4. Calibration - Final position for Black Type Potentiometers

Carry out calibration no. 3. If machine does not work in auto, recalibrate steps 1 and 2, and calibrate final positions as follows.

Final positions are calibrated opposite way round than for Grey Type Potentiometer.

Press and hold the CAL -key.

Switch on the device using the ON/OFF -key.

The control lamp in the ON/OFF-key (ON/OFF) turns on. When the control lamps in auto -key and cal -key turn off, release the CAL -key. The control lamp in CAL -key is now on. Press the CAL -key again. When this control lamp flashes, the system can be fed with data on the final positions:

Turn the manual control turn key slowly to the right. Steering now moves to the final position of the right side. When steering is in the utmost final position press the AUTO -key.

Turn the manual control turn key slowly to the left. Steering now moves to the final position of the left side. When the steering is in the utmost final position press the CAL -key.

Turn steering to centre position using the manual control turn key.

Press the CAL -key to escape from tuning mode. The control lamp in CAL -key is now continuously on.

Switch off the device using the ON/OFF -key.

Electrical connection of the potentiometres

Caution! The polarity of the potentiometres is very important. If the wires are mixed up the potentiometres may be destroyed. Correct polarity is shown here:

<table>
<thead>
<tr>
<th>Colour codes:</th>
<th>Alternatives color code</th>
</tr>
</thead>
<tbody>
<tr>
<td>br</td>
<td>br</td>
</tr>
<tr>
<td>gn</td>
<td>gn</td>
</tr>
<tr>
<td>yw</td>
<td>yw</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ventil A</th>
<th>Ventil B</th>
<th>Spritzventiler</th>
<th>Verriegelung</th>
<th>Potentiometer Deichsel (= Drawbar)</th>
<th>Potentiometer Schlepper (= Tractor)</th>
<th>Reserve</th>
</tr>
</thead>
<tbody>
<tr>
<td>br</td>
<td>br</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>bl</td>
<td>bl</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

DIP Switches for # 6978

<table>
<thead>
<tr>
<th>DIP-Switches</th>
<th>Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON 1 2 3 4 5 6 7 8</td>
<td>0.2</td>
</tr>
<tr>
<td>ON 1 2 3 4 5 6 7 8</td>
<td>0.3</td>
</tr>
<tr>
<td>ON 1 2 3 4 5 6 7 8</td>
<td>0.4</td>
</tr>
<tr>
<td>ON 1 2 3 4 5 6 7 8</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Length of tractor coupler

<table>
<thead>
<tr>
<th>Length of tractor coupler</th>
</tr>
</thead>
<tbody>
<tr>
<td>450 mm</td>
</tr>
<tr>
<td>600 mm</td>
</tr>
<tr>
<td>750 mm</td>
</tr>
<tr>
<td>900 mm</td>
</tr>
</tbody>
</table>

Tractor Poti - High Draw Bar

Tractor Poti - Low Draw Bar

Commander III

long drawbar
2500mm / 2600mm
short drawbar
2050mm / 2600mm

Commander II

long drawbar
2500mm / 2600mm
short drawbar
2050mm / 2600mm

Dip 5 Not used. For detailed information please refer to user’s instruction book.
Overview - Control box

1 - Control LEFT lamp  
2 - Control RIGHT lamp  
3 - Lock indication lamp  
4 - Centre position lamp  
5 - Automatic key  
6 - Centre position key  
7 - Manual control turn key  
8 - ON/OFF key  
9 - Calibration key

Installation - Power supply

The power supply of the control box is fitted directly to the tractor battery. A 25 Amp. fuse must be fitted to its wire; connect fuse holder to the plus side of the battery.

*Colour codes:* Brown: +12 volt (V), Blue: Ground

Calibration

It is of essential importance that the drawbar is correctly fixed and free of slack when calibration is carried out.

*Note! The system has to be restarted before a calibration takes effect.*

1. Returning to basic tuning

*Warning! When using this command all altered data will be over written and the system returns to basic tuning.*

Press and hold the **AUTO**-key while switching on the device using the **ON/OFF**-key.

Control lamp in **ON/OFF**-key turns on.

When the control lamps in **CAL**-key and **AUTO**-key turn off, release the **AUTO**-key.

The control lamp in **AUTO** will now start to flash.

Press the **AUTO**-key again and the control lamp in **AUTO** will turn off.

The device switches off automatically.

2. Calibration - Centre position

Press and hold the **CAL**-key and the **CAL**-key while switching on the device using the **ON/OFF**-key. Control lamp in **ON/OFF**-key turns on.

When the control lamp in **AUTO**-key turns off, release the **AUTO**-key and the **CAL**-key.

Control lamps in **AUTO**-key and **CAL**-key will turn on.

Drive straight ahead with the tractor and trailer - if possible along a line - and use the manual control turn key [π] to adjust the steering until the trailer follows the tractor exactly in its trail.

When the control lamp for centre position **CAL** turns on, press the **CAL**-key. The control lamp in the **CAL**-key will now turn off.

Switch of the device using the **ON/OFF**-key.

3. Calibration - Final positions for Grey Type Potentiometer

Press and hold the **CAL**-key.

Switch on the device using the **ON/OFF**-key.

The control lamp in the **ON/OFF**-key **ON/OFF**-key turns on. When the control lamps in **AUTO**-key and **CAL**-key turn off, release the **CAL**-key. The control lamp in **CAL**-key is now on. Press the **CAL**-key again. When this control lamp flashes, the system can be fed with data on the final positions:

Turn the manual control turn key [π] slowly to the right. Steering now moves to the final position of the right side. When steering is in the utmost final position press the **CAL**-key.

Turn the manual control turn key [π] slowly to the left. Steering now moves to the final position of the left side. When the steering is in the utmost final position press the **AUTO**-key.

Turn steering to centre position using the manual control turn key [π].

Press the **CAL**-key to escape from tuning mode. The control lamp in **CAL**-key is now continuously on.

Switch off the device using the **ON/OFF**-key.