The CC 211/COMBI is a member of the CC 211 family of vibration rollers and is an articulated seven tonne tandem roller, with drum and all-wheel drive and with vibration action on the front drum.

The CC 211/COMBI is a vibration roller specially produced for operation together with modern road-metal spreading machines, and for compaction of base and wear courses. It is also well suited for the compaction of various asphalt compounds.

CC211/COMBI is the basic version described in these instructions. Separate information is available on request concerning accessories or additional equipment.

OPERATION

CC211C
COMBINATION ROLLER
O-242-2EN, 9412

Diesel Engine:
Deutz F4L912

These instructions apply from
PIN (S/N) *61520211*

DYNAPAC
DYNAPAC HEAVY EQUIPMENT AB
Box 504 • S-371 23 KARLSKRONA • Sweden
Tel. +46 455 627 00 • Telex 43041 dynkar s
Telescopier +46 455 627 30
CONTENTS

Safety Instructions .............................................................. 3
Safety decals, Location/Description ..................................... 4, 5
Machine and engine plates .................................................... 6
Instruments and Controls ..................................................... 7
Instruments and Controls, Functional Description ..................... 8-11
Before Starting ................................................................. 12-14
Starting ............................................................................. 15
Driving .............................................................................. 16
Driving/Vibrating ................................................................. 17
Safety when driving ............................................................. 19
Braking .............................................................................. 19
Emergency Braking ............................................................... 19
Stopping ............................................................................ 19
Parking .............................................................................. 20
Hoisting ............................................................................. 21
Driving After Hoisting .......................................................... 21
Towing .............................................................................. 22-23
Transportation ..................................................................... 24
Electrical System/Fuses ......................................................... 25
Operating Instructions - Summary ......................................... 26

WARNING SYMBOLS

⚠️ Safety instructions - Personal safety

❗ Special caution - Machine or component damage

SAFETY MANUAL

⚠️ The safety manual that accompanies the machine should be studied by every operator of the roller. Always follow the safety instructions and do not take the manual away from the roller.

GENERAL

This manual contains instructions concerning operation and use of the roller. For information regarding care and maintenance, see the manual, "MAINTENANCE CC 211C".

⚠️ When starting up and driving a cold machine, which implies cold hydraulic fluid, the braking distance will be longer than normal until the machine reaches normal working temperature.
SAFETY INSTRUCTIONS (Read the Safety Manual also)

1. Read and clearly understand OPERATING MANUAL before starting and operating the machine.

2. Observe and follow all maintenance and service instructions.

3. Do not operate machine unless qualified by training or experience. Do not allow passengers on the roller.

4. Do not operate machine if in need of repair or adjustment.

5. Do not get on or off moving machine. Always use proper steps and hand rails.

6. Roll Over Protective Structures (ROPS) is recommended when stability conditions are questionable. Always use seat belt with ROPS.

7. Drive slowly when turning corners.

8. Avoid sidehill travel. Operate up and down the slope.

9. Ensure that at least two thirds of the drum width rests on already compacted ground when driving close to edges or holes.

10. Be alert to overhead obstacles. Look up as well as down.

11. Use special caution when operating on rough or uneven ground. Always maintain a speed consistent with working conditions.

12. Obey all safety rules and use safety equipment provided for the job.


14. Exercise caution when refueling machine:
   - Shut down engine.
   - No smoking allowed.
   - Use no open flames.
   - Ground filler nozzle against tank neck to avoid a spark.

15. Block drums and/or tires and apply steering lock before servicing or repairing machine.

16. If noise levels on machine without cabs are over 85 db(A):
   - Ear protection is recommended.

17. Do not modify the machine in any way which will affect safety. Any modification on this machine requires prior written approval from Dynapac.

18. Do not operate machine until hydraulic oil has reached operating temperature. Braking distance can be extended when oil is cold. See starting instruction in OPERATING MANUAL.
**SAFETY DECALS, LOCATION/DESCRIPTION**

**WARNING**

- **Warning for hot surface. The surface must not be touched.**
- **Warning for rotating engine components. Keep your hands at a safe distance from the danger zone.**

**DO NOT LEAVE DRIVER'S PLATFORM WHILE THE ENGINE IS RUNNING WITHOUT DEPRESSING THE EMERGENCY STOP SWITCH**

**WARNING**

- The operator is urgently requested to read the safety manual, and the operation and maintenance instructions before using the machine.

