

### I-Flex System Error Code Data

Error Code	Error	Possible Cause	Elimination
<b>E01</b>	Fallen below radius range or angle range exceeded	<ul style="list-style-type: none"> <li>Fallen below the minimum radius or gone past the maximum angle specified in the respective load chart due to luffing up the boom too far</li> </ul>	<ul style="list-style-type: none"> <li>Luff down the boom to a radius or angle specified in the load chart.</li> </ul>
<b>E02</b>	Radius range exceeded or fallen below angle range	<ul style="list-style-type: none"> <li>Gone past the maximum radius or fallen below the minimum angle specified in the respective load chart due to luffing down the boom too far</li> </ul>	<ul style="list-style-type: none"> <li>Luff up the boom to a radius or angle specified in the load chart.</li> </ul>
<b>E03</b>	Non-permitted slewing zone (no load area)	<ul style="list-style-type: none"> <li>The slewing zone with load is not permitted</li> </ul>	<ul style="list-style-type: none"> <li>Slew to permitted area</li> </ul>
<b>E04</b>	Operating mode not acknowledged or non permitted slewing zone	<ul style="list-style-type: none"> <li>An incorrect operating mode has been selected</li> <li>The boom is in a non-permitted slewing zone</li> </ul>	<ul style="list-style-type: none"> <li>Set the correct operating mode for the operating configuration in question. Refer to Operator's Handbook.</li> <li>Slew the boom to a permitted area. Refer to Section 8.</li> </ul>
<b>E05</b>	Prohibited length range	<ul style="list-style-type: none"> <li>Boom has been extended either too far or not far enough, e.g. if it is prohibited to go beyond a certain maximum boom length or with load curves for jibs where the main boom has to be extended to a certain length</li> <li>Length sensor adjustment has changed, e.g. the cable slid off the length sensor reel.</li> </ul>	<ul style="list-style-type: none"> <li>Extend/retract boom to the correct length</li> <li>Retract boom. Check the prestress of the cable reel (cable must be taut). Open the length sensor and carefully turn the length sensor pot counterclockwise until the detent by means of a screw driver</li> </ul>
		<ul style="list-style-type: none"> <li>Clutch between length sensor pot and drive is defective</li> </ul>	<ul style="list-style-type: none"> <li>Replace the complete clutch including drive wheel and adjust length sensor pot as described above</li> </ul>

<b>Error Code</b>	<b>Error</b>	<b>Possible Cause</b>	<b>Elimination</b>
<b>E11</b>	Fallen below lower limit value for measuring channel "length main boom"	<ul style="list-style-type: none"> <li>Length potentiometer is defective</li> </ul>	<ul style="list-style-type: none"> <li>Replace length potentiometer</li> </ul>
<b>E12</b>	Fallen below the lower limit value in the measuring channel "pressure piston side"	<ul style="list-style-type: none"> <li>Pressure transducer is defective.</li> </ul>	<ul style="list-style-type: none"> <li>Replace pressure transducer</li> </ul>
<b>E13</b>	Fallen below lower limit value in the measuring channel "pressure rod side"	<ul style="list-style-type: none"> <li>refer to E12</li> </ul>	<ul style="list-style-type: none"> <li>refer to E12</li> </ul>
<b>E14</b>	Fallen below lower limit value in measuring channel "force"	<ul style="list-style-type: none"> <li>Force transducer defective</li> <li>Electronic component in the measuring channel is defective.</li> </ul>	<ul style="list-style-type: none"> <li>Replace force transducer</li> <li>Replace sensor unit</li> </ul>
<b>E15</b>	Fallen below lower limit value in measuring channel "angle main boom"	<ul style="list-style-type: none"> <li>Angle potentiometer defective</li> <li>Electronic component in the measuring channel defective.</li> </ul>	<ul style="list-style-type: none"> <li>Replace angle sensor,</li> <li>Replace electronic board,</li> </ul>
<b>E16</b>	Fallen below lower limit value in measuring channel "angle 2"	<ul style="list-style-type: none"> <li>Angle potentiometer defective</li> <li>Electronic component in the measuring channel defective.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to E-15</li> <li>Refer to E-15</li> </ul>
<b>E17</b>	Fallen below lower limit value "length telescope I (+II)"	<ul style="list-style-type: none"> <li>Length potentiometer defective</li> <li>Electronic component in the measuring channel defective</li> </ul>	<ul style="list-style-type: none"> <li>Replace length sensor,</li> <li>Replace electronic board,</li> </ul>
<b>E18</b>	Front outrigger overloaded	<ul style="list-style-type: none"> <li>Front outrigger overloaded</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
<b>E1A</b>	Fallen below lower limit value in measuring channel "slewing angle 1".	<ul style="list-style-type: none"> <li>Cable between the central unit and the slewing angle sensor defective or loose.</li> </ul>	<ul style="list-style-type: none"> <li>Check cable as well as plugs, replace, if need be.</li> </ul>

