**MOTION CONTROLS**

**Power ON**

**Power OFF / EMERGENCY STOP**

**Z Axis**

**Joystick Control**

**Default Control:**
- Z Axis: Angle Operation
- TW1: Slew Operation
- TW2: Tele* / Midcut* / VFR* (* as applicable)

**Rotor START**
- (Uphill)
- (Downhill)

**Auto-Reset**

**Lift Float**
- Advanced Float*

**Angle Float**

**Diverter #1**
- 6th Service Activation
- (Default Control TW1)

**Diverter #2**
- ON/OFF Control for Accessory

**N/A (No Function)**

**LEDs:** Function Status
- ○ Deactivated
- ● Active
- ☆ Temporarily deactivated

**Tele*/ Midcut*/ VFR* (Default)**

**Slew (Swap Mode)**

**Tele*/ Midcut*/ VFR* Swap Thumb Wheel Swap (TW1 ☰ TW2)**

- <3s
- >3s

**On Tele/VFR machines, VFR is the default ‘Slew Swap’ function; the Tele function is configured to the D1 diverter control.**
### Keypad Control Buttons

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
<th>Control Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Angle Float ON/OFF" /></td>
<td>Angle Float ON/OFF</td>
<td>Pressing either the LH or the RH button will switch Angle Float function ON/OFF.</td>
</tr>
<tr>
<td><img src="image" alt="Lift Float / Advanced Lift Float ON/OFF" /></td>
<td>Lift Float / Advanced Lift Float* ON/OFF (* where applicable)</td>
<td>Pressing either the LH or the RH button will switch Lift Float function ON/OFF.</td>
</tr>
<tr>
<td><img src="image" alt="Rotor START (Uphill Direction)" /></td>
<td>Rotor START (Uphill Direction).</td>
<td>Press to start rotor. 8 second delay for direction change.</td>
</tr>
<tr>
<td><img src="image" alt="Rotor START (Downhill Direction)" /></td>
<td>Rotor START (Downhill Direction).</td>
<td>Press to start rotor. 8 second delay for direction change.</td>
</tr>
<tr>
<td><img src="image" alt="Rotor STOP" /></td>
<td>Rotor STOP.</td>
<td>Press to stop rotor. Press first before direction change.</td>
</tr>
<tr>
<td><img src="image" alt="Auto-Reset (Slew)" /></td>
<td>Auto-Reset (Slew).</td>
<td>Press to activate auto-reset function. Deactivates if slew is manually operated.</td>
</tr>
<tr>
<td><img src="image" alt="Tele* / Midcut* / VFR* operation" /></td>
<td>Tele* / Midcut* / VFR* operation; Default controls for the machines specific* function.</td>
<td>Pressing the arrow buttons will operate the specific arm* function in the applicable direction. Operates slew in swap mode.</td>
</tr>
<tr>
<td><img src="image" alt="A) Slew Tele Swap (*specific function) B) Thumb Wheel Swap (TW1 TW2)" /></td>
<td>A) Slew Tele Swap (*specific function) B) Thumb Wheel Swap (TW1 TW2)</td>
<td>A) Press button for less than 3 seconds. B) Press button for more than 3 seconds.</td>
</tr>
<tr>
<td><img src="image" alt="Diverter #1 : 6th Service Activation" /></td>
<td>Diverter #1 : 6th Service Activation</td>
<td>Press button to activate 6th Service. Operation is with Thumb Wheel 1 (TW1).</td>
</tr>
<tr>
<td><img src="image" alt="Diverter #2 : Accessory Control ON/OFF" /></td>
<td>Diverter #2 : Accessory Control ON/OFF</td>
<td>Press to switch the accessory ON or OFF. Only applicable if an accessory is fitted.</td>
</tr>
<tr>
<td><img src="image" alt="Not associated to any function" /></td>
<td>Not associated to any function.</td>
<td>N/A</td>
</tr>
<tr>
<td><img src="image" alt="Function status - OFF" /></td>
<td>Function status - OFF.</td>
<td>LED Light for specific control OFF.</td>
</tr>
<tr>
<td><img src="image" alt="Function status - ON" /></td>
<td>Function status - ON.</td>
<td>LED Light for specific control ON.</td>
</tr>
<tr>
<td><img src="image" alt="Function status - Temporarily deactivated" /></td>
<td>Function status - Temporarily deactivated.</td>
<td>LED Light for specific control FLASHING.</td>
</tr>
<tr>
<td><img src="image" alt="Function status – Calibration mode active" /></td>
<td>Function status – Calibration mode active</td>
<td>All LED Lights on the unit FLASHING.</td>
</tr>
</tbody>
</table>
When the rotor is switched off it will continue to ‘freewheel’ under its own momentum for up to 40 seconds before finally coming to a standstill – do not leave the tractor cab or attempt to approach the flailhead until the rotor has stopped turning completely.
TEMPERATURE COMPENSATION – SELECTION & CALIBRATION

The control unit features a built-in temperature compensation system which automatically adjusts the performance of the system in response to increased solenoid temperatures ensuring maximum operating performance is retained in all work conditions.