**Lifting point**

- Crush zone, articulated steering. Maintain a safe distance from the crush zone.

**Long distance between steps.**

**Lifting point**

---

**DYNAPAC**

CC 211C  O-242-2EN
SAFETY DECALS, LOCATION/DESCRIPTION

WARNING
Crush zone, articulated steering. Maintain a safe distance from the crush zone.

WARNING
Warning for hot surface. The surface must not be touched.

WARNING
Warning for rotating engine components. Keep your hands at a safe distance from the danger zone.

Handbooks

Lifting point

Long distance between steps.

Diesel fuel

Lifting point
Machine plate

The machine type plate (1) is affixed on the front edge of the operator's platform. The plate shows the manufacturer's name and address, type of machine, PIN, i.e., part identification number, (serial number), weight in working order, engine power and year of manufacture. Please state the PIN (serial number) of the roller when ordering spares.

Serial number on the frame

The PIN of the frame (serial number) (1) is punched on the right edge of the front frame. This number is the same as the PIN (serial number) on the machine plate.

Engine plate

The engine type plate (1) is located on the crankcase below the starter motor (Deutz). The plate shows the type of engine, serial number and engine data. Please state the engine serial number when ordering spares. See also the engine manual.
1. Direction indicator
2. Working light, rear
3. Hazard beacon
4. Working light, front
5. Hazard flashers
6. Horn
7. Plugged
8. Starter button
9. Power switch
10. Brake warning lamp
11. Emergency stop
12. Oil pressure warning lamp
13. Voltmeter
14. Fuel gauge
15. Temperature gauge (hydraulics)
16. Temperature gauge (engine)
17. Dipped/main beam (switch)
18. Warning lamp (air cleaner)
19. Tachometer/Hour meter
20. Compaction meter
21. Speedometer
22. Frequency meter
23. Vibration ON/OFF
24. Forward/Reverse control
25. Speed regulator
26. Plugged
27. Vibration selector
28. Amplitude selector
29. Sequence selector (front - rear drum)
30. Sprinkler system (Man/Auto)
31. Frequency meter ON/OFF
32. Revs control
33. Seat rotation locking-lever
34. Stop control (Deutz)
35. Sprinkler system (Tyres)