Error Code	Error	Possible Cause	Elimination
		<ul style="list-style-type: none"> <li>Slewing angle potentiometer is defective</li> <li>Electronic component in the measuring channel defective</li> </ul>	<ul style="list-style-type: none"> <li>Replace slewing angle sensor</li> <li>Replace sensor unit</li> </ul>
<b>E1B</b>	Fallen below lower limit value in measuring channel "slewing angle 2"	<ul style="list-style-type: none"> <li>refer to E1A</li> </ul>	<ul style="list-style-type: none"> <li>refer to E1A</li> </ul>
<b>E21</b>	Upper limit value in measuring channel "main boom length" has been exceeded.	<ul style="list-style-type: none"> <li>refer to E11</li> </ul>	<ul style="list-style-type: none"> <li>refer to E11</li> </ul>
<b>E22</b>	Upper limit value in measuring channel "pressure piston side" has been exceeded	<ul style="list-style-type: none"> <li>refer to E12</li> </ul>	<ul style="list-style-type: none"> <li>refer to E12</li> </ul>
<b>E23</b>	Upper limit value in measuring channel "pressure rod side" has been exceeded.	<ul style="list-style-type: none"> <li>refer to E12</li> </ul>	<ul style="list-style-type: none"> <li>refer to E12</li> </ul>
<b>E24</b>	Upper limit value in measuring channel "force" has been exceeded.	<ul style="list-style-type: none"> <li>refer to E14</li> </ul>	<ul style="list-style-type: none"> <li>refer to E14</li> </ul>
<b>E25</b>	Upper limit value in measuring channel "main boom angle" has been exceeded.	<ul style="list-style-type: none"> <li>refer to E15</li> </ul>	<ul style="list-style-type: none"> <li>refer to E15</li> </ul>
<b>E26</b>	Upper limit value in measuring channel "angle 2" has been exceeded.	<ul style="list-style-type: none"> <li>refer to E16</li> </ul>	<ul style="list-style-type: none"> <li>refer to E16</li> </ul>
<b>E27</b>	Upper limit value in measuring channel "length telescope I (+II) has been exceeded.	<ul style="list-style-type: none"> <li>refer to E17</li> </ul>	<ul style="list-style-type: none"> <li>refer to E17</li> </ul>
<b>E2A</b>	Upper limit value in measuring channel "slewing angle 1" has been exceeded	<ul style="list-style-type: none"> <li>refer to E1A</li> </ul>	<ul style="list-style-type: none"> <li>refer to E1A</li> </ul>
<b>E2B</b>	Upper limit value in measuring channel "slewing angle 2" has been exceeded	<ul style="list-style-type: none"> <li>refer to E1A</li> </ul>	<ul style="list-style-type: none"> <li>refer to E1A</li> </ul>
<b>E31</b>	Error in the system program	<ul style="list-style-type: none"> <li>The system program file is defective.</li> <li>Flash-EPROM defective</li> </ul>	<ul style="list-style-type: none"> <li>Upload valid system software</li> <li>Replace central unit</li> </ul>