On initial machine setup the temperature compensation system must be calibrated and activated; when this has been performed the temperature compensation system will not require any further attention or adjustment and will operate automatically.

*The procedures for calibration and activation of the temperature compensation system are as stated below. Ensure PTO is OFF for the calibration procedure.*

**Temperature Compensation - Calibration**

*With the control unit powered OFF;*

1. Press and hold ‘D1’ & ‘D2’ keys.
2. Turn ‘Power ON’; unit will emit a ‘beep’, *Power, D1 & D2 LED’s will illuminate.*
3. Press ‘Rotor Stop’ key.
4. **D1 & D2 LED’s** will **flash** (cutoff outputs will turn on for approx 2 seconds). *Unit will emit a ‘beep’ to confirm calibration and the unit will be restarted.*

![Temperature Compensation - Calibration Diagram](image)

**Temperature Compensation - Enable / Disable**

*With the control unit powered OFF;*

2. Turn ‘Power ON’; unit will emit a ‘beep’ and *Power LED will flash.*
3. Press ‘Auto-Reset’ key to enable (or disable) temperature compensation.  
   *Power LED ON = Temperature Compensation ON (Enabled)*  
   *Power LED OFF = Temperature Compensation OFF (Disabled)*
4. Press ‘Rotor Stop’ key to complete selection.  
   *All LED’s will flash and the unit will be restarted.*

![Temperature Compensation - Enable / Disable Diagram](image)
BANG-BANG / PWM MODE SELECTION – SLEW & TELE OUTPUTS

These control units are capable of operating ‘Bang-Bang’ or Proportional control valves and will be pre-set at the factory to match the specific machine it is being supplied with. Where a control unit is supplied as a replacement or is being used on a different machine it must be re-configured to match the particular valve set of the machine; the procedure for this is stated below.

**Bang-Bang / Proportional (PWM Mode) Selection**

*With the control unit powered OFF;*

2. Turn ‘Power ON’; unit will emit a ‘beep’ and Power, Lift Float & Angle Float LED’s will flash.
3. Press ‘Rotor Stop’.
4. Press the dedicated key for the type of control valve fitted to the machine; Select ‘Angle Float’ key for machines equipped with Proportional valves. Select ‘Lift Float’ key for machines equipped with Bang-Bang’ valves. Unit will emit a ‘beep’ to confirm selection and LED of selected key will remain lit.
5. Press ‘Rotor Stop’ key to complete selection. All LED’s will flash and the unit will be restarted.
CONTROL UNIT CALIBRATION

If for any reason the controls should stop responding the unit will need to be calibrated; the procedure for this is shown below.

Press and release the rotor stop button to enter calibration mode; all LED’s will simultaneously flash to confirm.

Operate the joystick through its complete range of movements 4 to 5 times then operate each toggle switch fully forwards and fully backwards 4 to 5 times. All LED’s will flash continuously.

Press the rotor stop button once to exit calibration mode; all LED’s will flash rapidly and the unit will emit a confirmation ‘beep’.

With the unit powered off; simultaneously press and hold both rotor direction buttons before then powering on the unit.

When all LED’s light up; release both buttons.

Unit will automatically power off and back on.
**ERROR / FAULT REPORTING**

Error detection / reporting is indicated by specific flashing of the LED(s) on the control unit; depending on the nature of the fault these will be indicated by the just the Power LED flashing for a specific fault or by all the LED’s flashing at the same time for a critical hardware fault. Refer to the chart below of details of errors/faults.

*Note: on error detection flashes of the LED(s) will be continually repeated with a short delay between each specific sequence of flashes.*

<table>
<thead>
<tr>
<th>Specific Fault Detection / Report</th>
<th>Critical Hardware Fault Detection / Report</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power LED</strong></td>
<td><strong>Error / Fault</strong></td>
</tr>
<tr>
<td>2 x Flash</td>
<td>Analogue input fault</td>
</tr>
<tr>
<td>3 x Flash</td>
<td>System overcurrent</td>
</tr>
<tr>
<td>4 x Flash</td>
<td>Channel overcurrent</td>
</tr>
<tr>
<td>5 x Flash</td>
<td>System over temperature</td>
</tr>
<tr>
<td>6 x Flash</td>
<td>System under voltage</td>
</tr>
<tr>
<td>7 x Flash</td>
<td>System overvoltage</td>
</tr>
<tr>
<td>8 x Flash</td>
<td>Calibration fault</td>
</tr>
<tr>
<td>9 x Flash</td>
<td>Td channel cut-off overcurrent</td>
</tr>
<tr>
<td>10 x Flash</td>
<td>Td EEPROM load error</td>
</tr>
</tbody>
</table>