* Optional equipment
<table>
<thead>
<tr>
<th>Item in fig. 4</th>
<th>Designation</th>
<th>Symbol</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Direction indicator switch (Optional)</td>
<td>🚪 🚪</td>
<td>Turn left to operate the left direction indicator. In the middle position the direction indicators are switched off.</td>
</tr>
<tr>
<td>2</td>
<td>Working light rear, switch</td>
<td>🌃💡</td>
<td>Turn right to operate the rear working light.</td>
</tr>
<tr>
<td>3</td>
<td>Hazard beacon switch (Optional)</td>
<td>⚡️</td>
<td>Turn right to operate the hazard beacon.</td>
</tr>
<tr>
<td>4</td>
<td>Working light, front, switch</td>
<td>🔗💡</td>
<td>Turn right to operate the parking and front working lights.</td>
</tr>
<tr>
<td>5</td>
<td>Hazard flashers switch (Optional)</td>
<td>🔴⚠️</td>
<td>Turn right to operate the hazard flashers.</td>
</tr>
<tr>
<td>6</td>
<td>Horn (Push button)</td>
<td>🔇ประธาน์ทะเล</td>
<td>Press to sound the horn.</td>
</tr>
<tr>
<td>7</td>
<td>Dummy plug</td>
<td></td>
<td>Optional equipment</td>
</tr>
<tr>
<td>8</td>
<td>Starter button</td>
<td>START</td>
<td>Energizes starter motor while pressed.</td>
</tr>
<tr>
<td>9</td>
<td>Main switch</td>
<td>🔑</td>
<td>Electric circuit broken in the O mode. All electric instruments and controls are powered in the I mode. DEUTZ: The electric circuit must not be switched off while the engine is running.</td>
</tr>
<tr>
<td>10</td>
<td>Brake warning lamp</td>
<td>🔖</td>
<td>Brakes are applied when the light is ON.</td>
</tr>
<tr>
<td>11</td>
<td><strong>EMERGENCY STOP</strong> (Red button)</td>
<td>⚠️ STOP</td>
<td>OFF (Pulled out) is normal setting when driving. ON (Pushed in) applies the brakes and stops the machine.</td>
</tr>
<tr>
<td>12</td>
<td>Oil pressure warning lamp</td>
<td>⚠️</td>
<td>Stop the engine immediately if warning lamp lights. Locate the cause.</td>
</tr>
<tr>
<td>13</td>
<td>Voltmeter</td>
<td>📈</td>
<td>Indicates voltage of the system. Normal range 12 to 15 V.</td>
</tr>
<tr>
<td>14</td>
<td>Fuel gauge</td>
<td>🛣️</td>
<td>Indicates content of fuel tank.</td>
</tr>
<tr>
<td>15</td>
<td>Temperature gauge, hydraulic fluid</td>
<td>🛣️</td>
<td>Indicates temperature of hydraulic fluid. Normally 65°C to 80°C. Stop the engine if gauge shows temperature above 85°C. Locate the cause.</td>
</tr>
<tr>
<td>Item in fig. 4</td>
<td>Designation</td>
<td>Symbol</td>
<td>Function</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------------------------------------</td>
<td>--------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>16</td>
<td>Temperature gauge</td>
<td></td>
<td>Indicates working temperature of engine, normally 82°C to 93°C (180°F to 200°F). See engine manual.</td>
</tr>
<tr>
<td></td>
<td>John Deere: Coolant</td>
<td></td>
<td>Indicates temperature of engine oil. See engine manual.</td>
</tr>
<tr>
<td></td>
<td>Deutz: Engine oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Dipped/main beam, switch and warning lamp (Optional)</td>
<td></td>
<td>Main beam: Turn clockwise, knob lights. Dipped beam: Turn anticlockwise, knob light out.</td>
</tr>
<tr>
<td>18</td>
<td>Warning lamp - air cleaner</td>
<td></td>
<td>Air filter needs cleaning or changing if lamp lights while engine is running on full speed.</td>
</tr>
<tr>
<td>Item in fig. 4</td>
<td>Designation</td>
<td>Symbol</td>
<td>Function</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------</td>
<td>--------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>19</td>
<td>Tachometer/Hour meter</td>
<td>![Image]</td>
<td>Indicates speed of engine. Multiply gauge reading by 100. Driving time shown in digits.</td>
</tr>
<tr>
<td>20</td>
<td>Compaction meter (Optional)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Speedometer</td>
<td>![Image]</td>
<td>Indicates the speed in km/h.</td>
</tr>
<tr>
<td>22</td>
<td>Vibration/Frequency meter (Optional)</td>
<td>![Image]</td>
<td>Indicates the vibration frequency in Hz.</td>
</tr>
<tr>
<td>23</td>
<td>Vibration ON/OFF</td>
<td>![Image]</td>
<td>Press to switch on vibrator. Press again to switch off. Applies when (27) is in MAN mode.</td>
</tr>
<tr>
<td>24</td>
<td>Forward/reverse control</td>
<td>![Image]</td>
<td>Move the control in desired direction of travel. Driving speed is proportional to movement of the lever. In neutral the machine is automatically braked. Observe also that the engine can only be started with the lever in neutral position.</td>
</tr>
<tr>
<td>25</td>
<td>Speed regulator</td>
<td>![Image]</td>
<td>Limits movement of the forward/reverse control and thus the speed of the machine. The regulator can be disengaged.</td>
</tr>
<tr>
<td>26</td>
<td>Dummy plug</td>
<td></td>
<td>Optional equipment</td>
</tr>
<tr>
<td>27</td>
<td>Vibration selector</td>
<td>![Image]</td>
<td>In the MAN mode, switch vibration ON/OFF with (23). Vibration is switched OFF at setting O. The AUT mode gives automatic switching of vibration ON/OFF when driving forward and reverse, at set speed.</td>
</tr>
<tr>
<td>28</td>
<td>Amplitude selector</td>
<td>![Image]</td>
<td>Turn right to set high amplitude. Middle position vibration switched off. Turn left to set low amplitude.</td>
</tr>
<tr>
<td>29</td>
<td>Sequence selector</td>
<td>![Image]</td>
<td>Switch over (when changing from forward or reverse) to give vibration on front or rear roller to suit direction of travel.</td>
</tr>
<tr>
<td>30</td>
<td>Watering (Control switch)</td>
<td>![Image]</td>
<td>Controls flow of water to both the front and rear drum. MAN mode provides continuous watering. Watering is switched off in O mode. AUT mode provides automatic switching ON/OFF via the forward/reverse control.</td>
</tr>
<tr>
<td>31</td>
<td>Frequency meter switch (Optional)</td>
<td>![Image]</td>
<td>Turn right to obtain metering on front drum. Middle position metering switched off. Turn left to obtain metering on rear drum.</td>
</tr>
</tbody>
</table>