<b>Error Code</b>	<b>Error</b>	<b>Possible Cause</b>	<b>Elimination</b>
<b>E37</b>	Error in the logical program flow	<ul style="list-style-type: none"> <li>System program file is defective</li> <li>Flash-EPROM defective</li> </ul>	<ul style="list-style-type: none"> <li>Upload valid system software</li> <li>Replace central unit</li> </ul>
<b>E38</b>	System program and crane data file do not match.	<ul style="list-style-type: none"> <li>The system program in the LMI does not match to the programming in the crane data file</li> </ul>	<ul style="list-style-type: none"> <li>Upload valid system program file or the valid crane data file</li> </ul>
<b>E39</b>	System program and load chart file do not match	<ul style="list-style-type: none"> <li>The system program in the LMI and the programming in the load chart file do not match.</li> </ul>	<ul style="list-style-type: none"> <li>Upload valid system program file or the valid load chart file</li> </ul>
<b>E43</b>	Error in the write/read memory, (RAM)	<ul style="list-style-type: none"> <li>Write/read memory (RAM) or central unit defective.</li> </ul>	<ul style="list-style-type: none"> <li>Replace central unit</li> </ul>
<b>E47</b>	<p>Error in the monitored write/ read memory.</p> <p>The CRC verification of the monitored write/read memory provides an incoherent result</p>	<ul style="list-style-type: none"> <li>The CRC sign of the monitored write/read memory is wrong</li> <li>The buffer battery is discharged (&lt; 2V at 1kOhm).</li> <li>Central unit defective.</li> </ul>	<ul style="list-style-type: none"> <li>Restart the LMI</li> <li>Replace buffer battery on the central unit.</li> <li>Replace central unit</li> </ul>
<b>E51</b>	Error in the crane data file	<ul style="list-style-type: none"> <li>No valid data in the crane data file.</li> <li>Flash-EPROM defective</li> </ul>	<ul style="list-style-type: none"> <li>Upload valid crane data file</li> <li>Replace central unit</li> </ul>
<b>E52</b>	Error in load chart file.	<ul style="list-style-type: none"> <li>No valid data in the load chart file</li> <li>Flash-EPROM defective</li> </ul>	<ul style="list-style-type: none"> <li>Upload valid load chart file</li> <li>Replace central unit</li> </ul>
<b>E56</b>	Error in crane data file.	<ul style="list-style-type: none"> <li>No valid data in the crane data file during calibration.</li> <li>Flash-EPROM defective</li> </ul>	<ul style="list-style-type: none"> <li>Restore or upload valid crane data file</li> <li>Replace central unit</li> </ul>
<b>E57</b>	Error in serial crane data file.	<ul style="list-style-type: none"> <li>Calibration data file does not contain valid data.</li> <li>Flash-EPROM defective</li> </ul>	<ul style="list-style-type: none"> <li>Upload calibration data file</li> <li>Replace central unit</li> </ul>
<b>E60</b>	The number of the selected File base and the programmed value are not identical	<ul style="list-style-type: none"> <li>No valid data in the load chart file</li> </ul>	<ul style="list-style-type: none"> <li>Upload valid load chart file</li> </ul>

