

A . Power Shuttle calibration

Calibration of the Power Shuttle is mandatory when the following components are changed:

- a Power Shuttle solenoid valve
- the solenoid valve control unit
- the Power Shuttle unit or one of its components
- the Autotronic 5 - Transmission 1 controller (CAB151)

Given the temperature range allowed for calibration, the controllers optimise the quality of shifting by continually correcting it depending on the transmission temperature.

Calibration is automatic, which allows a deft and smooth quality of shifting.

The user can then, depending on requirements, adjust the cycling of the Power Shuttle.

Preliminary steps

If possible, the tractor should be positioned on flat ground to carry out the calibration.

To gain entry into calibration mode, the transmission oil temperature must be between 15°C and 60°C (59°F and 140°F).

The temperature is measured by the sensor on the gearbox. It can be read in 3 different ways:

1. Direct display of the temperature on right-hand screen of the DCC2 (for all tractors):

- Engine running
- Place the shuttle lever in neutral
- Simultaneously activate the button on the range shift switch and the differential lock switch for at least 4 seconds
- The reading is displayed on the DCC2 (Fig. 1)
- The temperature reading can be switched off at any time by pressing the DCC2 display selector switch (CAB31)

Repeat the procedure to restore the temperature display.

NOTE: The tractor can still be used when in temperature reading mode, but the differential lock should be disengaged.

2. Direct display of the temperature on the DOT MATRIX screen by entering the diagnostic mode (GUF224).

NOTE: The tractor can still be used when in temperature reading mode.

3. Read using Wintest.

Bring the tractor up to temperature, for example:

Tractor stationary

- Run the engine with the transmission lever and Power Shuttle lever in neutral and the PTO clutch engaged.
- Measure and note the temperature.
- Then, before starting calibration, move the Power Shuttle lever 10 times in each direction, leaving the lever in each position for 5 to 10 seconds to bring the control unit and solenoid valves up to the temperature of the transmission.

Tractor moving

- Carry out reversing manoeuvres every 5 to 10 seconds, in 2nd or 3rd range.
- Measure and note the temperature.

Conditions for calibration:

- from 35 to 45°C: **optimum** calibration
- from 15 to 60°C: calibration authorised

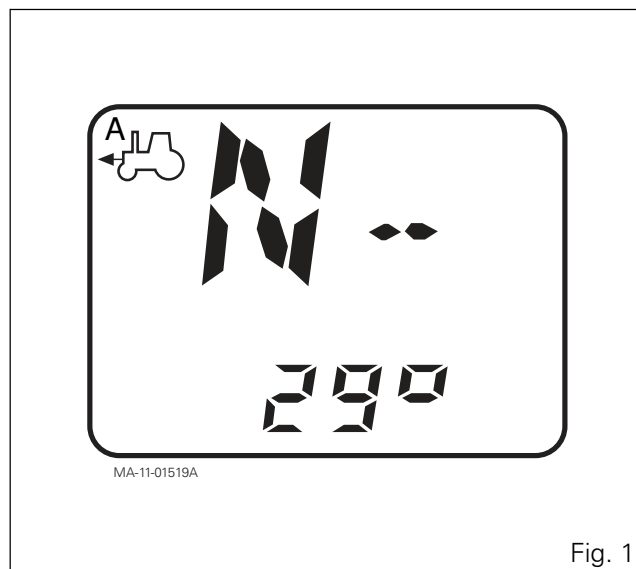


Fig. 1

AUTOTRONIC 5 - Dyna-6 - Calibration

Automatic calibration

1. Apply the hand brake.
2. Start the engine.
3. Release the clutch pedal.
4. Increase the engine speed to 1500 rpm \pm 100 with the hand throttle lever, or by activating a memorised speed (A or B).
5. Simultaneously, and at least for 3 seconds, activate:
 - the Power Shuttle arm in raised position (manual declutching)
 - the differential lock switch
6. The indicator lights for ranges 1 and 4 flash alternately and "T" is displayed on the right-hand screen of the DCC2 to indicate that the system is ready to start calibration (Fig. 2).
7. Shift the Power Shuttle lever to forward position to start calibration.
8. Calibration takes approximately 2 minutes and the indicator lights for ranges 1 and 4 flash alternately throughout.
9. Calibration is complete when the indicator lights for ranges 1 and 2 flash alternately.
10. Shift the Power Shuttle lever to neutral position to validate the calibration. The range indicator lights stop flashing and only the indicator light for the range engaged comes on.

