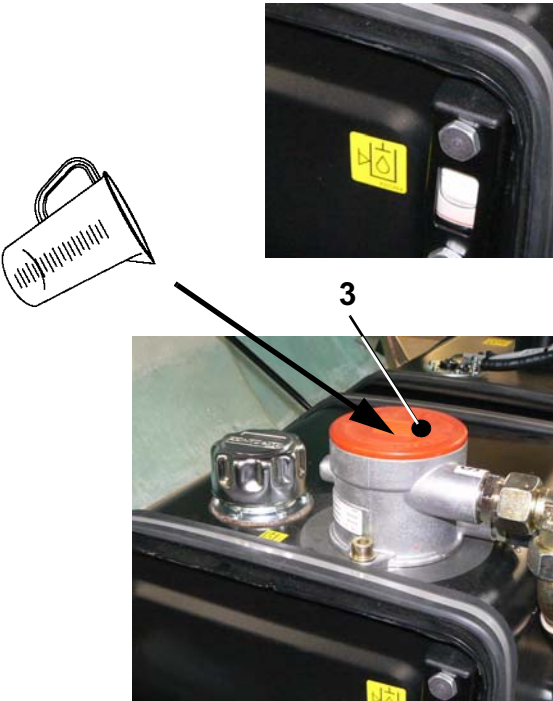
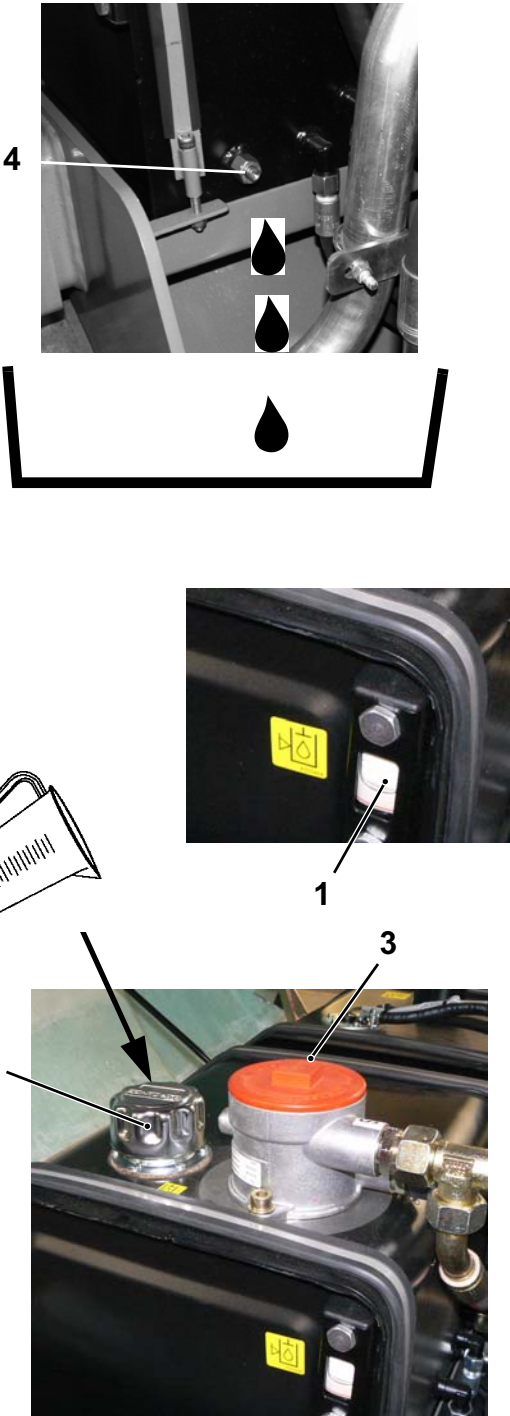
Illustration	Maintenance work and intervals
	<p><b>Replace the hydraulic oil filter after the initial 50 operating hours and, subsequently, at intervals of 500 operating hours.</b></p> <p><b>NOTE</b> Before replacing the oil filter (3), place a sufficiently dimensioned oil receptacle under the hydraulic tank.</p> <ul style="list-style-type: none"> <li>• Unscrew the closing cap of the oil filter (3).</li> <li>• Take out the oil filter cartridge and dispose of it in an environmentally friendly way.</li> <li>• EU waste disposal key: 150299 (EU).</li> <li>• Insert a new filter cartridge and attach the cap.</li> <li>• If necessary, add hydraulic oil via the hydraulic oil filter.</li> </ul> <p><b>CAUTION!</b> <i>Be sure to exercise extreme cleanliness when filling in hydraulic oil!</i> Inform yourself of the type of hydraulic oil in the hydraulic system. Please refer to the table of lubricants for the required specifications.</p> <p><b>CAUTION!</b> <i>Damage to the hydraulic system!</i> Never mix different types of hydraulic oil!</p>