<b>Error Code</b>	<b>Error</b>	<b>Possible Cause</b>	<b>Elimination</b>
		<ul style="list-style-type: none"> <li>Base number not programmed</li> </ul>	<ul style="list-style-type: none"> <li>Program the correct base number (1 for base 1, 2 for base 2)</li> </ul>
		<ul style="list-style-type: none"> <li>Load chart file wrongly programmed</li> </ul>	<ul style="list-style-type: none"> <li>Check base programming in the load chart file.</li> </ul>
<b>E61</b>	Error in the CAN bus data transfer for all CAN units	<ul style="list-style-type: none"> <li>CAN Bus cable between the central unit and the sensor units defective or not connected.</li> <li>Short circuit in a CAN Bus cable</li> <li>Can bus port in the central unit defective</li> </ul>	<ul style="list-style-type: none"> <li>Check the connection between the central unit and the sensor units (wiring harness)</li> <li>Replace Can Bus cable</li> <li>Replace the central unit</li> </ul>
<b>E62</b>	Error in the can bus data transfer of the pressure transducer sensor unit	<ul style="list-style-type: none"> <li>Cable between the central unit and the sensor unit defective or not connected.</li> <li>Sensor unit is defective</li> </ul>	<ul style="list-style-type: none"> <li>Check the cable to the sensor unit (wiring harness)</li> <li>Replace the sensor unit</li> </ul>
<b>E63</b>	Error in the can bus pressure transducer sensor unit	<ul style="list-style-type: none"> <li>The analog values of the sensor unit are invalid</li> </ul>	<ul style="list-style-type: none"> <li>Replace the sensor unit.</li> </ul>
<b>E64</b>	Error in the can bus data transfer of the length/angle sensor unit	<ul style="list-style-type: none"> <li>Cable between the pressure transducer and cable reel defective or not connected.</li> <li>Sensor unit is defective</li> </ul>	<ul style="list-style-type: none"> <li>Check the cable to the sensor unit</li> <li>Replace the electronic board in the cable reel,</li> </ul>
<b>E65</b>	Error in the can bus length/angle sensor unit	<ul style="list-style-type: none"> <li>Angle sensor defective</li> <li>Length sensor defective</li> <li>Sensor unit is defective</li> </ul>	<ul style="list-style-type: none"> <li>Replace the angle sensor</li> <li>Replace the length sensor</li> <li>Replace the electronic board in the cable reel,</li> </ul>
<b>E66</b>	Error in the can bus data transfer of the 2 <sup>nd</sup> length/angle sensor unit	<ul style="list-style-type: none"> <li>See E62</li> </ul>	<ul style="list-style-type: none"> <li>See E62</li> </ul>
<b>E67</b>	Error in the can bus of the 2 <sup>nd</sup> length /angle sensor unit	<ul style="list-style-type: none"> <li>See E63</li> </ul>	<ul style="list-style-type: none"> <li>See E63</li> </ul>
<b>E68</b>	Error in the can bus data transfer of the force sensor unit	<ul style="list-style-type: none"> <li>See E62</li> </ul>	<ul style="list-style-type: none"> <li>See E62</li> </ul>
<b>E69</b>	Error in the can bus force sensor unit	<ul style="list-style-type: none"> <li>See E63</li> </ul>	<ul style="list-style-type: none"> <li>See E63</li> </ul>

<b>Error Code</b>	<b>Error</b>	<b>Possible Cause</b>	<b>Elimination</b>
<b>E80</b>	Error in the slewing angle measurement	<ul style="list-style-type: none"> <li>The difference between the average of the slewing angle and one of the wipers of the slewing potentiometer is out of the tolerance</li> </ul>	<ul style="list-style-type: none"> <li>See section <a href="#">Slewing Sensing</a></li> </ul>
<b>E84</b>	Wrong rigging condition.	<ul style="list-style-type: none"> <li>The selected rigging condition is not contained in the crane data file.</li> </ul>	<ul style="list-style-type: none"> <li>Select another rigging condition</li> <li>Check the programming in the crane data file.</li> </ul>
<b>E85</b>	Error in the radius determination	<ul style="list-style-type: none"> <li>The computed radius is too small (negative deflection)</li> </ul>	<ul style="list-style-type: none"> <li>Check the programming in the crane data file.</li> </ul>
<b>E89</b>	Operating mode switchover with load.	<ul style="list-style-type: none"> <li>The operating mode on the console has been switched over with the boom loaded.</li> </ul>	<ul style="list-style-type: none"> <li>Select operating mode without load on the boom</li> </ul>
<b>E91</b>	No data transmission from the console to the central unit	<ul style="list-style-type: none"> <li>Power supply of the console is interrupted</li> <li>Interruption or accidental ground in the line between console electronics and central unit</li> <li>Transmitter/receiver module of console is defective</li> </ul>	<ul style="list-style-type: none"> <li>Check power at terminal X1 of the console electronics</li> <li>Check the connection console electronics - central unit. In case of an accidental ground, the transmitter module of the console electronics might be damaged.</li> <li>Exchange console electronics or CU resp.</li> </ul>
<b>E92</b>	Error in the data transmission from console to central unit	<ul style="list-style-type: none"> <li>Loose connection in the line between console electronics and central unit</li> <li>Transmitter/receiver module is defective</li> </ul>	<ul style="list-style-type: none"> <li>Check the connection between console electronics and central unit</li> <li>Exchange console electronics or CU resp.</li> </ul>
<b>E93</b>	Error in the data transmission from the central unit to the console	<ul style="list-style-type: none"> <li>refer to E92</li> </ul>	<ul style="list-style-type: none"> <li>refer to E92</li> </ul>
<b>E94</b>	No data transmission from the central unit to the console	<ul style="list-style-type: none"> <li>Interruption or accidental ground in the line central unit – console</li> </ul>	<ul style="list-style-type: none"> <li>Check line to the console (in case of accidental ground, replace console electronics, too).</li> </ul>