**DYNAPAC** CC 211C O-242-2EN
<table>
<thead>
<tr>
<th>Item in fig. 4</th>
<th>Designation</th>
<th>Symbol</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>Revs control (Diesel)</td>
<td><img src="image" alt="Symbol" /></td>
<td>Release/lock with centre button. Pull out to increase engine revs. Push in to decrease. Turn/screw the knob for fine adjustment. Anticlockwise = Increase. Clockwise = Decrease.</td>
</tr>
<tr>
<td>33</td>
<td>Locking lever (seat rotation)</td>
<td><img src="image" alt="Symbol" /></td>
<td>Release to allow control unit to be turned.</td>
</tr>
<tr>
<td>34</td>
<td>Stop control (Deutz diesel engine)</td>
<td><img src="image" alt="Symbol" /></td>
<td>Pull out to stop the engine</td>
</tr>
<tr>
<td>35</td>
<td>Watering (Control switch)</td>
<td><img src="image" alt="Symbol" /></td>
<td>Controls flow of water to the tyres. Continuous or intermittent flow.</td>
</tr>
</tbody>
</table>
Battery disconnector

1. Ensure that the daily service has been carried out, see MAINTENANCE manual.

2. Open the left engine-hood and switch on the battery disconnector (1).

⚠️ Make sure the water tanks are full for operation on asphalt.

Operator’s control pedistal

To set the swing arm (2), lift the locking lever (1) upwards and turn the whole control unit to the desired direction. The arm can be set at various fixed positions, i.e., centre, outer right, outer left. The locking lever is spring loaded and automatically secures the control unit in one of the positions when the lever is released.

⚠️ The control unit must not be set in any other position than those described above. The main reasons for this are as follows:

- The safety zone under the Rops frame will otherwise be exceeded.

- The seat can otherwise swing out inadvertently when the roller is being driven on a sloping surface.

Operator’s seat, adjustment

Adjust the operator seat so that all controls can be easily reached. The seat can be adjusted as follows:

1. Lengthwise
2. Back slope
3. Cushioning to suit weight of operator
BEFORE STARTING

Speed limiter, adjustment

The machine is fitted with an adjustable speed governor which can be disengaged for transport driving.

1. Loosen the knobs (2) and move them to a position that gives the desired driving speed, i.e., by limiting movement of the forward/reverse lever.

2. Tighten the knobs (2) after setting the desired speed.

Emergency stop, Checking

Ensure that the emergency stop knob (11) is pulled out, and that the brake warning lamp (10) is out.

Instruments and lamps

Checking

Before starting, turn the switch (9) to 1 and check that the voltmeter (13) indicates at least 12 volt.

Check also that the fuel gauge (14) indicates a reading and that the oil pressure lamp (12) lights.
Seat belt

If ROPS or a cab is fitted on the roller, use your seat belt (1).

⚠️ Always replace the seat belt with a new one if it is worn or has been subjected to excessive force.
Starting the diesel engine

1. Set the forward/reverse control (24) in neutral. The engine can only be started with the control in neutral.

2. Set the vibration selector (27) to O. Check that the emergency stop (34) is pushed in (applies to the Deutz engine only).

3. Press the revs control button (32) and rev up to 1/4 throttle. Make sure the starter switch (9) is in the I mode.

4. Press the starter button (8) and release immediately the engine starts.

![Warning icon] Wait a few seconds before trying again if the engine does not start immediately.