Illustration	Maintenance work and intervals
	<p><b>Replacing the hydraulic oil or changing the type of oil is required at intervals of 2000 operating hours</b></p> <p><b>i NOTE</b> Take the tandem roller to a workshop in order to carry out the oil change.</p> <p><b>! WARNING!</b> <b>Environmental protection!</b></p> <ul style="list-style-type: none"> <li>The engine oil must not penetrate the ground, pollute water or leak into the sewer system. Collect it in sufficiently dimensioned receptacles and dispose of it in an environmentally friendly way. EU waste disposal key: 130202.</li> </ul> <ul style="list-style-type: none"> <li>Start the Diesel engine and let it run until the hydraulic oil has warmed up.</li> <li>Stop the Diesel engine and pull out the ignition key.</li> <li>Place an oil receptacle under the hydraulic tank.</li> </ul> <p><b>i NOTE</b> Take the amount of hydraulic oil to be drained into account and be sure to choose a sufficiently dimensioned oil receptacle.</p> <ul style="list-style-type: none"> <li>Unscrew the ventilation filter (2).</li> <li>Unscrew the oil drain plug.</li> <li>Dispose of the waste oil in an environmentally friendly way.</li> <li>EU waste disposal key: 130202 (EU).</li> <li>Replace the oil filter cartridge (3), see previous instructions.</li> <li>Screw in an oil drain plug with a new O-ring.</li> <li>Add hydraulic oil.</li> </ul> <p><b>! CAUTION!</b> <b>Be sure to exercise extreme cleanliness when filling in hydraulic oil!</b> Inform yourself of the required type of oil by referring to the specifications in the table of lubricants.</p> <ul style="list-style-type: none"> <li>Fill in hydraulic oil via the hydraulic oil filter.</li> <li>Start the Diesel engine and let it run until the hydraulic oil has warmed up.</li> <li>Stop the Diesel engine and pull out the ignition key.</li> <li>Check the fill level (1) at the inspection glass again. Add hydraulic oil, if necessary.</li> </ul>

## 13.2 Maintenance work referring to the electrical system

### 13.2.1 Maintenance work related to the battery



#### CAUTION!

##### *Risk of explosions!*

Keep away sparks and open fire from the battery.  
Do not smoke.

Illustration	Work to be carried out on a monthly basis
	<ul style="list-style-type: none"> <li>Check the battery poles (2) for damage and corrosion.</li> <li>Lubricate the poles and terminals.</li> <li>Open the cover caps (1) of the battery and check the fill level above the cells.</li> <li>Make sure the fill level is sufficient, i.e. above the cells.</li> </ul> <div> <b>CAUTION!</b>  Add distilled water only! </div>

### 13.2.2 Printed circuit board, fuses and relays

Illustration	Work to be carried out on a monthly basis
	<ul style="list-style-type: none"> <li>The printed circuit board is integrated in the left side of the bottom part of the steering column.</li> <li>Check the printed circuit board, the fuses and the relays on the printed circuit board.</li> <li>Check the fuses and relays for the accumulation of dirt and damage.</li> <li>Always replace defective fuses, see chapter Maintenance instructions for the service staff.</li> </ul>

### 13.2.3 Allocation of the fuses on the printed circuit board

No.	Ampere	Function	No.	Ampere	Function
F1	30 A	Ignition lock	F9	15 A	Fan hydraulic oil cooler
F2	10 A	Terminal 30, drop-arm switches	F10		-
F3	10 A	Drop-arm switches, turn signals	F11	15 A	Rear headlights and back-up alarm
F4	15 A	Parking brake	F12	15 A	Low beam lights (optional StVZO/MOT approval equipment)
F5	7.5 A	Water pump sprinkler system	F13	15 A	Horn
F6	15 A	Rotating light	F14		-
F7	7.5 A	Edge cutter (optional feature)	F15	7.5 A	Parking light L, front & rear (optional StVZO/MOT approval equipment)
F8	7.5 A	Control lever	F16	7.5 A	Parking light R, front & rear (optional StVZO/MOT approval equipment)



## 14 MAINTENANCE INSTRUCTIONS REFERRING TO THE INITIAL OPERATION

### 14.1 Delivery receipt of the HYUNDAI tandem rollers



#### NOTE

Make sure all checks and maintenance measures required for the initial operation are carried out in the presence of the customer or his/her staff. Obtain a written confirmation.