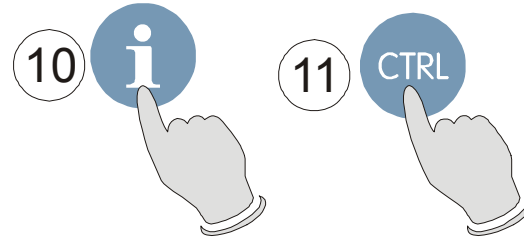
<b>Error Code</b>	<b>Error</b>	<b>Possible Cause</b>	<b>Elimination</b>
		<ul style="list-style-type: none"> <li>• Transmitter/receiver module is defective</li> <li>• Computer module is defective</li> <li>• Electro-magnetic interferences (e.g. when switching contactors or valves)</li> </ul>	<ul style="list-style-type: none"> <li>• Exchange console electronics or CU resp.</li> <li>• Exchange CU.</li> <li>• Eliminate the source of interferences by inverse diodes or varistors.</li> </ul>
<b>E95</b>	Error in the console File	<ul style="list-style-type: none"> <li>• The console File is defective.</li> </ul>	<ul style="list-style-type: none"> <li>• Replace the console software</li> </ul>
<b>E96</b>	Error in the internal RAM of the console.	<ul style="list-style-type: none"> <li>• The CPU of the console is defective.</li> <li>• The console main board is defective.</li> </ul>	<ul style="list-style-type: none"> <li>• Replace console electronics.</li> </ul>
<b>E97</b>	Error in the external RAM of the console	<ul style="list-style-type: none"> <li>• The external RAM of the console is defective.</li> <li>• The console main board is defective.</li> </ul>	<ul style="list-style-type: none"> <li>• Replace the external RAM of the console.</li> <li>• Replace the console electronics.</li> </ul>
<b>EAB</b>	Short circuit in the A2B switch circuit	<ul style="list-style-type: none"> <li>• Short circuit in the A2B switch</li> <li>• Short circuit in the cable to the A2B switch</li> </ul>	<ul style="list-style-type: none"> <li>• Replace A2B switch</li> <li>• Replace cable to the A2B switch</li> </ul>
<b>EAC</b>	A2B switch circuit disconnected	<ul style="list-style-type: none"> <li>• Disconnected cable in the A2B switch</li> <li>• Disconnected cable to the A2B switch</li> </ul>	<ul style="list-style-type: none"> <li>• Connect or replace cable in the A2B switch</li> <li>• Connect or replace cable to the A2B switch</li> </ul>
<b>EAD</b>	No valid A2B switch status	<ul style="list-style-type: none"> <li>• Sensor wrong function</li> <li>• CAN bus delay</li> </ul>	<ul style="list-style-type: none"> <li>• Replace A2B switch</li> <li>• Replace cable to the A2B switch</li> </ul>
<b>EC0</b>	Prohibited area	<ul style="list-style-type: none"> <li>• Boom is about to collide with the engine hood, switch off</li> </ul>	<ul style="list-style-type: none"> <li>• Move boom to permitted area</li> </ul>
<b>EC1</b>	Approaching prohibited area	<ul style="list-style-type: none"> <li>• Boom is about to collide with the engine hood, prewarning</li> </ul>	<ul style="list-style-type: none"> <li>• Move boom to permitted area</li> </ul>