5. Run the engine warm at about 1000 r/min for 5 to 10 minutes depending on ambient temperature. Check that the tachometer/hour meter (19) indicates a reading.

6. Check while warming up that the voltmeter (13) shows 13 to 15 V and that the oil pressure warning lamp (12) is out. Check that the engine temperature gauge (16) is working at end off warming up period.

![Warning icon] The starter switch (9) must not be turned to the O mode while the engine is running. (Applies to rollers fitted with a Deutz engine).

![Warning icon] When starting up and driving a cold roller (cold hydraulic fluid), the braking distance will be longer than when the hydraulic fluid is at normal working temperature.

![Warning icon] Ensure that ventilation (evacuation) is adequate if the engine is run indoors. (Risk of carbon monoxide poisoning.)
Driving the roller

1. Set the engine revs control (32) to give 2400 r/min. Adjust finely by turning the control: Anti-clockwise = increase. Clockwise = decrease.

2. Ensure that the steering is working properly by turning the steering wheel once to the right and once to the left while the machine is standing still.

3. Turn on the watering system for compaction of asphalt, knob (30) for the drum, knob (35) for tyres.

⚠️ Make sure that the area in front of and behind the roller is clear.

4. Carefully move the forward/reverse control (24) to the desired direction of travel. Speed increases the further the control is moved from neutral.

⚠️ Speed must always be regulated with the forward/reverse control and not by changing speed of the engine.

Test operation of the emergency brake by pressing EMERGENCY STOP (11) while the roller is moving slowly forward.

5. Check while driving that gauges show normal readings and that warning lamps do not light.

Maximum permissible temperature (15) of hydraulic fluid ca 85°C (185°F).

Maximum temperature (16) of coolant ca 100°C (210°F) (applies to John Deere engine).

Maximum permissible temperature (16 in figure 11) of engine oil is indicated when the pointer reaches the red zone (applies to Deutz engine).

⚠️ If the horn sounds, this may be an indication that the fan belt has broken. Stop the engine immediately, check and correct the fault. (Applies to Deutz engines only).

⚠️ The main filter must be cleaned or changed if the air filter warning lamp (18) lights while driving or at maximum revs of the engine, see Maintenance Instructions.
**High/Low amplitude, Setting**

1. Vibrating is not permitted while the machine is standing still.

2. Set the desired amplitude, high or low, on the drums with switch (28).

   - **Amplitude must not be reset while the vibrator motor is running. Wait until vibration stops before changing the setting.**

3. Switch off vibration on one or the other drum, if required, with sequence switch (29). On changing direction of travel, switch over (29) if desired.

**Manual vibration**

With the vibration selector (27) in the MAN mode, vibration is switched ON/OFF simultaneously on the front and rear drum with push button (23) on the forward/reverse control.

**Automatic vibration**

1. The roller is also equipped with automatic vibration control. With the vibration selector (27) set in the AUT mode, vibration is switched ON/OFF automatically via the forward/reverse control on changing the direction of travel as the lever (24) passes the neutral mode.

2. Turn the adjusting rings, (36) behind the right instrument panel, to switch vibration on at the desired speed of the roller.
Driving near edge

At least two-thirds of the drum width must be on very firm ground when driving close to an edge.

⚠️ Remember that the centre of gravity of the machine is displaced outwards when steering to one side, eg, it moves to the right when steering to the left.

![Fig. 19 Position of drum when driving close to an edge](image)

Slopes

The tipping angle stated here is measured on a flat and hard supporting surface with the machine stationary. Steering angle is zero, vibration is switched off and the water tanks are full. Remember that a loose surface, applied steering of the machine, vibration switched on, driving speed and a higher level of the centre of gravity (eg, appliances fitted) can result in tipping on a smaller slope than that shown here. Where possible, avoid all driving transversely across a slope. Instead, drive straight up and down when working on sloping ground. The roller will topple over on side slopes greater than 30° or 58% to the right or left.

![Fig. 20 Tipping angle on side slopes](image)
**EMERGENCY BRAKING**

Braking is normally made with the forward/reverse control. The roller is braked to a standstill by the hydrostatic transmission when the control is moved to neutral.