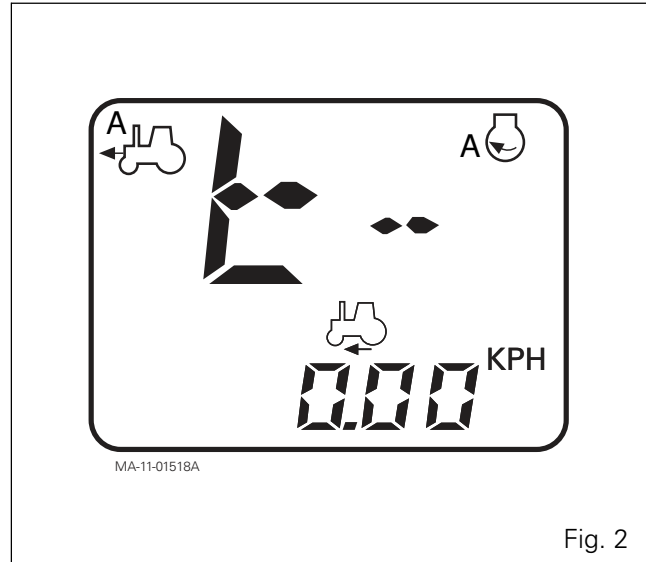


Fig. 2

NOTE 1: At the end of calibration, Autotronic 5 errors 24 and 27 may be displayed; this does not indicate a calibration error.

NOTE 2: To avoid calibration errors, it is important to:

- keep the engine speed set at 1500 rpm \pm 100
- to keep the PowerControl lever in forward position

NOTE 3: The calibration phase is totally independent of the possible settings for the Power Shuttle sensitivity in the DOT MATRIX or with the potentiometer (according to model).

Validation

Immediate validation after calibration

1. Without stopping the engine.
2. Carry out 10 forward/reverse Power Shuttle manoeuvres.
3. Carry out 10 neutral to forward and neutral to reverse Power Shuttle manoeuvres.
4. Assess the quality of the shifting, which should be deft and smooth.

NOTE 1: Take into account the Power Shuttle progressivity setting from the DOT MATRIX or using the potentiometer (according to model). A zero setting will allow the calibration to be validated correctly.

NOTE 2: Check that the differential lock and the front axle are disengaged before carrying out the manoeuvres.

Validation of a tractor that has already been calibrated

NOTE: The transmission temperature must be above 15° C.

1. Start the engine.
2. The front axle must be disengaged.
3. Carry out 10 forward/reverse Power Shuttle manoeuvres.
4. Carry out 10 neutral to forward and neutral to reverse Power Shuttle manoeuvres.
5. Assess the quality of the shifting, which should be deft and smooth.

NOTE: Take into account the Power Shuttle progressivity setting from the DOT MATRIX or using the potentiometer (according to model). A zero setting will allow the calibration to be validated correctly.

Calibration faults

NOTE: A fault due to non-compliance of the conditions required to access or maintain the calibration mode will cause errors and poor tractor performance.

Entry into calibration mode is not provided if:

- the transmission temperature is not correct
 - the engine speed is not 1500 rpm \pm 100
 - the Power Shuttle lever has not been placed in the forward position
 - the forward speed is not zero
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- Ensure the calibration access conditions are respected.
 - Check the solenoid valve coil connections.

The calibration is not correct if:

- the engine speed is not 1500 rpm \pm 100
- the gearbox temperature exceeds 60°C
- the Autotronic 5 label code is incorrect
- the Power Shuttle lever is placed in neutral position

NOTE: If the calibration fails, the incorrect parameters or default parameters (in the case of a new Autotronic 5 unit) are taken into account. For this reason, a new correct calibration must be carried out.