## Service Screen For Sensor Calibration

### Activating the Service Screen for Sensor Calibration

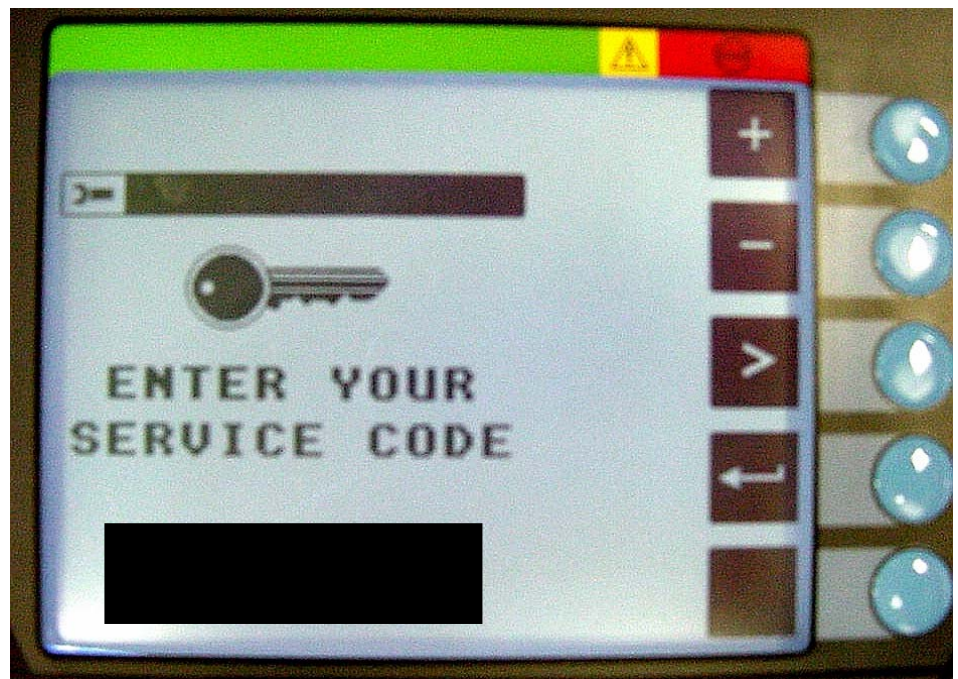
To activate the service screen and sensor calibration function, press the INFO key on the console to activate the INFO Function.

Now press the CTRL key.



At this point, a five digit Authorization Number must be entered. Only authorized personnel may adjust the zero-point settings.

Use the ">" key to switch between digits; use the "+" and "-" keys to increase and decrease each digit. Use the enter key to confirm entry.