In addition, a multi-disc brake on each torque hub is applied when the EMERGENCY STOP (11) is pressed.

⚠️ **Press the emergency stop (11) in the event of an emergency. Hold the steering wheel firmly as the machine brakes.**

After emergency braking: Reset the forward/reverse lever to neutral. Pull out the emergency stop knob (11).

**STOPPING**

**Normal braking**

1. Switch off vibration by pressing (23).
2. Stop the roller by moving the forward/reverse control (24) to neutral.
3. Press the engine speed control (32) until the engine idles at 800 to 1000 r/min and allow the engine to run a few minutes.
4. Press the emergency stop button (11).
5. Pull out the stop control (34) (Deutz only).
6. Turn the starter knob (9) to position 0.
7. Place the protective cover over the control panel. Lock if required.

⚠️ **When starting up and driving a cold roller (cold hydraulic fluid), the braking distance will be longer than when the hydraulic fluid is at normal working temperature.**
PARKING

Chocking the drum

Never leave the machine with the engine running unless the emergency stop knob is pressed in.

Make sure the roller is parked safely and is not a traffic hazard. Chock the drum and wheels when parking on a slope.

Beware of the risk of freezing during the winter season. Drain the water tank, pump and pipes.

Fig. 23 Drum
1. Brake chock

Battery disconnector

Turn the battery disconnector (1) OFF, and remove the handle before leaving the roller.

Fig. 24 Battery Compaction
1. Battery disconnector

Long-term parking

For parking periods longer than one month, see the Engine Manual, and the Maintenance Manual of the roller and study the chapters dealing with preservation of the engine and long-term parking respectively.

A good alternative to preservation of the engine is to start the engine every month and run the machine for about half an hour, using all the hydraulic functions. Lubricate all nipples afterwards and refuel. Remember to drain the water tank and the sprinkler system.

Fig. 25 Weather-protected roller
Before hoisting the roller, the articulation must be locked to prevent turning, see figure 27. Turn the steering wheel so that the machine is set for driving straight forward, move the interlocking arm (1) out and insert the locking pin (2) through the machine frame and the interlocking arm.

Ensure that the lifting hooks are firmly in position. Keep well clear of the hoisted load.

Check the weight of the machine punched on the hoisting plate (1).

Locking the articulated joint

Connect the lifting chains, making sure that no parts can be damaged while hoisting. Steel wires, chains, etc., must comply with current regulations.

Releasing the articulated joint

Remember to reset the articulation lock to its open mode before driving. Retract the interlocking arm (1) and fit the locking pin (2) into the articulation arm together with the interlocking arm.
TOWING

Method 1
Towing short distances with the engine running.

![Diagram](Fig. 29 Drive pump
1. Towing valve
2. Multi-function valve)

The roller can be moved up to 50 metres using either of the two methods described below:

⚠️ Press the emergency stop button and stop the engine temporarily. Chock the drum securely to prevent rolling.

1. Remove both floor plates from the operator's station. Loosen both towing valves (middle hexagonal nut) three turns anticlockwise. Hold the multi-function valve still (lower hexagonal nut). The multi-function valves are located on top of the propulsion pump.

2. Pull out the emergency stop knob and restart the engine. Allow the engine to idle.

3. The roller may now be towed.

Method 2
Towing short distances when the engine is not working

![Diagram](Fig. 30 Left side of frame
1. Bolt
2. Nut
3. Washer
(The above parts are optional equipment.)

⚠️ Chock the drums as a precaution against rolling, the machine may otherwise start to move when the brakes become disengaged.

1. Proceed to begin with as in item 1 above, but since the engine is not working the drum brakes must be disengaged as follows.

2. Fit the nut (2) and washer (3) on the bolt (1) and screw in the bolt in the centre of the drum drive as far as possible, ie, about 12 mm (1/2 in). Screw the nut against the frame until the washer makes contact and then use a wrench to turn the nut until the brake becomes disengaged. The same procedure must be carried out on both drums.
TOWING

Since the brakes are out of action, the roller must be towed using a tow-bar or be counter-braked when towing downhill.

The roller must be towed slowly and for a short distance only.