- Ascertain the completeness of the delivery (including all accessories and the tandem roller documentation).
- Make a note of any damage found.
- Refer to the chapter Note of delivery and verification of inspections for information on the default maintenance intervals (maintenance certificates).

#### 14.1.1 Testing the operating state of the tandem roller



#### NOTE

Carry out the maintenance work described below in the presence of the operating staff (i.e. the driver of the tandem roller) and the service staff of the customer. Refer to the corresponding sections on this operating and maintenance manual.

##### Checking the fill levels

- Check whether the following fill levels correspond to the required levels as stated in the maintenance manual:
  - Engine oil level,
  - Hydraulic oil level.

##### Screw connections

- Perform a visual inspection to check all screw connections.

##### Hydraulic system

- Check the hydraulic hoses and screw connections for leaks.

### 14.1.2 Instruction and demonstration at the machine

**NOTE**

Perform the instruction in the presence of the operating staff (i.e. the driver) and the service staff of the customer. Make sure that your instruction is understood and that the individuals in question will read and comprehend the operating and maintenance manual.

**Vehicle documents and operating manual**

- Hand out the documents related to the tandem roller and point out their relevance.
- Explain the structure and the contents of the operating and maintenance manual.
- Be sure to refer to the safety instructions and stress the importance of observing them.
- Explain the operation and the functions of the tandem roller, based on the instructions in this manual.

**NOTE**

Bear in mind that, after your initial instruction and demonstration, the operating and maintenance manual will be the only resource for obtaining information on the operation of the vehicle.

**Operating elements and displays in the cabin**

- When giving the operating staff instructions related to the driver's compartment, adhere to the sequence provided by the operating and maintenance manual.
  - Begin by explaining the adjustment of the driver's seat.
  - Explain the functions of the switches, the buttons and the symbols of the dashboard and the steering column.
  - Point out the connections between certain functions, e.g. the parking brake and engine start.
  - Explain the joystick control.
  - Point to the specifications of the required hydraulic - , gear - and engine oil types.

**Working with the tandem roller**

- Soil compaction options.
- Vibration modes.
- Driving on slopes.

**Driving the tandem roller**

- Transporting the tandem roller.
- Refer to the corresponding instructions in the operating and maintenance manual when explaining the towing process.

**Maintenance work**

- Provide information on maintenance measures and intervals. Point out that the use of supplies and substances other than the ones approved by the manufacturer inevitably leads to the expiry of the warranty.

### 14.1.3 Check list: First inspection after the initial 50 operating hours

**NOTE**

See chapter Note of delivery and verification of inspections for the corresponding form.

#### Diesel engine

**NOTE**

In addition to the measures stated here, refer to the operating manual of the Diesel engine manufacturer and observe the instructions.

#### Checking the fill levels

- Check the engine oil level.
- Check the hydraulic oil level.
- Check the oil level in the drum drive.
- Check the oil level in the vibration drive.

#### Screw connections

- Check the screw connections of the engine mounting at the Diesel engine.

**NOTE**

For the required tightening torques, refer to the instructions provided by the Diesel engine manufacturer.

- Tighten the screw connections at the articulated pendulum joint.
- Tighten all other screw connections.

#### Hydraulic system

- Replace the filter cartridge at the hydraulic oil tank.
- Check the ventilation filter of the hydraulic tank.
- Check the hydraulic hoses and screw connections for leaks.

#### Diesel engine

- Replace the air filter cartridge of the Diesel engine; clean the air filter housing.
- Tighten the fastening screws of the exhaust system.
- Follow the instructions in the operating and maintenance manual of the Diesel engine manufacturer in order to carry out any maintenance work related to the Diesel engine!



## 15 APPENDIX

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