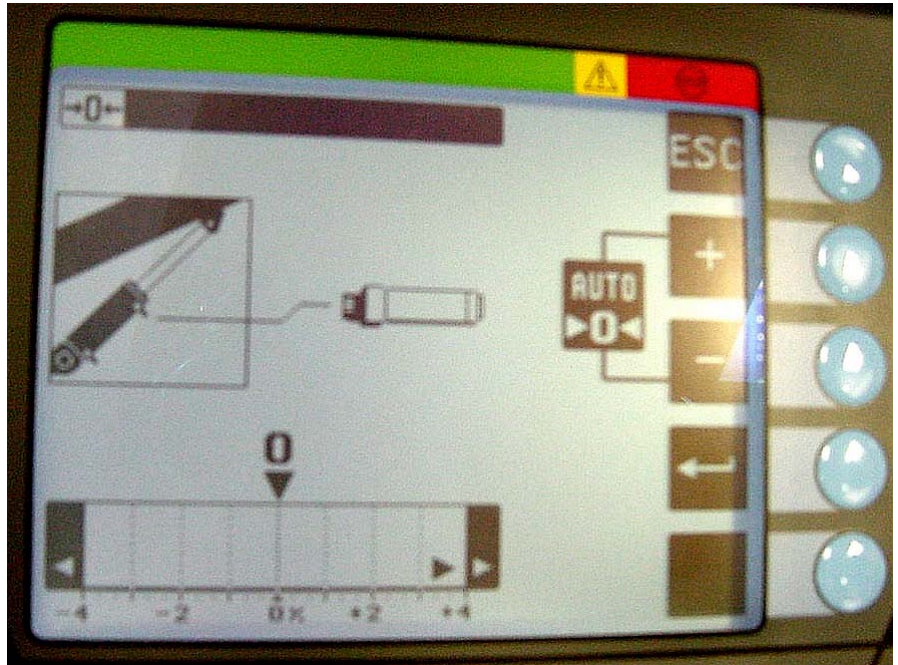


Now, having successfully entered a valid password, the piston-side zero-point setting function is activated.

The ESC key will allow you to leave the sensor calibration function.

The return key toggles between the piston-side, the rod-side zero setting, and length, and angle calibration.

To adjust piston pressure now, see section 6.2 of this manual.

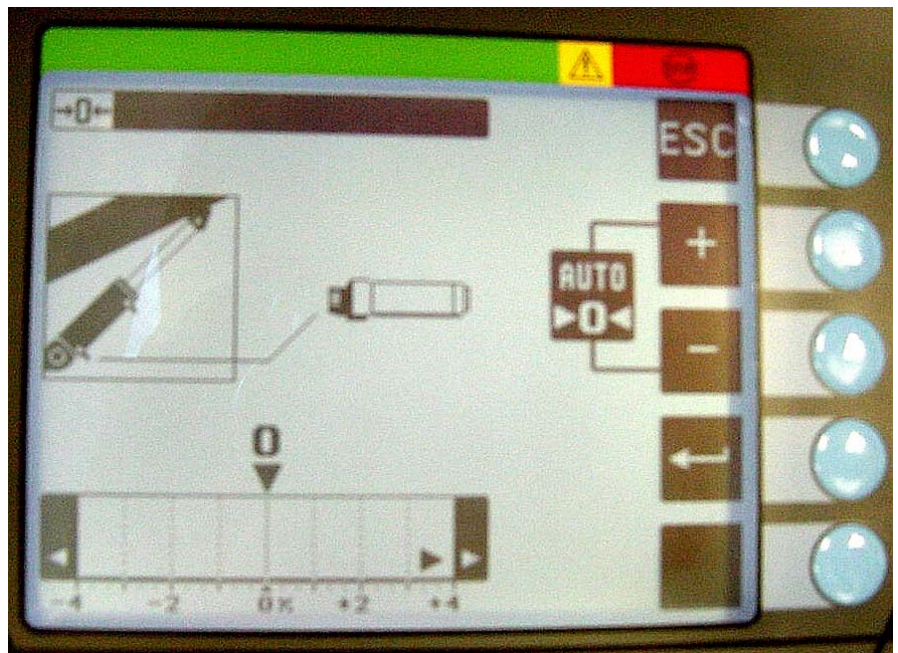


This is the rod pressure adjustment screen.

The ESC key will allow you to leave the sensor calibration function.

The return key toggles between the piston-side, the rod-side zero setting, and length, and angle calibration.

To adjust rod pressure now, see section 6.2 of this manual.



The return key toggles between the piston-side, the rod-side zero setting, and length, and angle calibration.

When the sensor calibration is finished, pressing the ESC or INFO key returns the console display to normal.

## Zero-Setting The Transducer Inputs

**NOTE:** The only thing adjustable for the pressure transducers is the zero point, which is the voltage the transducer outputs when there is no (zero) pressure sensed.

**CAUTION:** Ensure there is no pressure in the hydraulic line when disconnecting the hoses from pressure transducers.

The display shows which transducer (piston-side, rod-side or force) is being zeroed and a horizontal dial marks the present pressure (or force) difference in %. By pressing the + key, the input pressure (or force) is adjusted upwards, and by pressing the minus (-)key, the input value is adjusted downwards. When the plus (+) and minus (-) keys are pressed simultaneously, the zero setting occurs automatically. Manual adjustments may be performed using + or -.