Fig. 31  Towing
1. Direction of travel
2. Engine braking
3. Tow-bar

After towing

Restore to the original settings after carrying out the towing procedure according to method 1 or 2 on pages 22.
TRANSPORTATION

Locking the articulation

⚠️ Lock the articulation prior to transportation.

1. Turn the steering wheel so that the machine is set for driving straight forward, move the interlocking arm (1) out and insert the locking pin (2) through the machine frame and the interlocking arm.

Fig. 32  Transportation of roller
1. Lashing wire
2. Chocks

Roller prepared for transportation

2. Chock the drums securely.

3. Support the drum frame firmly to prevent overloading of the rubber suspension of the drum.

4. Anchor the roller securely with lashing wire at all four corners.

Fig. 33  Transportation of roller
1. Lashing wire
2. Chocks

Releasing the articulated joint

⚠️ Remember to reset the articulation lock to its open mode before driving. Retract the interlocking arm (1) and fit the locking pin (2) into the articulation arm together with the interlocking arm.

Fig. 34  Left side of steering mechanism
1. Interlock disengaged
2. Locking pin
**ELECTRICAL SYSTEM, FUSES**

**Fuses**

The machine is equipped with a 12 V power supply and alternator.

⚠️ **Connect the battery with the correct polarity (negative to earth). The cable between the battery and alternator must not be removed while the engine is running.**

⚠️ **Before starting any electric welding on the machine. Disconnect the battery earthing cable and then other connections to the alternator.**

The electrical regulating and control system is fitted with fuses located in the fuse box.

Fig. 35 indicates the size and function of each fuse.

Fuse boxes are located on the front of the steering column.

❗️ The system of fuses shown here applies for machines from S/N *61510197*.

**Fuses in cabin**

The electrical system in the cabin has its own fuse box, which is located on the left side of the cabin ceiling.

---

**Fig. 35 Fuse boxes**

- **5A** 1. Vibration relay
- **5A** 2. Brake valve
- **7,5A** 3. Horn/V-belt monitor (Deutz)
- **7,5A** 4. Vibration pump
- **5A** 5. Transverse setting of drums
- **10A** 6. Hazard beacon
- **7,5A** 7. Water pump, rear
- **7,5A** 8. Water pump, front
- **5A** 9. Stop solenoid (John Deere)
- **7,5A** 10. Instruments
- **10A** 11. Horn/O position relay
- **7,5A** 12. Multimeter
- **10A** 13. Working lights, rear
- **5A** 14. Parking lights, left (number plate illumination)
- **5A** 15. Parking lights, right
- **7,5A** 16. Direction indicator, left
- **7,5A** 17. Dipped headlight, left
- **7,5A** 18. Dipped headlight, right
- **7,5A** 19. Direction indicator, right
- **7,5A** 20. Headlight, left
- **7,5A** 21. Headlight, right
- **5A** 22. Braking light, right
- **5A** 23. Braking light, left
- **7,5A** 24.

**Fig. 36 Fuse box, cab roof**

- **3A** 1. Cab lighting/Screen wash
- **15A** 2. Fan
- **10A** 3. Rear lights
- **10A** 4. Front lights
- **15A** 5. Front and rear wiper
- **25A** 6. Heater
1. Follow the SAFETY INSTRUCTIONS in the Safety Manual.

2. Ensure that all instructions in the MAINTENANCE MANUAL are followed.

3. Turn the battery disconnector switch to ON.

4. Check that the EMERGENCY STOP knob is in the OFF mode (pulled out).

5. Move the forward/reverse lever to NEUTRAL.

6. Set the amplitude selector to the NEUTRAL mode.

7. Set the stop control to the OFF mode (pressed in).

8. Start the engine and run it warm.

9. Test the brakes.
Remember that the braking distance will be longer if the roller is cold.

10. Drive the roller. Operate the forward/reverse controls with care.

11. Use the vibration only when the roller is in motion.

12. Check that the drums are watered sufficiently as required.

13. In an EMERGENCY:
   - Press the EMERGENCY BRAKE knob.
   - Hold the steering wheel firmly.
   - Prepare yourself for a dead stop.

14. When parking: - Stop the engine and chock the drums.

15. Towing: - See the OPERATION MANUAL.

16. Hoisting: - See the OPERATION MANUAL.